

U.S. Department of Education
Washington, D.C. 20202-5335

APPLICATION FOR GRANTS
UNDER THE

84.215G Innovative Approaches to Literacy

CFDA # 84.215G

PR/Award # S215G230053

Grants.gov Tracking#: GRANT13884933

OMB No. , Expiration Date:

Closing Date: May 15, 2023

PR/Award # S215G230053

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This application was generated using the PDF functionality. The PDF functionality automatically numbers the pages in this application. Some pages/sections of this application may contain 2 sets of page numbers, one set created by the applicant and the other set created by e-Application's PDF functionality. Page numbers created by the e-Application PDF functionality will be preceded by the letter e (for example, e1, e2, e3, etc.).



Application for Federal Assistance SF-424

* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>
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* 3. Date Received: <input type="text" value="05/15/2023"/>	4. Applicant Identifier: <input type="text"/>
--	--

5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>
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State Use Only:

6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>
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8. APPLICANT INFORMATION:

* a. Legal Name:

* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="[REDACTED]"/>	* c. UEI: <input type="text" value="[REDACTED]"/>
--	--

d. Address:

* Street1:

Street2:

* City:

County/Parish:

* State:

Province:

* Country:

* Zip / Postal Code:

e. Organizational Unit:

Department Name: <input type="text" value="Strategic Initiatives"/>	Division Name: <input type="text"/>
--	--

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

Title:

Organizational Affiliation:

* Telephone Number: Fax Number:

* Email:



Application for Federal Assistance SF-424

* 9. Type of Applicant 1: Select Applicant Type:

G: Independent School District

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

Department of Education

11. Catalog of Federal Domestic Assistance Number:

84.215

CFDA Title:

Innovative Approaches to Literacy; Promise Neighborhoods; Full-Service Community Schools; and Congressionally Directed S

* 12. Funding Opportunity Number:

ED-GRANTS-031423-001

* Title:

Office of Elementary and Secondary Education (OESE): Well-Rounded Education Programs: Innovative Approaches to Literacy (IAL) Program, Assistance Listing Number 84.215G

13. Competition Identification Number:

84-215G2023-1

Title:

84.215G Innovative Approaches to Literacy

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Project INNOVATE

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments



Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text"/>	<input type="text"/>
* b. Applicant	<input type="text"/>	<input type="text"/>
* c. State	<input type="text"/>	<input type="text"/>
* d. Local	<input type="text"/>	<input type="text"/>
* e. Other	<input type="text"/>	<input type="text"/>
* f. Program Income	<input type="text"/>	<input type="text"/>
* g. TOTAL	<input type="text"/>	<input type="text"/>

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

a. This application was made available to the State under the Executive Order 12372 Process for review on

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

Yes No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)**

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

NOTICE TO ALL APPLICANTS

OMB Number: 1894-0005
Expiration Date: 06/30/2023

The purpose of this enclosure is to inform you about a new provision in the Department of Education's General Education Provisions Act (GEPA) that applies to applicants for new grant awards under Department programs. This provision is Section 427 of GEPA, enacted as part of the Improving America's Schools Act of 1994 (Public Law (P.L.) 103-382).

To Whom Does This Provision Apply?

Section 427 of GEPA affects applicants for new grant awards under this program. **ALL APPLICANTS FOR NEW AWARDS MUST INCLUDE INFORMATION IN THEIR APPLICATIONS TO ADDRESS THIS NEW PROVISION IN ORDER TO RECEIVE FUNDING UNDER THIS PROGRAM.**

(If this program is a State-formula grant program, a State needs to provide this description only for projects or activities that it carries out with funds reserved for State-level uses. In addition, local school districts or other eligible applicants that apply to the State for funding need to provide this description in their applications to the State for funding. The State would be responsible for ensuring that the school district or other local entity has submitted a sufficient section 427 statement as described below.)

What Does This Provision Require?

Section 427 requires each applicant for funds (other than an individual person) to include in its application a description of the steps the applicant proposes to take to ensure equitable access to, and participation in, its Federally-assisted program for students, teachers, and other program beneficiaries with special needs. This provision allows applicants discretion in developing the required description. The statute highlights six types of barriers that can impede equitable access or participation: gender, race, national origin, color, disability, or age. Based on local circumstances, you should determine whether these or other barriers may prevent your students, teachers, etc. from such access or participation in, the Federally-funded project or activity. The description in your application of steps to be taken to overcome these barriers need not be lengthy; you may provide a clear and succinct description of how you plan to address those barriers that are applicable to your circumstances. In addition, the information may be provided in a single narrative, or, if appropriate, may

be discussed in connection with related topics in the application.

Section 427 is not intended to duplicate the requirements of civil rights statutes, but rather to ensure that, in designing their projects, applicants for Federal funds address equity concerns that may affect the ability of certain potential beneficiaries to fully participate in the project and to achieve to high standards. Consistent with program requirements and its approved application, an applicant may use the Federal funds awarded to it to eliminate barriers it identifies.

What are Examples of How an Applicant Might Satisfy the Requirement of This Provision?

The following examples may help illustrate how an applicant may comply with Section 427.

- (1) An applicant that proposes to carry out an adult literacy project serving, among others, adults with limited English proficiency, might describe in its application how it intends to distribute a brochure about the proposed project to such potential participants in their native language.
- (2) An applicant that proposes to develop instructional materials for classroom use might describe how it will make the materials available on audio tape or in braille for students who are blind.
- (3) An applicant that proposes to carry out a model science program for secondary students and is concerned that girls may be less likely than boys to enroll in the course, might indicate how it intends to conduct "outreach" efforts to girls, to encourage their enrollment.
- (4) An applicant that proposes a project to increase school safety might describe the special efforts it will take to address concern of lesbian, gay, bisexual, and transgender students, and efforts to reach out to and involve the families of LGBT students.

We recognize that many applicants may already be implementing effective steps to ensure equity of access and participation in their grant programs, and we appreciate your cooperation in responding to the requirements of this provision.

Estimated Burden Statement for GEPA Requirements

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit (Public Law 103-382). Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20210-4537 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1894-0005.

Optional - You may attach 1 file to this page.

1234-TCS GEPA final.pdf			
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General Education Provisions Act (GEPA) Section 427 Statement

This grant targets assistance to undeserved populations in the urban settings of Alabama.

This applicant, Tuscaloosa City Schools, is required by district policies and by the laws of the State of Alabama to provide equal access and opportunities for all students, employees and program beneficiaries. These mandates prohibit discrimination on the basis of gender, race, national origin, color, disability, and age.

Accordingly, Tuscaloosa City Schools pledges full compliances with the requirements of GEPA Section 427, ensuring equitable access to, and participation in, programs by persons with special needs and Section 504 of the Rehabilitation Act.

Adherence to non-discrimination policies will be required of all community partners and agencies as well as any consultants or advisers retained during the life of the project. Non-discrimination language is a standard part of all Tuscaloosa City Schools contracts and agreements.

To further ensure equitable access, the grant's promotional and outreach efforts will target a wide range of school staff, the staff of our community partners and also those related agencies.

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

* APPLICANT'S ORGANIZATION	
<input style="width: 100%;" type="text" value="Tuscaloosa City Schools"/>	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: <input style="width: 100px;" type="text" value="Dr."/>	* First Name: <input style="width: 200px;" type="text" value="Andrew"/> Middle Name: <input style="width: 150px;" type="text" value="Xavier"/>
* Last Name: <input style="width: 300px;" type="text" value="Maxey"/>	Suffix: <input style="width: 100px;" type="text"/>
* Title: <input style="width: 250px;" type="text" value="Director of Strategic Initiatives"/>	
* SIGNATURE: <input style="width: 300px;" type="text" value="Michael Daria"/>	* DATE: <input style="width: 150px;" type="text" value="05/15/2023"/>

**U.S. Department of Education Supplemental Information for the SF-424
Application for Federal Assistance**

1. Project Director:

Prefix: Dr.	* First Name: Andrew	Middle Name: Xavier	* Last Name: Maxey	Suffix:
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Project Director Level of Effort (percentage of time devoted to grant):

Address:

* Street1: 1210 21st Avenue
Street2:
* City: Tuscaloosa
County:
* State: AL: Alabama
* Zip Code: 35401-2934
Country: USA: UNITED STATES

* Phone Number (give area code) Fax Number (give area code)

* Email Address:

Alternate Email Address:

2. New Potential Grantee or Novice Applicant:

a. Are you either a new potential grantee or novice applicant as defined in the program competition's notice inviting applications (NIA)?

Yes No

3. Qualified Opportunity Zones:

If the NIA includes a Qualified Opportunity Zones (QOZ) Priority in which you propose to either provide services in QOZ(s) or are in a QOZ, provide the QOZ census tract number(s) below:

1125011600	1125011701	1125011800
1125012100	1125012303	1125012405
1125012600	1125012800	

4. Human Subjects Research:

a. Are any research activities involving human subjects planned at any time during the proposed Project Period?

Yes No

b. Are ALL the research activities proposed designated to be exempt from the regulations?

Yes Provide Exemption(s) #(s): 1 2 3 4 5 6 7 8

No Provide Assurance #(s), if available:

c. If applicable, please attach your "Exempt Research" or "Nonexempt Research" narrative to this form as indicated in the definitions page in the attached instructions.

Abstract

An abstract is to be submitted in accordance with the following:

1. Abstract Requirements

- Abstracts must not exceed one page and should use language that will be understood by a range of audiences.
- Abstracts must include the project title, goals, and expected outcomes and contributions related to research, policy, and practice.
- Abstracts must include the population(s) to be served.
- Abstracts must include primary activities to be performed by the recipient.
- Abstracts must include subrecipient activities that are known or specified at the time of application submission.

For research applications, abstracts also include the following:

- Theoretical and conceptual background of the study (i.e., prior research that the investigation builds upon and that provides a compelling rationale for this study).
- Research issues, hypotheses and questions being addressed.
- Study design including a brief description of the sample including sample size, methods, principals, and dependent, independent, and control variables, as well as the approach to data analysis.

[Note: For a non-electronic submission, include the name and address of your organization and the name, phone number and e-mail address of the contact person for this project.]



* Attachment:

TCS INNOVATE Abstract

Tuscaloosa City Schools (TCS) is a midsize urban city school district whose goal is to improve interdisciplinary literacy instruction significantly in the and ultimately achieve 100% literacy among our students. The school system serves 11,035 students in grades K-12 at 20 school sites. TCS, in partnership with the University of Alabama, the Alabama State Department of Education (ALSDE), First Book (FB), University of Alabama In-Service Center (UASC)– State Agency and the Southern Regional Education Board (SREB) (National Non-Profit partner) proposes to implement project INNOVATE to supporting the development of high-quality integrated interdisciplinary instruction that will provide all students with the literacy skills needed to meet or exceed grade-level standards in coordination with school libraries, for book distribution, and childhood literacy activities . In coordination with libraries, the project will provide a learning environment that is racially, ethnically, culturally, disability status and linguistically responsive and inclusive, supportive, and identity safe (Absolute Priority 2). **Goal 1)** To develop and implement a Literacy Plans that integrates subject areas, including science, technology, engineering, arts, or math within the TCS schools that makes provisions for applied, interdisciplinary learning at all age/grade levels. **Outcomes:** By August, of each grant year, 100% of participating schools will develop, modify or expand their K-12 Literacy plans to include interdisciplinary integration based up on research-based strategies from the WWC to meet the needs of all students, **Goal 2)** To improve school readiness and success from birth through grade 12 in the area of language and literacy development. (AP1) with emphasis on students with racial, ethnic, cultural, disability, and linguistic differences (AP 2), **Outcomes:** In each year of the grant a 4% increase over baseline data will occur in 4th & 8th grade students ACAP Summative State Assessment. **Goal 3)** To implement a data-based decision-making process to collect & analyze, high quality data in a timely manner (RTI), **Outcomes:** By August

in each year of the grant, 100% of students will obtain access to online books and receive personal books to assist in becoming college and career ready, **Goal 4)** To implement high-quality school library projects that increase access to a wide range of literacy resources (print or electronic) and provide reading engagement to students, **Outcomes:** By August of each grant year, a minimum of 85% of librarians will attend 75% of local literacy engagement trainings pertaining to pedagogy in the field of collaborative, cross-disciplinary planning for instruction, effective use of instructional technology, and other educational literacy strategies.

Absolute Priority & Competitive Preference Evidence		
71% Free/Reduced Lunch, 22.9% in Poverty, Poor Test Scores, Scoring Below Grade level, At-Risk students, Students with Disabilities not scoring at state average		
Topics to Address Preference	Services to Address Preference	Page Numbers
1) Book Distribution & Childhood Literacy Activities (AP 1)	Book distributions, childhood literacy activities provided for birth to grade 12	1, 2, 8, 15, 24, 25, Appendix page 129-131
2) Responsive Libraries (AP 2)	Project creates an inclusive, supportive, and identity-safe learning environment for all	1, 10, 11 – 15 Appendix page 129-131
3) Urban Service Area (CP 1)	LEA with a locale code of 12 Midsize	1, 9 Appendix page 51
4) Promoting Equity (CP 4)	Promote equity and resource in Early Learning, CTE and out of school programs	2, 9, 10, 12-16 & Appendix 65, 129-131

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

To add more Project Narrative File attachments, please use the attachment buttons below.

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TCS Literacy Grant

(a) Significance

(1) The significance of the problem or issue to be addressed by the proposed project.

Tuscaloosa City Schools (TCS) is a midsize urban city school district (see **NCES Indicator chart on page 51 of appendix**), whose goal is to improve interdisciplinary literacy instruction signifi-



cantly in the and ultimately achieve 100% literacy among our students. The school system serves 11,035 students in grades K-12 at 20 school sites. TCS, in partnership with the University of Alabama, the Alabama State Department of Education (ALSDE), First Book (FB), University of Alabama In-Service Center (UASC)– State Agency and the Southern Regional Education Board

(SREB) (National Non-Profit partner) (all commitment letters in appendix pgs. 52-53) proposes to implement project **INNOVATE** to supporting the development of high-quality integrated interdisciplinary instruction that will provide all students with the literacy skills needed to meet or exceed grade-level standards in coordination with school libraries, for book distribution, and childhood literacy activities. In coordination with libraries, the project will provide a learning environment that is racially, ethnically, culturally, disability status and linguistically responsive and inclusive, supportive, and identity safe (Absolute Priority 2). In 2019, the Alabama legislature passed the Alabama Literacy Act (see in appendix pages 54-64) to be implemented in the 2021-2022 school year. TCS is seeking funding to meet Absolute Priority #1 (AP 1) to: **1)** assist K-3rd grade staff in the implementation of the Alabama Literacy Act with embedded interdisciplinary opportunities which was established to improve the reading proficiency of public-school kindergarten through 3rd grade students and ensure that those students are able to read at or above grade level by the end of the 3rd grade. The INNOVATE project design will also provide services to 4th to 12th grade staff to develop comprehensive interdisciplinary literacy plans, which also content

area concepts (such as analyzing, synthesizing, and determining their stance) so that all students can obtain proficiency levels according to the State of Alabama Assessment. 2) provide early literacy services, including pediatric literacy programs in research-based methods of early language and literacy promotion provide developmentally appropriate book and 3) provide high-quality interdisciplinary focused books on a regular basis to children and adolescents from low-income communities. TCS’s problems lie in the following data. The poverty rate of individuals who are intended to benefit from the requested grant is 22.90% according to data series available from the SAIPE 2021 dataset for school district. (See data in Appendix page 65))

Tuscaloosa City Schools also experience poverty through Qualified Opportunity Zones within our district boundaries. According to the 2021 Census data, only 48% of housing is owned by individuals as compared to 64% for the United States. This equates to 26% or less of the population owning their own home. The same data can be found with comparing the median income: Tusculossa City \$52,508; United States \$69,021 or a \$11,441 difference (or 20%). This is also 5% or \$2,435 below the State of Alabama. There are also double the number of people in poverty compared to the United States and the students in poverty in the county area higher than the state of Alabama average. 71% of all students also receive Free or Reduced Lunch District Wide.

Region	Percent Below Poverty	Per Capita Income
Tuscaloosa City	22.9.0%	\$29,476
Alabama	16.1%	\$30,458
United States	11.6%	\$37,638

(2) The extent to which the proposed project is likely to build local capacity to provide, improve, or expand services that address the needs of the target population.

Having the University of Alabama in our backyard inflates the education of our population. Although we have high educational attainment, it is the case of the haves and the have-nots. Our

area has a higher percentage of individuals with bachelor’s degrees than the rest of Alabama and the nation by two (2) percent, but looking at the test scores of students, it is easy to see this is not the case with our parents. Project *INNOVATE* will target a county that includes Opportunity Zone (economically distressed communities) census tract neighborhoods which includes half of the target schools (Chart in Appendix page 66). Increasing evidence supports the project link between lower Socio-Economic Status (SES) and learning disabilities or other adverse psychological outcomes (AP 2) that affect academic achievement: 1) Low SES and exposure to adversity are linked to decreased educational success (McLaughlin & Sheridan, 2016). Such toxic stress in early childhood has lasting impacts on learning (Committee on Psychosocial Aspects, 2012); 2) Children from lower-SES households are about twice as likely as those from high-SES households to display learning-related problems. 3) A mother’s SES is also related to her child’s inattention, disinterest, and lack of cooperation in school (Morgan et al., 2009). Project *INNOVATE* aims to provide literacy training support through an interdisciplinary literacy model for struggling students through research-based strategies to address the whole child in all content areas. All schools are economically disadvantaged and classified as Title I.

	Tuscaloosa City Schools	Student Category	Tuscaloosa City Schools
White	23%	American Indian\Alaskan native	0.5%
Black	67%	Asian	2%
Hispanic	6%	Two or More Races	1.5%

Aimsweb Early Literacy data for 2022-2023 Beginning of the Year - Percent of Elementary Students at Moderate or High Risk on Fluency, Comprehension and Vocabulary

	Kindergarten	First Grade	Second Grade	Third Grade
Elementary School	58%	56%	53%	44%

Similar results can be found in the state assessment on the ACAP Summative test for academic areas. The following illustrates disaggregation of test data from the 2021-2022 school year: TCS has also observed difference in Proficiency scores between sub-groups.

Reading data for 2021-2022 Schoolyear - Students <i>NOT</i> Proficiency (state test)	
Students in grades 4-5	63%
Students in grades 6-8	64%

On the ACT Reading Test, TCS high school students scored an 18.1 average while the rest of the state averaged an 18.8 or TCS students are almost 1% lower than their peers.

(3) The importance or magnitude of the results or outcomes likely to be attained by the proposed project, especially improvements in teaching and student achievement.

When student-learning outcomes define the content and skills that students are expected to know, teachers must understand how to teach content in ways that model how students will be expected to demonstrate their learning in school and beyond. Evidence shows that identifying precise student-learning needs and adapting teacher education to meet those needs is the most direct method for improving student outcomes. “It is critical,” writes Richard DuFour (2004), “not simply to ensure that students are taught but to ensure that they learn. This simple shift—from a focus on teaching to a focus on learning—has profound implications.”

Gaps in Service	Importance or magnitude of the Results or Outcomes	Improvements in Teaching and Student Achievement
Due to the new Alabama Literacy	Participating schools will develop, modify or expand their K-12 Literacy plan based up on research-	The New Literacy Act will provide support through the University of Alabama In-Service Center along

<p>Act going into effect in the 21-22 school year, school literacy plans, and strategies need to be updated</p>	<p>based strategies from the WWC to meet the needs of all students based up on their needs from an RTI technology screener (AP 2)</p>	<p>with SREB. Partners will assist in developing literacy plans to improve teacher access to research based strategies, which will improve student achievement.</p>
<p>Over 56% of the student population is not reaching proficiency on State and Local assessments</p>	<p>Increase in student achievement with emphasis on struggling students with racial, ethnic, cultural, disability, and linguistic differences (AP2)</p>	<p>By providing researched based strategies to teachers and librarians, and books to students, engagement will improve, and student achievement will increase during the grant period.</p>
<p>All students are not provided developmentally appropriate books</p>	<p>100% of students will obtain access to online books and receive personal books to assist in becoming college and career ready.</p>	<p>By providing high-quality books on a regular basis to students and adolescents from our low-income community there will be an increase in reading motivation, performance, and frequency</p>
<p>Librarians currently do not participate in grade level or department level collaborative planning</p>	<p>All schools will create structured planning time in which librarians will participate in cross-disciplinary and/or grade level planning meetings not less than one time each month. (AP 1 & 2)</p>	<p>With the additional support of highly skilled librarians and Interdisciplinary Teaching Specialists, teachers will improve pedagogy and strategies in the context of collaborative teaching and planning in order to develop student engagement on literacy tasks.</p>

<p>There is a disconnect between teaching literacy standards and literacy standards of other content areas</p>	<p>Classrooms support literacy instruction by connecting to other content standards to build relevance and engagement in moving students to proficiency in literacy.</p>	<p>Classroom teachers will be assisted by Interdisciplinary Teaching Specialist at the K-12 level to improve literacy engagement with high-impact teaching strategies that ask students to regularly demonstrate understanding through hands-on learning by doing, engaging in dialogue, solving problems with uncertain solutions, or creating original works and products.</p>
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(b) Quality of the Project Design

(1) Goals, objectives, and outcomes to be achieved are clearly specified and measurable.

Project **INNOVATE** proposes to provide a sustained, comprehensive and coherent approach by adhering to the goals, objectives and outcomes in the chart below. To assure the fidelity and cohesiveness in implementation, the Advisory Council (**see makeup in Management section pg. 19**) will review and monitor progress after all activities are initiated and on a continual review, assess, and modify cycle. The Advisory Council will oversee adherence to the process design, the ongoing review of objectives, and fidelity of implementation which will facilitate a coherent and sustained progress of high-quality professional development. **See Project Design model on page 129-130 of Appendix**

Goal 1: To develop and implement a Literacy Plans that integrates subject areas, including science, technology, engineering, arts, or math within the TCS schools that makes provisions for applied, interdisciplinary learning at all age/grade levels.

Objective 1:

1.1 - Schools will receive training from National Non-Profits in literacy and staff development

1.2 - Schools will create, develop or improve a K-12 systemic literacy plans with interdisciplinary, applied learning which include libraries as an internal resource

1.3 - Literacy plans will follow the RTI model and include plans for identification and remediation of tier 2 and tier 3 students. (**Based on the Alabama Literacy Act appendix pg. XX-XX**)

Outcomes: By August, of each grant year, 100% of participating schools will develop, modify or expand their K-12 Literacy plans to include interdisciplinary integration based up on research-based strategies from the WWC to meet the needs of all students.

Goal 2: To improve school readiness and success from birth through grade 12 in the area of language and literacy development. (**API**) with emphasis on students with racial, ethnic, cultural, disability, and linguistic differences (**AP 2**)

Objective 2:

2.1- The percentage of fourth (4th) graders participating in the project who demonstrated individual student growth over the past year on State reading assessments (**GPRA #1**)

2.2 - The percentage of eighth (8th) graders participating in the project who demonstrated individual student growth over the past year on State reading assessments (**GPRA # 2**)

Outcomes: - In each year of the grant a 4% increase over baseline data will occur in 4th & 8th grade students ACAP Summative State Assessment.

Goal 3: To implement a data-based decision-making process to collect & analyze, high quality data in a timely manner (RTI)

Objective 3:

3.1 - The percentage of schools participating in the project whose book-to-student ratios increase from the previous year. (**GPRA #3**) & (**AP 1**)

3.2 - The percentage of participating children who receive at least one free, grade- and language-appropriate book of their own (**GPRA #4**) & (**AP 1**)

3.3 - The percentage of participating high-school students who are college and career ready (Content Area Reading) will increase from previous year

Outcomes: By August in each year of the grant, 100% of students will obtain access to online books and receive personal books to assist in becoming college and career ready.

Goal 4: To implement high-quality school library projects that increase access to a wide range of literacy resources (print or electronic) and provide reading engagement to students

Objective 4:

4.1 - 100% of the schools will collaborate between library, Interdisciplinary Literacy Specialists and school personnel to facilitate subject-specific pedagogy differentiated based on student's developmental level (**AP 1 & 2**)

4.2 - 100% percentage of schools will implement pedagogy supported by universal design for learning, technology, and other educational engagement strategies. (**AP 1 & 2**)

Outcomes: By August of each grant year, a minimum of 85% of librarians will attend 75% of local literacy engagement trainings pertaining to pedagogy in the field of collaborative, cross-disciplinary planning for instruction, effective use of instructional technology, and other educational literacy strategies.

(2) Project Design is appropriate and will address, the needs of the target population.

improve the system which currently leaves many TCS students behind — lack of reading engagement, limited engagement professional development of teachers working with librarians, student interdisciplinary activities that reinforce literacy skills need to be improved and pediatric literacy programs need to be adapted to meet the new Alabama Literacy Act. **The chart on page 129-130 in the Appendix illustrates our Project Design methodology and the reason for selecting our activities.**

(3) Project represents an exceptional approach to meet statutory purposes and requirements

To meet the statutory requirement, *INNOVATE* will serve 11,035 students in 20 schools, who as a district has an average of **22.9% of their students from families with incomes below the poverty line.** (SEE SAIPE Poverty data in appendix page 65) To meet the program requirements, *INNOVATE* will provide the following Program Services: (1) Interdisciplinary Literacy Professional development for teachers, parents and principals; (2) Development and dissemination of accessible interdisciplinary literacy instructional materials for all content areas and interdisciplinary literacy plan development, so that all teacher will understand their role in literacy instruction and (3) State and national outreach partners to strengthen and expand the integration of interdisciplinary strategies to incorporate literacy skills into all other subjects.

(4) The extent to which the proposed project demonstrates a rationale.

Project *INNOVATE* services reflect current information from the research and effective practice (evidence on pages 67-128) to improve relevant outcomes. To determine the appropriate services for our endeavor, staff conducted extensive research and literature evaluation of best practices for improving literacy achievement and engagement in urban schools with needs similar to TCS. TCS does an ongoing needs assessment by soliciting input from students, parents, educators, and community-based partners. Disaggregation of the data, stakeholder input, and the research and litera-

ture review led Project *INNOVATE* staff to adopt a research-based framework for delivering services with supporting strategies that reflect best practices for improving academic and engagement outcomes of TCS students. Our focus was to identify activities that targeted the most promising intervention methods in this setting. The logic model (**APPENDIX page 131**) was developed by TCS and partners to represent our process and expected outcomes and demonstrate a rationale.

(c) Quality of Project Services

Strategies to ensure equal access & treatment for underrepresented participants

To ensure equal access, all students in grades K-12 will be provided access. Project *INNOVATE*'s instructional and assessment methodologies are designed to accommodate "at-risk" students and those with special needs. Considering our overall population, **71% of our students qualify for free and reduced lunch, and 22.9% of the same students live in poverty (SAIPE data appendix page 65)**; there are multiple barriers to learning. All parents and community members will be invited to participate in the *INNOVATE* program. This means that every student, staff, parent, and community member, regardless of age, race, color, national origin, gender, financial ability, learning disability, or handicap, will have the opportunity to participate in the program. This is also stated in our GEPA plan, which will be uploaded with the application. 95% of the students in the schools fit into one of the above categories, so equal access for members of groups that traditionally have been under-represented based on age, race, color, national origin, gender, financial ability, learning disability, or handicap is assured.

(1) Services provided are appropriate to the needs of the intended recipients or beneficiaries

The project *INNOVATE*'s proposal supports the establishment of the academic and engagement professional development in all content areas for teachers, parents and principals. This will be addressed through Interdisciplinary Literacy and Engagement Academies that offer strategies for

all veteran and new teachers to strengthen their knowledge of literacy and engagement strategies in all content areas. TCS board policy contains regulations and strategies to ensuring equal access and treatment for eligible project participants who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. TCS also ensures all training sites used in this project meet all applicable regulations of safety, accessibility services and health measures for legal and program standards. With the development and dissemination of accessible instructional materials and literacy-based programming any individual will be provided access including all groups (but not limited to) include above in TCS Board Policy. By providing community and national outreach activities all partners at the local, state and national level will also provide equal access.

2) The impact of the services to be provided on the intended recipients of those services

Project **INNOVATE** is grounded in effective interdisciplinary teaching and learning that promotes literacy (see **PD plan in appendix pgs. 132-150**) and based upon selected strong evidence of research and the Alabama Literacy Act. These documents define what our struggling students are expected to know and will provide all students with the literacy skills needed to meet or exceed grade-level standards. Students who meet the standards develop the skills in reading, writing, speaking, and listening that are the foundation for any creative and purposeful expression in language. Effective literacy instruction is “developmentally appropriate, explicit, evidence-based instruction” Interconnectedness of literacy is an approach to teaching and learning that integrates the content and behaviors of all disciplines. Language is fundamental to interdisciplinary literacy strategies which allow students to develop their understanding of all disciplines and to do and communicate through that content lens. Knowing how to read and write content area texts and diagrams, facilitates a students’ understanding of complex interdisciplinary knowledge and processes. The reverse is true as well. Students must activate their knowledge of disciplinary content;

such as, problem solving, critical analysis, communication, collaboration, design, creating original works and products, etc., in order to develop their literacy skills to the degree required by colleges and careers. **Effective Early Literacy Instruction: Birth through Age 5:** In addition to providing individualized goals, INNOVATE aims to have meaningful learning experiences for each and every child that draw on familiar topics and materials. Providing more open-ended exploration and materials can improve engagement in inclusive preschool settings (Coelho, Cadima, & Pinto 2019). Learning to read is a developmental process. Most children follow a similar pattern and sequence of reading behaviors as they learn how to read: from appreciation for and awareness of print to phonological and phonemic awareness to phonics and word recognition. Foundation skills are reading skills that students typically develop in the primary grades. The skills and behaviors that develop early serve as the base for later competence and proficiency. They are the building blocks that children learn to utilize to develop subsequent, higher-level skills to become proficient readers. The National Early Literacy Panel (NELP) conducted a synthesis of the scientific research on the development of early literacy skills in children ages zero to five. The NELP report identified six key predictors for reading and school success. These skills and abilities include alphabet knowledge, phonological awareness, rapid automatic naming of letters or numbers, rapid automatic naming of objects or colors, writing and phonological memory (NELP, 2008). Children who do not acquire mastery of these skills fall behind their classmates and generally are not reading and comprehending at grade level. NELP also concluded that there are an additional five early literacy skills that are moderately predictive of later literacy achievement: Concepts about print, print knowledge, reading readiness, oral language, and visual processing, all of which are used in content areas classes in grades 6-12. **Effective Interdisciplinary Literacy Instruction: K-12** – Adolescent literacy is critical to the classroom success of middle- and high-school students. Reading in the content areas (e.g., social studies, science) is different

from reading for enjoyment. It is a necessary step to the achievement of expected outcomes, such as: 1) Building conceptual knowledge, 2) Solving problems, 3) Completing an academic task, and 4) Understanding a context or perspective

Students must be able to read and understand written material associated with different content areas, learn from various types of texts, and apply the information they read to new learning. This type of literacy is referred to as *academic literacy*. Academic literacy involves the kinds of reading, learning, and understanding that are related to academic tasks in content areas.

Successful performance in subject areas depends on strong reading skills. A surprising number of middle and high school students lack academic literacy skills and would benefit from explicit content-area reading instruction. This is true not only for students with reading difficulties but also for those who are competent readers (i.e., those who score well on reading assessments) but still have difficulty comprehending content material. In spite of this need, students generally do not receive this type of instruction in the content areas. In a 2012 study, researcher Timothy Shanahan argued, “interdisciplinary literacy is NOT the new name for content area reading.” Rather, it is anchored in the disciplines with explicit instruction focused on discipline-specific cognitive strategies, language skills, and habits of practice. In other words, “the idea is not that content-area teachers should become reading and writing teachers, but rather that they should emphasize the reading and writing practices that are specific to their subjects, so students are encouraged to read and write like historians, mathematicians, and other subject-area experts. P21, the Partnership for 21st Century Learning (formerly the Partnership for 21st Century Skills) has identified critical thinking, communication, collaboration, and creativity as learning skills that students need to master to be prepared for an increasingly complex life and workforce. This means that teachers cannot just teach students how to understand content; they must also teach students how to think

and how to learn. Unlike mathematics, where one skill builds upon another, the process of developing literacy skills is one that requires repeated application of skills, continual learning, and practice. Project INNOVATE will deliver professional development opportunities for teachers to guide students in adopting a recursive approach to literacy: returning to a passage after a first reading, focusing on key passages and details, identifying patterns, and asking questions. The use of inquiry, key habits of practice, and academic language are foundational elements of literacy at the secondary level, similar to phonemic awareness, phonics, fluency, vocabulary, and comprehension, at the elementary level. These foundational elements of literacy are very important because they teach students how to learn, think, and manage their learning with competence and confidence. According to Barron & Darling-Hammond, 2008, “students in grades 6-12 who are in more inquiry learning-based classrooms learn more deeply and perform better on complex tasks, especially when they are required to use interdisciplinary knowledge to solve real-world problems.” Project INNOVATE will provide teachers with real-world classroom strategies for inquiry by providing Interdisciplinary Literacy Specialists who will deliver robust support through high quality, job-embedded, professional learning in the areas of reading complex disciplinary text through explicit teaching of academic language and modeling self-questioning. In this way, teachers have assistance in helping students develop the habits of practice, in reading, writing, viewing, speaking, thinking, listening, reasoning, and critiquing. The INNOVATE program will also address these interdisciplinary needs by providing professional development by Southern Regional Education Board (SREB) in the use literacy-based assignments to support the learning of literacy and content standards. Participants will also participate in the research-based program of Reading Apprenticeship to improve academic and literacy achievement. **(See research study in Appendix pages 101-111)**. To respond to our identified gaps and weaknesses (pages 5-7), we have developed a comprehensive array of services. A research-based, continuous improvement

assessment model that will ensure our services have the desired impact. Our program will result in systemic change and will ensure that All Students Can Succeed.

How <i>INNOVATE</i> will successfully address the needs of the target population			
Current Services	Activities to Improve Gaps in Service	Gaps addressed with data	Partners to address the Gaps in Service
Literacy plans are being developed and should be in place for the 24-25 schoolyear, however, interdisciplinary concepts are not embedded within plans	Southern Regional Education Board - Literacy Design Collaborative Model (Appendix pages 170-171)	Due to the new Alabama Literacy Act going into effect in the 21-22 school year, school literacy plans, and strategies need to be updated with STEM Integration	Southern Regional Education Board provide examples to improve teacher and student behaviors and learning artifacts found in classrooms through their evidence-based Literacy Design Collaborative Model
School and classroom libraries are 10 or more years old and a very small sample of STEM related titles	<ul style="list-style-type: none"> • Book distributions for students • Parent nights with book distributions • Literacy materials for parents of birth to age 5 • Free Book Fair nights for families 	All students are not provided developmentally appropriate books	-Dolly Parton Foundation -The House Tuscaloosa *Current book providers

<p>Librarians and other subject teachers participate in quarterly meetings which pertain to library-based literacy programming and operations—but is not centered on collaborative planning with classroom teachers</p>	<p>Provide research-based strategies and professional development to ensure our school librarian model of collaboration illustrates that successful collaboration with teachers involves integrating instruction and curriculum so that student learning improves</p>	<p>Librarians currently are not part of the classroom planning process</p>	<p>SREB will provide model sessions for co-teaching where teacher-librarian collaboration has been successful by using a variety of strategies to reach all learners and help them cultivate their skills</p>
<p>Literacy is taught in English classes, STEM in STEM classes. TCS needs a collaborative model for integration</p>	<ul style="list-style-type: none"> • Develop 21st Century Interdisciplinary Literacy Libraries • Reading Apprentice will train teachers to prepare students with high-level literacy skills • Engineering is Elementary Literacy Based STEM 	<p>There is a disconnect between STEM instruction and literacy integration</p>	<p>Reading Apprentice Engineering is Elementary will use the Engineering Design Process and our engineering Habits of Mind as the foundation to provide access for all learners.</p>

(3) The services to be provided by the project are focused on those with greatest needs

Project INNOVATE has reviewed information during the Parent Leadership Academies from research-based practices, talked with each school’s staff and has learned from their experience in

working with several other community projects to form a research-based plan to target those students with the greatest need. The TCS district is building Project INNOVATE on the foundation of these practices in similar settings, experienced advice from the University of Alabama and SREB and from past lessons learned in the field of education. TCS efforts will only be as good as our knowledge of each student as an individual reader, writer and learner. Thus, we must strengthen our formative assessment rituals and routines in order to have the data and information necessary to make constructive decisions about instructional practices. Our first focus of strong selected research on the Reading Apprenticeship The program’s research illustrated students need strong literacy skills to succeed in core academic subjects—English, mathematics, science, and social studies— and to be prepared for college and careers. Reading Apprenticeship’s professional development assists teachers in improving their students’ literacy skills. Our second focus area, the five components of reading in the content area classroom – phonemic awareness, phonics, fluency, vocabulary, and comprehension – reflects TCS’s ongoing efforts to strengthen students’ reading achievement with the essential building blocks of literacy. Project INNOVATE demonstrates the worth of investing more of our professional energy to cultivating these vital skills within our students. Nonfiction interdisciplinary literacy, our third focus area, reflects an urgent need to strengthen explicit instruction of reading and writing information texts. Focusing on nonfiction literacy aligns to the reading, writing, and content area learning skills articulated in the new Alabama Reading Initiative. Helping the TCS students to become stronger comprehenders and composers of nonfiction is paramount in improving our children’s school readiness and success through grade 12, and pivotal to their success in all academic pursuits. The fourth focus area involves an interdisciplinary approach to oral and written language and academic vocabulary development is especially critical for early learners to establish a strong foundation for literacy and learning and vital for all of our English language learners in realizing school success. Our second

strong research study recommends vocabulary instruction is essential in teaching learners to read. It is rare that core reading programs include adequate guidelines for vocabulary instruction for all learners. So, the district needs to provide teachers with tools that will help them support vocabulary development. District activities of the INNOVATE program will concentrate on five key objectives: (1) completion of the school literacy plans; (2) coordination and alignment of resources and strategies for improving interdisciplinary literacy; (3) comprehensive build-out of interdisciplinary resources by grade level and the focus areas; and (4) provision of technical assistance, i.e., professional development to include coaching and mentoring through Interdisciplinary Literacy Specialists, regional conferences, on-site workshops and web-based resources (such as a dedicated website, webinars, and networks). Additionally, to strengthen the goals above in improving struggling children's learning and achievement, TCS will champion the effective use of technology through our core content adoptions – Core Knowledge Language Arts CKLA, Houghton Mifflin Harcourt (HMH- Savvas) programs. The intentions of this focus include providing students with interactive texts and resources to help strengthen their acquisition of the five components reading (coupled with systematic and explicit instruction); giving students greater access to and practice of nonfiction literacy; supporting the interdisciplinary literacy learning of our English language-learning children and families and our disadvantaged students; deepening children's motivation to engage in reading and writing during and outside of school; and strengthening our capacity to evaluate and communicate student growth over time.

(d) Quality of the Management Plan

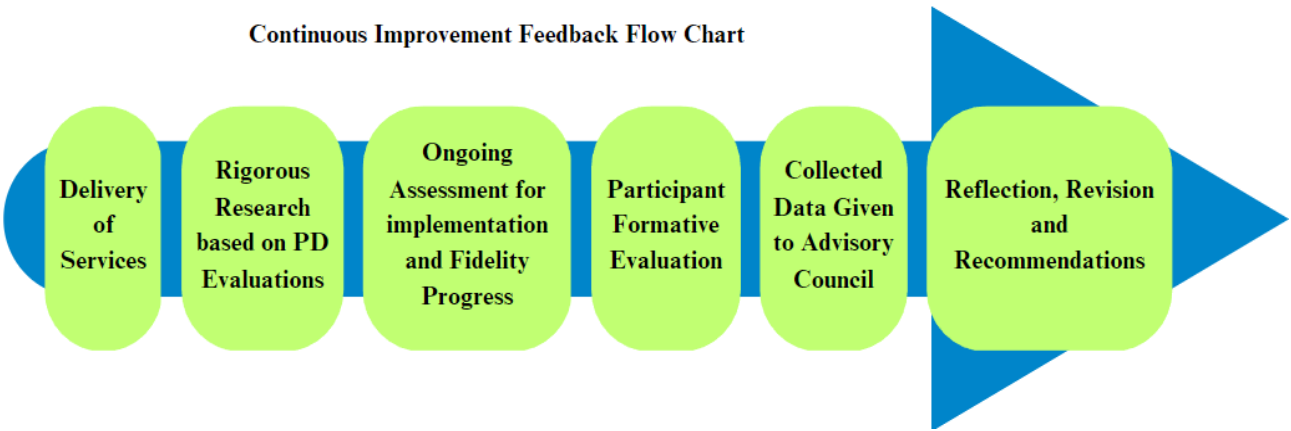
(1) Project on time\within budget, including responsibilities, timelines, and milestones tasks.

To ensure that the stated goals, objectives and outcomes for the proposed project are met, **INNOVATE** will operate under a solid management plan with clearly defined roles, responsibilities,

and timelines that will serve as the underpinning of **INNOVATE** . **Organizational chart** of Project **INNOVATE** **can be found in the Appendix on page 173**. The foundation of the management plan is the Advisory Council (AC). The **Advisory Council** will consist of the following: Project Director, University of Alabama partners, Interdisciplinary Literacy Specialists, SREB staff, Administrators, Teachers, Librarians, Parents, a ALSDE consultant, the University of Alabama In-Service Education Center staff, local business members and a district Superintendent (or designee). The AC's purpose is to confirm fidelity of implementation, monitor the grant for ongoing modification/ improvement, oversee the budget (along with district established procedures), evaluate progress, develop professional development activities and establish any new policies/ procedures. The Advisory Council will annually verify that the necessary financial resources are provided to assure the goals and objectives of each year are met. TCS will be the fiscal agent, and will follow standard accounting procedures for contracts, independent yearly audits, travel, and procurement. The Advisory Council will ensure all materials will be procured using the established purchase order process, bid procedures, and accounting practices. The Project Director's position will require a minimum of a master's degree or above and should have a minimum of 5 years' experience within educational settings with a minimum of 5 years managing federal level grants. TCS currently has Dr. Andrew Maxey in place as a Project Director who is currently the Director of Strategic Initiatives and works closely with other district Federal Grants programs. The Project Director will also facilitate participant recruitment and hire the Interdisciplinary Literacy Specialists position. The Interdisciplinary Literacy Specialists will have demonstrated leadership excellence as a literacy teacher, served as a mentor to other teachers, have experience in providing professional development opportunities to colleagues and be available for all Advisory Council meetings. The program staffing chart with qualifications and job descriptions can be found on **page 151-152 in the Appendix**. The management/professional development timeline

sketching the activities\services outlined in the proposal with clearly defined responsibilities and milestones for accomplishing project tasks can be found in the **appendix on pages 132-150.**

(2) Procedures for ensuring feedback and continuous improvement of the proposed project Management plan reporting and evaluation milestones provide annual checks on the quality of project services and progress toward attaining project goals, objectives, and outcomes. Surveys of students, teachers, and librarians involved in project instruction will provide evidence of the quality of implemented activities. Ongoing data collection and analysis ensure data-driven decision-making and continuous project improvement based on data analysis. Frequent meetings between project participants provide a mechanism to ensure high-quality services and project progress. Teachers and librarians involved in literacy-reform implementation will meet at monthly PD sessions. Project INNOVATE procedures and organizational structure will provide ongoing feedback to the Advisory Council and will ensure that continuous improvement will occur. The organizational structure (see graphic below) establishes a process for continual feedback from participants and staff to the Advisory Council that then recommends continual modifications and improvements. Additional input from formative assessments, status reports, partner updates, and APR will give the Advisory Council input, resulting in continuous improvement.



3) Time commitments of project director\key personnel are appropriate to meet objectives.

The full-time project director’s position will be adequate to cover the following responsibilities required of the Innovative Approaches to Literacy (IAL) program: Direct all program activities and services; interview and recommends staff; supervises and evaluate project staff at all levels; initiate all purchase orders; initiate all contracts; coordinates all professional development activities; work with the district fiscal officer on all expenditures for salaries, materials, supplies and monitor of budget; tracks participant professional development hours; prepare site location for all seminars; organize all professional development opportunities; attend all Advisory Council meetings; prepare agenda and notifies all members of Advisory Council of monthly meetings; collect data for evaluators; meet with schools’ point of contact on a monthly basis to review INNOVATE data. The Interdisciplinary Literacy Specialists/School Leaders will be full-time personnel with a literacy background. Partners have agreed that bi-monthly Advisory Council meetings will be necessary to fulfill the project's obligation and meet targeted benchmarks.

(e) Quality of Project Evaluation

(1) Methods of evaluation are appropriate to the context within which the project operates

National Evaluation Group, LLC (NEG) will be on board with the *INNOVATE* staff from day one through the final evaluation report. The use of an external evaluator will improve the fidelity of implementation and the ability to maintain objectivity in the analysis of the project data. NEG staff will participate as active members of the Advisory Council (AC) that will be in place to ensure all goals and objectives are met. (See **Evaluator Resumes, Appendix, p. 160-171**)

When will the information be available? Formative reports will be developed monthly to allow timely reviews of progress monitoring. They will consist of quantitative and qualitative data such as pre-test data, survey data, PD evaluations, financial data, and an overall implementation status report. Annual summative reports and APR will be submitted by the required dates to the AC and

the U.S. Department of Education. **How will data be analyzed?** *Qualitative data*, such as responses to evaluation forms/feedback from peer reviews, will be summarized and presented in a brief narrative. Responses to surveys will be summed across participants per training session and across years of Interrupted Time Series Analysis (ITS) design that will produce evidence about *INNOVATE* 's project effectiveness. The ITS design will allow the evaluative review of program impacts by examining whether the treatment group deviates from its "baseline trend" more significantly than the comparison group. **Accountability:** An ongoing utilization-focused evaluation (Patton, 2002) will provide the AC and key personnel with the information they need in a continuous, timely manner to make real-time decisions about the varying grant-related activities. This formative evaluation approach provides users with summary data on implementation fidelity and preliminary outcomes so that mid-course revisions can be made. Specifically, the Evaluators will review meeting minutes, PD training evaluations, academic growth rates, achievement scores, agendas and sign-in sheets for student/adult training, and logs of literacy activities. The Evaluators will conduct bi-monthly conferences with the AC to monitor progress and denote successes for future sustainability and replication. Quantitative and qualitative performance measures and evaluations will determine whether the project is implemented as intended and has yielded positive results. Evaluation will provide feedback to project staff to maintain focus as the grant intended. The quantitative and qualitative evaluation data will be collected/reported to the Advisory Council's ongoing meetings.

Quantitative Data:	1) Student state assessment test data
	2) Data from Better Practice Visits (BPV) walkthrough instrument
	3) GPRA data
	4) Interdisciplinary literacy and engagement activities presented to teachers

	5) Time and effort logs of PD and School Community Coordinators
	6) Alabama Reading Initiative progress data
	7) Number of School Literacy Plans created with Interdisciplinary Integration
	8) Number of Student books distributed
	9) Aimsweb Plus Assessment Data

Qualitative: Data	1) Student Surveys on Engagement Activities
	2) Teacher Surveys of professional development and student
	3) Teacher Change in Student Literacy Engagement Surveys
	4) Parent satisfaction survey with early childhood and engagement activities

(2) Methods of evaluation provide for examining the effectiveness of implementation strategies

The summative evaluation will be consistent with the standards of the Coalition for Evidence-Based Policy (“Key items to get right in conducting a controlled trial in education,” Dec. 2005).

Formative evaluation will assess implementation fidelity as well as teachers’ attitudes about the project and the Advisory Council’s experiences in implementing the project.

Goals	Objectives	Outcomes	Benchmarks
1. To develop and implement a Literacy Plan within each school of the district	1.1) Schools will receive Literacy training 1.2) Schools will create STEM literacy plan 1.3) Schools implement RTI model	By August each grant year, 100% of schools will develop K-12 STEM integrated Literacy plan based up on RTI	- TCS\SREB trainings -District plans -Tier 2 & 3 adjustments -Coaching sessions
2. To improve school readi-	2.1) The % of 4 th graders participating in the project	In each of the grant a 5% increase over	-State Assessment test results - Aimsweb results

ness and success from birth through grade 12	<p>who demonstrated individual student growth over the past year on State reading assessments (GPRA #1)</p> <p>2.2) The % of 8th graders participating in the project who demonstrated individual student growth over the past year on State reading assessments (GPRA # 2)</p>	baseline on State Assessments and Aimsweb tests	<ul style="list-style-type: none"> -Library extended hours -Family Literacy sessions -Summer Literacy camps -Action Plans
3. To implement a data-based decision-making process -RTI	<p>3.1) % of schools whose book-to-student ratios increase</p> <p>3.2) % of children who receive at least one free, grade appropriate book</p> <p>3.3) % of high-school students who are college and career ready</p>	By August each year of grant, 100% of students will obtain access to online books (API) and receive personal books to assist in becoming college and career ready.	<ul style="list-style-type: none"> -Library extended hours -Family Literacy sessions -RTI tier remediation -Online book access -Book give-away
4. To implement high-quality school library and interdisciplinary projects	4.1) 100% of schools will collaborate between library Interdisciplinary Literacy Specialists and school personnel to facilitate subject-specific pedagogy differentiated based on student's developmental level	By August of each grant year, a minimum of 85% of librarians will attend 75% of LOCAL STEM focused literacy trainings pertaining to pedagogy in	<ul style="list-style-type: none"> - Training on best practice related to collaborative planning and teaching -UDL trainings and sample lesson plans Co-planning training specific for librarians

	4.2) 100% of schools will technology, and other educational\engagement strategies	sign for learning, technology, and other educational literacy strategies	-Literacy Team Meetings -Summer Literacy Conferences -Technology Literacy implementation
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The quantitative and qualitative evaluation data will be collected and reported to the Advisory Council continuously. The external evaluator, National Evaluation Group, LLC (NEG), will be on board with the INNOVATE staff from the day of the award through the final evaluation report. Mr. Mills has experience in the evaluation of Federal projects requiring GPRA reports.

(i) Data to be collected -	(ii) Data collection timeline	(iii) methods used to collect and (iv) Instruments
Percentage of fourth graders who demonstrated individual student growth over the past year on State reading or language arts assessments (GPRA)	Baseline Fall 2023 -follow up each Sept.	State Achievement Test Student Scores
Percentage of eighth graders who demonstrated individual student over the past year on State reading or language arts assessments (GPRA)	Baseline Fall 2023 -follow up each Sept.	State Achievement Test Student Scores
Percentage of schools whose book-to-student ratios increase (GPRA)	Baseline Fall 2023 -follow up each Sept.	Online Data collection through INNOVATE portal
Percentage of children who receive at least one free, grade\language appropriate book (GPRA)	Baseline Fall 2023 -follow up each Sept.	Online Data collection through INNOVATE portal
Percentage of schools which provide pedagogy supported by universal design for learning, differentiation, and engagement.	Baseline Fall 2023 -follow up each Sept.	Online Data collection of lesson plans through INNOVATE portal

Other Attachment File(s)

* Mandatory Other Attachment Filename:

To add more "Other Attachment" attachments, please use the attachment buttons below.

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NCES Indicator



Tuscaloosa City Schools are an eligible urban LEA with a locale code of 12. Project DECODE will service 20 schools with 10, 538 students within the area.





District Directory Information
(2020-2021 school year)

[Search Results](#)
[Modify Search](#)
[Data Notes/Grant IDs](#)
[Help](#)

District Name: Tuscaloosa City schools for this district	NCES District ID: 0103360	State District ID: AL-200														
Mailing Address: <div style="background-color: black; width: 100%; height: 30px;"></div>	Physical Address:  1210 21st Ave Tuscaloosa, AL 35401-2934	Phone: <div style="background-color: black; width: 100%; height: 30px;"></div>														
Type: Local school district	Status: Open	Total Schools: 20														
Supervisory Union #: N/A	Grade Span: (grades PK - 12) <table border="1" style="border-collapse: collapse; text-align: center; width: 100%;"> <tr> <td style="padding: 2px;">PK</td> <td style="padding: 2px;">KG</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">6</td> <td style="padding: 2px;">7</td> <td style="padding: 2px;">8</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">10</td> <td style="padding: 2px;">11</td> <td style="padding: 2px;">12</td> </tr> </table>		PK	KG	1	2	3	4	5	6	7	8	9	10	11	12
PK	KG	1	2	3	4	5	6	7	8	9	10	11	12			
Website: http://www.tuscaloosacityschools.com	District Demographics:  School District Demographic Dashboard															

District Details (2019-2020 school year; Fiscal data from 2017-2018)

[Characteristics](#)
[Staff](#)
[Fiscal](#)
[Show All](#)

County: Tuscaloosa County	County ID: 01125								
Locale: City: Midsize (12) CSA/CBSA: 46220	<table border="1" style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 2px;">Total Students:</td> <td style="padding: 2px; text-align: right;">10,910</td> </tr> <tr> <td style="padding: 2px;">Classroom Teachers (FTE):</td> <td style="padding: 2px; text-align: right;">676.43</td> </tr> <tr> <td style="padding: 2px;">Student/Teacher Ratio:</td> <td style="padding: 2px; text-align: right;">16.13</td> </tr> <tr> <td style="padding: 2px;">Students with IEPs:</td> <td style="padding: 2px; text-align: right;">1,385</td> </tr> </table>	Total Students:	10,910	Classroom Teachers (FTE):	676.43	Student/Teacher Ratio:	16.13	Students with IEPs:	1,385
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Students with IEPs:	1,385								

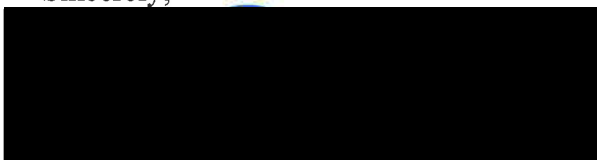
August 7, 2021

To Whom It May Concern:

The purpose of The University of Alabama/University of West Alabama In-Service Education Center is to provide professional learning and growth opportunities to the K-12 educators in the designated public school districts within its geographic region. The Center serves the teachers, administrators, counselors, and librarians of twelve (12) school districts within nine (9) area counties.

If the proposal that you are submitting is selected for funding, it is my intent to collaborate as detailed in the Project Description. We will support efforts with intentional planning, based upon data, to support teachers in their literacy professional learning and classroom application.

Sincerely,



Holly G. Morgan, Ph.D.

Director

UA/UWA Regional In-Service Center

College of Education

The University of Alabama



Southern Regional Education Board
 592 10th St. N.W.
 Atlanta, GA 30318
 Phone: [REDACTED]

DATE: 5-2-23

TO: Whom It May Concern

FROM: Scott Warren
 Director of Making Schools Work

REF: Tuscaloosa Elementary Literacy Initiative

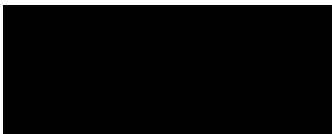
The Southern Regional Education Board (SREB) welcomes the opportunity to be a partner in the Tuscaloosa Elementary Literacy Initiative. As Alabama is a founding member of SREB and we have a long-standing relationship with the district, this effort is one of great interest.

SREB will bring its vast experience in helping schools and districts create and implement literacy initiatives and work with the district to develop a tailored plan of support for the effort. SREB support may include, but is not limited to similar supports provided across the nation including:

- Conducting a review of school and classroom literacy efforts;
- Providing ongoing face-to-face and virtual professional learning for teachers to support the implementation of best-literacy practices;
- Providing literacy-based coaching to teachers in the classroom;
- Conducting implementation monitoring checks that include both classroom observations and the use of surveys;
- Creating initiatives to support literacy development birth to kindergarten to jump-start literacy development;
- Supporting school and district leaders to help teachers create a literacy focus across the school; and
- Coaching leaders to employ innovative approaches to grouping, looping, teaming and other practices that support literacy efforts.

SREB looks forward to the opportunity to work with the district and other partners on this important effort.

Thank You,



1 HB388
2 200613-3
3 By Representatives Collins and Baker
4 RFD: Education Policy
5 First Read: 09-APR-19

1
2 ENROLLED, An Act,

3 Relating to public education; to establish the
4 Alabama Literacy Act; to implement steps to improve the
5 reading proficiency of public school kindergarten to third
6 grade students and ensure that those students are able to read
7 at or above grade level by the end of the third grade by
8 monitoring the progression of each student from one grade to
9 another, in part, by his or her proficiency in reading.

10 BE IT ENACTED BY THE LEGISLATURE OF ALABAMA:

11 Section 1. This act shall be known and may be cited
12 as the Alabama Literacy Act.

13 Section 2. For the purposes of this act, the
14 following terms shall have the following meanings:

15 (1) ALPHABETIC PRINCIPLE. The ability to accurately
16 apply knowledge of the relationship between letters and sounds
17 during the acts of encoding and decoding.

18 (2) COMPREHENSION. The ability to read and process
19 text and understand its meaning.

20 (3) DECODING. The act of applying knowledge of the
21 alphabetic principle to correctly pronounce written words.

22 (4) DYSLEXIA. A specific learning challenge that is
23 neurological in origin. It is characterized by difficulties
24 with accurate or fluent, or both, word recognition and by poor
25 spelling and decoding abilities, which typically result from a

1 deficit in the phonological component of language that is
2 often unexpected in relation to other cognitive abilities and
3 the provision of effective classroom instruction.

4 (5) ENCODING. The act and process of using knowledge
5 of the relationships between sounds and letters to spell and
6 write words.

7 (6) FLUENCY. The ability to read with accuracy,
8 appropriate rate, and proper expression.

9 (7) PHONEMIC AWARENESS. The ability to hear,
10 identify, and manipulate individual sounds. Phonemic awareness
11 is an auditory activity.

12 (8) PHONICS. The relationships between the letters
13 of written language and the individual sounds of spoken
14 language including syllable types, morphology of Greek and
15 Latin roots, and multisyllabic words.

16 (9) PHONOLOGICAL AWARENESS. The general
17 understanding of the sound structure of words and sentences.

18 (10) VOCABULARY. The body of written or oral
19 language known to an individual.

20 Section 3. (a) The State Superintendent of Education
21 shall convene a standing task force, within three months after
22 the effective date of this act, to provide recommendations for
23 comprehensive core reading and reading intervention programs,
24 a state continuum of teacher development for approved science
25 of reading pursuant to subsection (e) of Section 6, and an

1 annual list of vetted and approved assessments which are valid
 2 and reliable reading screening, formative, and diagnostic
 3 assessment systems for selection and use by local education
 4 agencies. The task force shall meet in regular session at
 5 least twice a year. All appointing authorities shall
 6 coordinate their appointments so that diversity of gender,
 7 race, and geographical areas is reflective of the makeup of
 8 this state. The membership of the task force shall include all
 9 of the following appointees, each of whom shall have at least
 10 three years of experience with scientifically based reading
 11 instruction:

12 (1) Two public K-12 teachers appointed by the
 13 Executive Director of the Alabama Education Association.

14 (2) One public K-12 special education teacher
 15 appointed by the State Superintendent of Education.

16 (3) ~~One~~ Three Certified Academic Dyslexia Therapist,
 17 who has been so certified for a minimum of three years,
 18 appointed by the Alabama branch of the International Dyslexia
 19 Association.

20 (4) Two public school principals appointed by the
 21 Executive Director of the Council for Leaders in Alabama
 22 Schools.

23 (5) One local superintendent of education appointed
 24 by the Executive Director of the School Superintendents of
 25 Alabama.

1 (6) One local board of education member appointed by
2 the Alabama Association of School Boards.

3 (7) One Regional Education Lab member appointed by
4 the State Superintendent of Education.

5 (8) One early childhood educator appointed by the
6 Secretary of the Alabama Department of Early Childhood
7 Education.

8 (9) One dean of a college of education appointed by
9 the Alabama Commission on Higher Education.

10 (b) Each approved assessment system shall do all of
11 the following:

12 (1) Provide screening and diagnostic capabilities
13 for monitoring student progress.

14 (2) Measure, at a minimum, phonological awareness,
15 the alphabetic principle, decoding, encoding, accuracy,
16 vocabulary, and comprehension.

17 (3) Identify students who have a reading deficiency,
18 including identifying students with characteristics of
19 dyslexia.

20 (c) In determining which assessment systems to
21 approve for use by local education agencies, the task force,
22 at a minimum, shall also consider all of the following
23 factors:

1 (1) The time required to conduct the assessments,
2 with the intention of minimizing the impact on instructional
3 time.

4 (2) The level of integration of assessment results
5 with instructional support for teachers and students.

6 (3) The timeliness in reporting assessment results
7 to teachers, administrators, and parents.

8 Section 4. (a) Funds appropriated by the Legislature
9 in support of the Alabama Reading Initiative shall be
10 allocated to support the following:

11 (1) Local education agencies to support local
12 reading specialists.

13 (2) The Alabama Summer Achievement Program.

14 (3) Regional literacy specialists.

15 (4) Preservice and inservice teacher professional
16 learning activities for elementary school teachers in reading.

17 (5) Curricula to support student interventions.

18 (6) State administration.

19 (b) Funds dedicated to the Alabama Reading
20 Initiative shall be expended on local and regional reading
21 specialists, professional learning activities, and
22 administrative activities that support all of the following
23 activities for kindergarten through third grade students in
24 public K-12 schools; continued funding shall be contingent on

1 measurable performance growth, as determined by the task force
2 established under subsection (a) of Section 3:

3 (1) Administration and analysis of reading
4 screening, formative, and diagnostic assessments to guide
5 instruction.

6 (2) Scientifically based reading instruction,
7 multisensory language instruction, including oral language
8 development, phonological awareness, phonics instruction that
9 includes decoding and encoding, fluency, writing, vocabulary,
10 and comprehension, and the Alabama course of study, English
11 Language Arts.

12 (3) Explicit and systematic instruction with more
13 detailed explanations, more extensive opportunities for guided
14 practice, and more opportunities for error correction and
15 feedback.

16 (4) Differentiated reading instruction and intensive
17 intervention based on student need, including students
18 exhibiting the characteristics of dyslexia.

19 (c) Alabama Reading Initiative regional literacy
20 specialists shall provide support to local education agencies
21 through a gradual release model, whereby the regional reading
22 specialist shall support a struggling school until that school
23 has improved core instruction to the extent that it is no
24 longer among the lowest five percent of elementary schools in
25 reading proficiency, as determined by annual results of the

1 state summative assessment for federal and statewide
2 accountability.

3 (1) Regional literacy specialists shall provide
4 intensive support for elementary schools that are among the
5 lowest performing five percent of elementary schools. Each
6 school among the lowest five percent performing elementary
7 schools shall be assigned a regional literacy specialist who
8 shall serve as a resource for professional development
9 throughout the school to improve literacy instruction and
10 student achievement. A regional literacy specialist who is
11 assigned to a school shall primarily serve only that school.

12 (2) Elementary schools that are not among the lowest
13 five percent performing schools shall receive limited literacy
14 support from an Alabama Reading Initiative regional literacy
15 specialist, who shall be assigned to multiple schools. All
16 other regional literacy specialists shall be assigned to serve
17 multiple elementary schools and shall provide ongoing
18 professional development for teachers in analyzing students'
19 reading data to impact instruction, administering and
20 analyzing instructional assessments, differentiating
21 instruction and intensive intervention, and monitoring the
22 reading progress of all students a minimum of three times per
23 year, and make instruction adjustment recommendations
24 according to student specific need. Distance and need shall be
25 considered by local superintendents of education when

1 selecting the schools where a regional literacy specialist
2 shall serve. There shall be two levels of limited literacy
3 support provided by a regional literacy specialist. The local
4 superintendent of education of a local education agency
5 subject to this subdivision shall determine the level of
6 limited support that each regional literacy specialist shall
7 provide.

8 a. Limited support 1. An Alabama Reading Initiative
9 regional literacy specialist shall make monthly onsite visits
10 to the school and shall monitor the reading progress of all
11 students a minimum of three times per year and adjust
12 instruction according to student specific need.

13 b. Limited support 2. An Alabama Reading Initiative
14 regional literacy specialist shall make quarterly onsite
15 visits to the school and shall monitor the reading progress of
16 all students a minimum of three times per year and make
17 instruction adjustment recommendations according to student
18 specific need.

19 (3) An Alabama Reading Initiative regional literacy
20 specialist shall have all of the following minimum
21 qualifications:

22 a. The required Alabama Professional Educator
23 Certificate.

24 b. A bachelor's degree and advanced coursework or
25 professional development in the science of reading,

1 multisensory language instruction, such as Language Essentials
2 for Teachers of Reading and Spelling, or a comparable
3 alternative training approved by the State Board of Education.

4 c. A minimum of four years of experience as a
5 successful elementary or literacy teacher.

6 d. A knowledge of scientifically based reading
7 research, special expertise in quality reading instruction and
8 intervention, dyslexia specific interventions, and data
9 analysis.

10 e. A strong knowledge base in the science of
11 learning to read and the science of early childhood education.

12 f. Excellent communication skills with outstanding
13 presentation, interpersonal, and time management skills.

14 (d) An Alabama Reading Initiative local reading
15 specialist shall be assigned to provide intensive, targeted
16 professional development for elementary school teachers at one
17 school.

18 (1) An Alabama Reading Initiative local reading
19 specialist shall have all of the following minimum
20 qualifications:

21 a. The required Alabama Professional Educator
22 Certificate.

23 b. A bachelor's degree and advanced coursework or
24 professional development in the science of reading, such as

1 multisensory language instruction, or comparable alternative
2 training approved by the State Board of Education.

3 c. A minimum of two years of experience as a
4 successful elementary or literacy teacher.

5 d. A knowledge of scientifically based reading
6 research, special expertise in quality reading instruction and
7 intervention, dyslexia specific interventions, and data
8 analysis.

9 e. A strong knowledge base in the science of
10 learning to read and the science of early childhood education.

11 f. Excellent communication skills with outstanding
12 presentation, interpersonal, and time management skills.

13 (2) The duties and responsibilities of an Alabama
14 Reading Initiative local reading specialist shall include all
15 of the following:

16 a. Collaborating with the principal to create a
17 strategic plan for coaching.

18 b. Facilitating schoolwide professional development
19 and study groups.

20 c. Modeling effective reading instructional
21 strategies for teachers.

22 d. Coaching and mentoring teachers daily.

23 e. Facilitating data analysis discussions and
24 support teachers by using data to differentiate instruction
25 according to the needs of students.

2021 SAIPE Data for Tuscaloosa City Schools



// Census.gov / Our Surveys & Programs / Small Area Income and Poverty Estimates (SAIPE) Program / Data / SAIPE Data Tools / SAIPE Interactive Tool

Small Area Income and Poverty Estimates (SAIPE)

Filter By:

State: Alabama

County

School District

View By:

States

Counties

School Districts

Poverty Rates or Income:

All Ages

Under Age 18

Ages 5 to 17 in Families

Under Age 5

Median Household Income

2021

Elementary/Unified

Secondary/Unified

Ages 5 to 17 in Families in Poverty

(1999 to 2021)

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates.

Year	ID	Name	Grades	Total Population	Relevant Ages 5 to 17	Relevant Ages 5 to 17 in Families in Poverty	Relevant Ages 5 to 17 Poverty Ratio	Reference Map
2021	0103360	Tuscaloosa City School District	PK-12	98,821	12,034	2,756	22.9	Map

2756 (Relevant Ages 5-17 In Families In Poverty) / 12034 (Relevant Ages 5-17) = **22.9%** of students in poverty

Opportunity Zone Census Tract in Service Area

Name	County	Median Household Income	Below Poverty Line	Median Home Value	Edu High School	Median Age
All of Alabama	n/a	\$52K	15%	\$154K	87%	39
Alabama OZ Average	n/a	\$34K	34%	\$137K	85%	30
1125011600	Tuscaloosa	\$28K	33%	\$124K	74%	32
1125011701	Tuscaloosa	\$26K	36%	\$90K	76%	25
1125011800	Tuscaloosa	\$24K	40%	\$72K	81%	43
1125012100	Tuscaloosa	\$44K	24%	\$154K	94%	27
1125012303	Tuscaloosa	\$57K	27%	\$162K	85%	32
1125012405	Tuscaloosa	\$34K	27%	\$132K	94%	31
1125012600	Tuscaloosa	\$25K	42%	\$267K	92%	23
1125012800	Tuscaloosa	\$33K	42%	\$97K	83%	32

The Institute of Education Sciences (IES) publishes practice guides in education to bring the best available evidence and expertise to bear on the types of systemic challenges that cannot currently be addressed by single interventions or programs. Authors of practice guides seldom conduct the types of systematic literature searches that are the backbone of a meta-analysis, although they take advantage of such work when it is already published. Instead, authors use their expertise to identify the most important research with respect to their recommendations, augmented by a search of recent publications to ensure that research citations are up-to-date.

Unique to IES-sponsored practice guides is that they are subjected to rigorous external peer review through the same office that is responsible for independent review of other IES publications. A critical task for peer reviewers of a practice guide is to determine whether the evidence cited in support of particular recommendations is up-to-date and that studies of similar or better quality that point in a different direction have not been ignored. Because practice guides depend on the expertise of their authors and their group decision-making, the content of a practice guide is not and should not be viewed as a set of recommendations that in every case depends on and flows inevitably from scientific research.

The goal of this practice guide is to formulate specific and coherent evidence-based recommendations for use by educators addressing the challenge of reducing the number of children who fail to learn how to read proficiently by using “response to intervention” as a means of both preventing reading difficulty and identifying students who need more help. This is called Response to Intervention (RtI). The guide provides practical, clear information on critical RtI topics and is based on the best available evidence as judged by the panel. Recommendations in this guide should not be construed to imply that no further research is warranted on the effectiveness of particular RtI strategies.

Assisting Students Struggling with Reading: Response to Intervention and Multi-Tier Intervention in the Primary Grades

February 2009

Panel

Russell Gersten (Chair)
INSTRUCTIONAL RESEARCH GROUP

Donald Compton
VANDERBILT UNIVERSITY

Carol M. Connor
FLORIDA STATE UNIVERSITY

Joseph Dimino
INSTRUCTIONAL RESEARCH GROUP

Lana Santoro
INSTRUCTIONAL RESEARCH GROUP

Sylvia Linan-Thompson
UNIVERSITY OF TEXAS—AUSTIN

W. David Tilly
HEARTLAND AREA EDUCATION AGENCY

Staff

Rebecca Newman-Gonchar
INSTRUCTIONAL RESEARCH GROUP

Kristin Hallgren
MATHEMATICA POLICY RESEARCH

This report was prepared for the National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences under Contract ED-07-CO-0062 by the What Works Clearinghouse, which is operated by Mathematica Policy Research, Inc.

Disclaimer

The opinions and positions expressed in this practice guide are the authors' and do not necessarily represent the opinions and positions of the Institute of Education Sciences or the U.S. Department of Education. This practice guide should be reviewed and applied according to the specific needs of the educators and education agency using it, and with full realization that it represents the judgments of the review panel regarding what constitutes sensible practice, based on the research that was available at the time of publication. This practice guide should be used as a tool to assist in decision-making rather than as a "cookbook." Any references within the document to specific education products are illustrative and do not imply endorsement of these products to the exclusion of other products that are not referenced.

U.S. Department of Education

Arne Duncan
Secretary

Institute of Education Sciences

Sue Betka
Acting Director

National Center for Education Evaluation and Regional Assistance

Phoebe Cottingham
Commissioner

February 2009

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Assisting Students Struggling with Reading: Response to Intervention and Multi-Tier Intervention in the Primary Grades

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Introduction

In the primary grades students with reading difficulties may need intervention to prevent future reading failure. This guide offers specific recommendations to help educators identify students in need of intervention and implement evidence-based interventions to promote their reading achievement. It also describes how to carry out each recommendation, including how to address potential roadblocks in implementing them.

We, the authors, are a small group with expertise in various dimensions of this topic. Several of us are also experts in research methodology. The recommendations in this guide reflect not only our expertise and experience but the findings of rigorous studies of interventions to promote reading achievement.

Each recommendation received a rating that describes the strength of the research evidence that has shown its effectiveness. These ratings—“strong,” “moderate,” or “low”—are defined as:

Strong refers to consistent and generalizable evidence that a program causes better outcomes.¹

1. Following WWC guidelines, we consider a positive, statistically significant effect, or an effect size greater than 0.25, as an indicator of positive effects.

Moderate refers to evidence from studies that allow strong causal conclusions but cannot be generalized with assurance to the population on which a recommendation is focused (perhaps because the findings have not been widely replicated) or to evidence from studies that are generalizable but have more causal ambiguity than offered by experimental designs (such as statistical models of correlational data or group comparison designs for which equivalence of the groups at pretest is uncertain).

Low refers to expert opinion based on reasonable extrapolations from research and theory on other topics and evidence from studies that do not meet the standards for moderate or strong evidence.

Table 1 details the criteria used to determine the level of evidence for each recommendation. For questions about what works best, high-quality experimental and quasi-experimental studies, such as those meeting the criteria of the What Works Clearinghouse (www.whatworks.ed.gov), have a privileged position. The evidence considered in developing and rating these recommendations included experimental research on providing differentiated instruction in a general education classroom and rigorous evaluations of intensive reading interventions. We also examined studies on the technical adequacy of batteries of screening measures.

The What Works Clearinghouse standards and their relevance to this guide

The panel relied on WWC Evidence Standards to assess the quality of evidence supporting educational programs and practices and apply a level of evidence rating to each recommendation. The WWC addresses evidence for the causal validity of instructional programs and practices using WWC Standards. Information about these standards is available at <http://ies.ed.gov/ncee/wwc/references/standards/>. The technical quality of each study is rated and placed into one of three categories:

- *Meets Evidence Standards* for randomized controlled trials and regression discontinuity studies that provide the strongest evidence of causal validity.
- *Meets Evidence Standards with Reservations* for all quasi-experimental studies with no design flaws and randomized controlled trials that have problems with randomization, attrition, or disruption.
- *Does Not Meet Evidence Screens* for studies that do not provide strong evidence of causal validity.

Based on the recommendations and suggestions for their implementation, appendix D presents more information on the research evidence supporting the recommendations.

The panel would like to thank Kelly Haymond for her contributions to the analysis, Mary Jo Taylor for her expert editorial assistance, the WWC reviewers for their contribution to the project, and Jo Ellen Kerr for her support of the intricate logistics of the project. We also would like to thank Scott Cody for his oversight of the analyses and the overall progress of the practice guide.

Dr. Russell Gersten
 Dr. Donald Compton
 Dr. Carol M. Connor
 Dr. Joseph Dimino
 Dr. Lana Santoro
 Dr. Sylvia Linan-Thompson
 Dr. W. David Tilly

Table 1. Institute of Education Sciences levels of evidence for practice guides

Strong	<p>In general, characterization of the evidence for a recommendation as strong requires both studies with high internal validity (i.e., studies whose designs can support causal conclusions) and studies with high external validity (i.e., studies that in total include enough of the range of participants and settings on which the recommendation is focused to support the conclusion that the results can be generalized to those participants and settings). Strong evidence for this practice guide is operationalized as:</p> <ul style="list-style-type: none"> • A systematic review of research that generally meets the What Works Clearinghouse (WWC) standards (see http://ies.ed.gov/ncee/wwc/) and supports the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • Several well designed, randomized controlled trials or well designed quasi-experiments that generally meet WWC standards and support the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • One large, well designed, randomized controlled, multisite trial that meets WWC standards and supports the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • For assessments, evidence of reliability and validity that meets the Standards for Educational and Psychological Testing.^a
Moderate	<p>In general, characterization of the evidence for a recommendation as moderate requires studies with high internal validity but moderate external validity, or studies with high external validity but moderate internal validity. In other words, moderate evidence is derived from studies that support strong causal conclusions, but where generalization is uncertain, or studies that support the generality of a relationship, but where the causality is uncertain. Moderate evidence for this practice guide is operationalized as:</p> <ul style="list-style-type: none"> • Experiments or quasi-experiments generally meeting WWC standards and supporting the effectiveness of a program, practice, or approach with small sample sizes and/or other conditions of implementation or analysis that limit generalizability and no contrary evidence; OR • Comparison group studies that do not demonstrate equivalence of groups at pretest and therefore do not meet WWC standards but that (a) consistently show enhanced outcomes for participants experiencing a particular program, practice, or approach and (b) have no major flaws related to internal validity other than lack of demonstrated equivalence at pretest (e.g., only one teacher or one class per condition, unequal amounts of instructional time, highly biased outcome measures); OR • Correlational research with strong statistical controls for selection bias and for discerning influence of endogenous factors and no contrary evidence; OR • For assessments, evidence of reliability that meets the Standards for Educational and Psychological Testing^b but with evidence of validity from samples not adequately representative of the population on which the recommendation is focused.
Low	<p>In general, characterization of the evidence for a recommendation as low means that the recommendation is based on expert opinion derived from strong findings or theories in related areas or expert opinion buttressed by direct evidence that does not rise to the moderate or strong levels. Low evidence is operationalized as evidence not meeting the standards for the moderate or high levels.</p>

a. American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999).

b. Ibid.

Assisting Students Struggling with Reading: Response to Intervention and Multi-Tier Intervention for Reading in the Primary Grades

Overview

Response to Intervention (RtI) is a comprehensive early detection and prevention strategy that identifies struggling students and assists them before they fall behind. RtI systems combine universal screening and high-quality instruction for all students with interventions targeted at struggling students.

RtI strategies are used in both reading and math instruction. For reading instruction in the primary grades (K–2), schools screen students at least once a year to identify students at risk for future reading failure.² Students whose screening scores indicate potential difficulties with learning to read are provided with more intensive reading interventions. Student responses to the interventions are then measured to determine whether they have made adequate progress and either (1) no longer need the intervention, (2) continue to need some intervention, or (3) need even more intensive intervention.

In RtI, the levels of interventions are conventionally referred to as “tiers.” RtI is typically thought of as having three tiers, with the first tier encompassing general classroom instruction.³ Some states and school districts, however, have implemented multi-tier intervention systems with more than three tiers. Within a three-tier RtI model, each tier is defined by specific characteristics:

- Tier 1 instruction is generally defined as reading instruction provided to all students in a class. Beyond this general definition, there is no clear consensus on the meaning of the term tier 1. Instead, it is variously referred to as “evidence-based reading instruction,”⁴ “high quality reading instruction,”⁵ or “an instructional program...with balanced, explicit, and systematic reading instruction that fosters both code-based and text-based strategies for word identification and comprehension.”⁶
- Tier 2 interventions are provided only to students who demonstrate problems based on screening measures or weak progress from regular classroom instruction. In addition to general classroom instruction, tier 2 students receive supplemental, small group reading instruction aimed at building foundational reading skills.
- Tier 3 interventions are provided to students who do not progress after a reasonable amount of time with the tier 2 intervention and require more intensive assistance. Tier 3 (or, in districts with more than three tiers, tiers 3 and above) usually entails one-on-one tutoring with a mix of instructional interventions. Ongoing analysis of student performance data is critical in tier 3. Systematically collected data are used to identify successes and failures in instruction for individual students. If students still experience difficulty after receiving intensive services, they are evaluated for possible special education services.

Though a relatively new concept, RtI and multi-tier interventions are becoming increasingly common. This is attributed in

2. Johnson, Jenkins, Petscher, and Catts (in press, pp. 3–4).

3. Fuchs, Fuchs, and Vaughn (2008) make the case for a three-tier RtI model.

4. Vaughn and Fuchs (2006).

5. Division for Learning Disabilities (2007).

6. Vellutino, Scanlon, Small, Fanuele, and Sweeney (2007).

part to the 2004 reauthorization of the Individuals with Disabilities Education Act (IDEA), which encourages states to use RtI to help prevent reading difficulties and to identify students with learning disabilities.

RtI's inclusion in the 2004 reauthorization can be traced to two key reports released in 2002. First, the *President's Commission on Excellence in Special Education* (2002) report revealed that special education put too much emphasis on paperwork and too little on instruction.⁷ It recommended that educators put more energy into monitoring student progress in academic areas and less into monitoring paperwork and compliance with regulations.

Second, a 2002 report from the National Academy of Sciences examined the overrepresentation of students from minority subgroups in special education.⁸ This report proposed ideas for making the referral process for learning disabilities more meaningful to classroom teachers, arguing that special education “eligibility ensue when a student exhibits large differences from typical levels of performance in...[reading] and with evidence of insufficient response to high-quality interventions...in school settings.”⁹ This encouraged schools to provide services to students struggling in reading within general education in the early grades before considering special education. Special education would be considered only for students who failed to respond to evidence-based interventions or interventions using what the field considers best practice.

There are two potential advantages of RtI and multi-tier intervention. Struggling students are provided with help in learning how to read early in their school careers. In the past many students were not provided with additional assistance in reading

until they were officially diagnosed with a specific learning disability, often not until grade 2 or 3.¹⁰ This was the practice even though longitudinal research consistently showed that students who were weak readers at the early elementary grades tended to stay weak readers in the higher grades.¹¹

RtI also urges schools to use evidence-based practices in all tiers and to provide intensive services only to students who fail to benefit from a well designed, evidence-based intervention. This helps to accurately determine which students possess learning disabilities in reading since only students who do not respond to high-quality reading instruction in their general education classrooms would be considered for special education. Thus, there is the possibility—and certainly the hope—that RtI will reduce inappropriate referrals to special education, especially of ethnic minority students, low-income students, and students who received weak reading instruction.¹²

The panel also believes that RtI holds the most potential for serious ongoing collaboration between the special education community and that of general education—largely because the collaboration is based on objective data and shared understandings of the evidence.

Summary of the Recommendations

This practice guide offers five concrete recommendations for helping elementary schools implement an RtI framework to ensure that all students in the primary grades learn to read. These recommendations

7. Haager, Klingner, and Vaughn (2007).

8. Donovan and Cross (2002).

9. Cited in Haager et al. (2007, p. 5, emphasis added).

10. Donovan and Cross (2002); Heller, Holtzman, and Messick (1982).

11. See Cunningham and Stanovich (1997); Felton and Pepper (1995); Phillips, Norris, Osmond, and Maynard (2002); Francis, Shaywitz, Stuebing, Shaywitz, and Fletcher (1996); Juel (1988); Torgesen and Burgess (1998); Torgesen, Rashotte, and Alexander (2001).

12. Donovan and Cross (2002); Heller, Holtzman, and Messick (1982).

appear in table 2. There are many ways to orchestrate this process, and implementing this system entails involvement of school personnel at many levels: classroom teachers, special educators, school psychologists, paraprofessionals, reading

coaches, specialists, and the principal. This guide provides concrete guidance on how to implement RtI; it does not describe which individuals on the team provide which services.

Table 2. Recommendations and corresponding levels of evidence

Recommendation	Level of evidence
1. <i>Screen all students for potential reading problems at the beginning of the year and again in the middle of the year. Regularly monitor the progress of students at risk for developing reading disabilities.</i>	Moderate
Tier 1 intervention/general education	
2. <i>Provide time for differentiated reading instruction for all students based on assessments of students' current reading level.</i>	Low
Tier 2 intervention	
3. <i>Provide intensive, systematic instruction on up to three foundational reading skills in small groups to students who score below the benchmark score on universal screening. Typically, these groups meet between three and five times a week, for 20 to 40 minutes.</i>	Strong
4. <i>Monitor the progress of tier 2 students at least once a month. Use these data to determine whether students still require intervention. For those students still making insufficient progress, schoolwide teams should design a tier 3 intervention plan.</i>	Low
Tier 3 intervention	
5. <i>Provide intensive instruction on a daily basis that promotes the development of the various components of reading proficiency to students who show minimal progress after reasonable time in tier 2 small group instruction (tier 3).</i>	Low

Source: Authors' compilation based on text.

We begin with specific methods for setting up a universal screening system (recommendation 1). We note the specific reading and reading-related skills that should be assessed in screening and progress-monitoring measures at each grade level. We assume most educators possess some knowledge of universal screening. Therefore, we provide specific suggestions on how to ensure that the screening measures used are effective.

As part of recommendation 1, we address the problem of false positives—students whose screening scores suggest that they need additional assistance, but who would do fine without it. This is a particular problem for measures given at the beginning of kindergarten; we explain why and what is recommended. We urge that schools seriously investigate both the degree to which a screening measure correctly identifies students at risk for reading difficulties and identifies students at low risk for such difficulties.

The second recommendation addresses how educators can use assessment data to differentiate reading instruction in tier 1. For example, classroom teachers can use assessment data to determine which students require additional instruction in decoding and vocabulary and which require additional assistance only with decoding instruction. While the concept of tier 1 instruction is amorphous, based on conventional definitions, differentiated instruction is often mentioned as a critical component of tier 1.¹³

Recommendations 3 and 4 address tier 2 interventions. In recommendation 3 we suggest that tier 2 students receive small group instruction in homogeneous groups for 20 to 40 minutes, three to five days a week. This recommendation has the most research and, most importantly, a clear

convergence in findings. It is not important whether a certified teacher or a paraprofessional provides the instruction. But instruction should be systematic, highly explicit, and highly interactive. We note that interventions must not focus only on phonemic awareness, decoding, and fluent reading (depending on student proficiency level) but should also include vocabulary and comprehension components.

Recommendation 4 addresses using data to monitor progress for students in tier 2 interventions. Although no studies have experimentally tested the impact of progress monitoring on outcomes in reading, we still encourage schools to monitor the progress of these students so that personnel possess information on how a student is doing in general reading proficiency and improving in specific skills. It is important to use progress-monitoring data to regroup students after six weeks. Tier 2 students who demonstrate improvement and return to tier 1 should be carefully monitored to ensure that general classroom instruction is adequate.

Recommendation 5 addresses tier 3 interventions, and we are candid about the paucity of research on effective tier 3 intervention. Tier 3 intervention is the most ambiguous component of RTI, and we did not find research on valid programs or processes. Based on the content of small-scale intervention studies and the expert opinion of the panel, we suggest, as Velutino et al. (2007) suggest, that tier 3 reading instruction be even more intensive than tier 2. Although student reading programs should be individualized, they should be viewed as more than one-on-one instruction. In particular, in listening and reading comprehension and vocabulary development small group instruction makes sense. We also note that districts should carefully monitor the success or failure of tier 3 programs, given the paucity of available evidence.

13. Connor, Morrison, Fishman, Schatschneider, and Underwood (2007).

Scope of the practice guide

Our goal is to provide evidence-based suggestions for implementing multi-tier interventions that are feasible and based on evidence from rigorous research. RtI and multi-tier interventions transgress the borders of special and general education and demand schoolwide collaboration. Thus, our target audience includes classroom teachers in the primary grades, special educators, school psychologists and counselors, as well as administrators.

This practice guide provides recommendations to schools and school districts on using RtI for primary grade students struggling with learning how to read. It is designed to guide educators on how to identify struggling students using RtI and implement interventions to improve these students' reading ability. The guide focuses on screening and interventions for struggling readers; it does not provide recommendations for general classroom reading instruction.

We limit the focus of the guide to the primary grades because the bulk of the current research has focused on these grade levels. The majority of the research on intervention and screening of students with reading difficulties was conducted in early grade levels. In addition, for the past 15 years, the country has seen a large push for early intervention to prevent reading difficulties later.¹⁴

Multi-tier instruction efforts like RtI can potentially prevent many struggling beginning readers from falling behind in ways that will harm their future academic success. Some aspects of RtI, however, (such as tier 1 instruction) are still poorly defined, and there is little evidence that some practices of targeted instruction will be effective. But a coordinated multi-tier instruction program that screens and monitors students accurately and addresses the core components of reading instruction can prevent struggling beginning readers from becoming struggling adolescent readers and reduce unnecessary referrals to special education.

14. Burns, Snow and Griffin (1996).

Checklist for carrying out the recommendations

Recommendation 1.
Screen all students for potential reading problems at the beginning of the year and again in the middle of the year. Regularly monitor the progress of students who are at elevated risk for developing reading disabilities.

- Create a building-level team to facilitate the implementation of universal screening and progress monitoring.
- Select a set of efficient screening measures that identify children at risk for poor reading outcomes with reasonable degrees of accuracy.
- Use benchmarks or growth rates (or a combination of the two) to identify children at low, moderate, or high risk for developing reading difficulties.¹⁵

Recommendation 2.
Provide differentiated reading instruction for all students based on assessments of students' current reading levels (tier 1).

- Provide training for teachers on how to collect and interpret student data on reading efficiently and reliably.
- Develop data-driven decision rules for providing differentiated instruction to students at varied reading proficiency levels for part of the day.
- Differentiate instruction—including varying time, content, and degree of support and scaffolding—based on students' assessed skills.

Recommendation 3.
Provide intensive, systematic instruction on up to three foundational reading skills in small groups to students who score below the benchmark score on universal screening. Typically, these groups meet between three and five times a week for 20 to 40 minutes (tier 2).

- Use a curriculum that addresses the components of reading instruction (comprehension, fluency, phonemic awareness, phonics, and vocabulary) and relates to students' needs and developmental levels.
- Implement this program three to five times a week, for approximately 20 to 40 minutes.
- Build skills gradually and provide a high level of teacher-student interaction with opportunities for practice and feedback.

Recommendation 4.
Monitor the progress of tier 2 students at least once a month. Use these data to determine whether students still require intervention. For those students still making insufficient progress, school-wide teams should design a tier 3 intervention plan.

- Monitor progress of tier 2 students on a regular basis using grade appropriate measures. Progress monitoring should occur at least eight times during the school year.
- While providing tier 2 instruction, use progress monitoring data to identify students needing additional instruction.
- Consider using progress monitoring data to regroup tier 2 students approximately every six weeks.

15. Schatschneider (2006).

Recommendation 5. Provide intensive instruction on a daily basis that promotes the development of the various components of reading proficiency to students who show minimal progress after reasonable time in tier 2 small group instruction (tier 3).

- Implement concentrated instruction that is focused on a small but targeted set of reading skills.
- Adjust the overall lesson pace.

- Schedule multiple and extended instructional sessions daily.
- Include opportunities for extensive practice and high-quality feedback with one-on-one instruction.
- Plan and individualize tier 3 instruction using input from a school-based RtI team.
- Ensure that tier 3 students master a reading skill or strategy before moving on.

Recommendation 1. Screen all students for potential reading problems at the beginning of the year and again in the middle of the year. Regularly monitor the progress of students who are at elevated risk for developing reading disabilities.

Universal screening is a critical first step in identifying students who are at risk for experiencing reading difficulties and who might need more instruction. Screening should take place at the beginning of each school year in kindergarten through grade 2. Schools should use measures that are efficient, reliable, and reasonably valid. For students who are at risk for reading difficulties, progress in reading and reading related-skills should be monitored on a monthly or even a weekly basis to determine whether students are making adequate progress or need additional support (see recommendation 4 for further detail). Because available screening measures, especially in kindergarten and grade 1, are imperfect, schools are encouraged to conduct a second screening mid-year.

Level of evidence: Moderate

The panel judged the level of evidence for recommendation 1 to be *moderate*. This recommendation is based on a series of high-quality correlational studies with replicated findings that show the ability of measures of reading proficiency administered in

grades 1 and 2 to predict students' reading performance in subsequent years.¹⁶ However, it should be cautioned that few of the samples used for validation adequately represent the U.S. population as required by the Standards for Educational and Psychological Testing.¹⁷ The evidence base in kindergarten is weaker, especially for measures administered early in the school year.¹⁸ Thus, our recommendation for kindergarten and for grade 1 is to conduct a second screening mid-year when results tend to be more valid.¹⁹

Brief summary of evidence

The panel recommends a series of screening measures be employed to assess proficiency in several key areas (see Table 3). Five correlational studies have demonstrated that certain types of measures can be used to accurately predict future student performance.²⁰ Tests conducted by the Assessment Committee (2002) demonstrate that these measures meet the standards for educational and psychological testing²¹ in terms of internal consistency and temporal

16. Compton, Fuchs, Fuchs, and Bryant (2006); McCardle, Scarborough, and Catts (2001); O'Connor and Jenkins (1999); Scarborough (1998a); Fuchs, Fuchs, and Compton (2004); Speece, Mills, Ritchey, and Hillman (2003b).

17. American Education Research Association, American Psychological Association, and National Council on Measurement in Education (1999).

18. Jenkins and O'Connor (2002); O'Connor and Jenkins (1999); Scarborough (1998a); Torgesen (2002); Badian (1994); Catts (1991); Felton (1992).

19. Compton et al. (2006); Jenkins, Hudson, and Johnson (2007).

20. Compton et al. (2006); McCardle, Scarborough, and Catts (2001); O'Connor and Jenkins (1999); Scarborough (1998a); Fuchs, Fuchs, and Compton (2004); Speece et al. (2003b).

21. American Education Research Association, American Psychological Association, and National Council on Measurement in Education (1999).

stability.²² While the panel is not recommending which specific measure should be adopted in each school, the panel does recommend that students are screened with measures that have properties similar to those examined in these studies.

In our review of evidence, we detected problems with commonly used measures in terms of their ability to correctly identify children at low risk for experiencing problems (known as specificity). That is, the measures tend to consistently over-identify students as needing assistance.²³ We also noted a paucity of cross-validation studies.²⁴ Nonetheless, the extensive body of replicated correlational research supports our conclusion that these are reasonable batteries of measures to use for early screening, particularly in grades 1 and 2.

22. Coefficient alpha estimates are .84 for grade 1 letter sound knowledge, .80 for grade 1 phoneme blending, and .85 and .83 for grade 1 and 2 word reading on the Texas Primary Reading Inventory (1999). Coefficient alpha estimates are .92 and .91 for 6 and 7 year old children on the elision measure and .89 and .86 for 6 and 7 year old children on the sound matching measure on the Comprehensive Test of Phonological Processing (Wagner, Torgeson, and Rashotte 1999). Alternate test-form and stability coefficients exceed .90 in grade 1 for the word identification fluency task (Compton et al. 2006). For the DIBELS measures alternative-form reliability estimate for grade 1 letter naming fluency, .86 for grade 1 non-word fluency it is .83, and .90 for grade 2 oral reading fluency (Good and Kaminski 2003).

23. Foorman, Fletcher, Francis, Schatschneider, and Mehta (1998); O'Connor and Jenkins (1999); Jenkins and O'Connor (2002); McCardle, Scarborough, and Catts (2001).

24. Compton et al. (2006); O'Connor and Jenkins (1999); Foorman et al. (1998).

How to carry out this recommendation

1. Create a building-level team to facilitate the implementation of universal screening and progress monitoring.

In the opinion of the panel, a building-level RtI team should focus on the logistics of implementing school-wide screening and subsequent progress monitoring, such as who administers the assessments, scheduling, and make-up testing, as well as substantive issues, such as determining the guidelines the school will use to determine which students require intervention and when students have demonstrated a successful response to tier 2 or tier 3 intervention. Although each school can develop its own benchmarks, it is more feasible, especially during the early phases of implementation, for schools to use guidelines from national databases (often available from publishers, from research literature, or on the Office of Special Education Programs (OSEP) Progress Monitoring and RtI websites²⁵).

2. Select a set of efficient screening measures that identify children at risk for poor reading outcomes with reasonable accuracy.

As children develop, different aspects of reading or reading-related skills become most appropriate to use as screening measures. Table 3 highlights the skills most appropriate for each grade level. Some controversy remains about precisely which one skill is best to assess at each grade level. For that reason, we recommend the use of two screening measures at each juncture.

Table 3 also outlines some commonly used screening measures for kindergarten through grade 2 highlighting their focus, purpose, and limitations. The limitations are based on the opinion of the panel.

25. See <http://www.rti4success.org/> or <http://www.studentprogress.org/>.

Table 3. Recommended target areas for early screening and progress monitoring

Measures	Recommended grade levels	Proficiencies assessed	Purpose	Limitations
Letter naming fluency	K-1	Letter name identification and the ability to rapidly retrieve abstract information	Screening	This measure is poor for progress monitoring since students begin to learn to associate letters with sounds. It is not valid for English learners in kindergarten, but seems valid for grade 1.
Phoneme Segmentation	K-1	Phonemic awareness	Screening and progress monitoring	This measure is problematic for measuring progress in the second semester of grade 1. As students learn to read, they seem to focus less on phonemic skills and more on decoding strategies.
Nonsense word fluency	1	Proficiency and automaticity with basic phonics rule	Screening and progress monitoring	This measure is limited to only very simple words and does not tap the ability to read irregular words or multisyllabic words.
Word identification ²⁶	1-2	Word reading	Screening and progress monitoring	This measure addresses many of the limitations of nonsense word fluency by including multisyllabic and irregular words.
Oral reading fluency (also called passage reading fluency)	1-2	Reading connected text accurately and fluently	Screening and progress monitoring	Although the measure has moderately strong criterion-related validity, it cannot give a full picture of students' reading proficiency. Many students will score close to zero at the beginning of grade 1. The measure still is a reasonable predictor of end of year reading performance.

Source: Authors' compilation based on Fuchs, Fuchs, Thompson, Al Otaiba, Yen, Yang, Braun, and O'Connor (2001b), Speece et al. (2003b); Schatschneider (2006); O'Connor and Jenkins (1999); and Baker and Baker (2008) for letter naming fluency. For phoneme segmentation, O'Connor and Jenkins (1999). For nonsense word fluency, Speece et al. (2003b); Good, Simmons, and Kame'enui (2001). For word identification, Fuchs, Fuchs, and Compton (2004); Compton et al. (2006). For oral reading fluency, Fuchs, Fuchs, Hosp, and Jenkins (2001a); Fuchs, Fuchs, and Maxwell (1988); Schatschneider (2006); Speece and Case (2001); Gersten, Dimino, and Jayanthi (2008); Baker, Gersten, Haager, and Dingle (2006).

26. Fuchs et al. (2004); Compton et al. (2006)

Kindergarten screening batteries should include measures assessing letter knowledge, phonemic awareness, and expressive and receptive vocabulary.²⁷ Unfortunately, efficient screening measures for expressive and receptive vocabulary are in their infancy.

As children move into grade 1, screening batteries should include measures assessing phonemic awareness, decoding, word identification, and text reading.²⁸ By the second semester of grade 1 the decoding, word identification, and text reading should include speed as an outcome.²⁹ Grade 2 batteries should include measures involving word reading and passage reading. These measures are typically timed.

Despite the importance of vocabulary, language, and comprehension development in kindergarten through grade 2, very few research-validated measures are available for efficient screening purposes. But diagnostic measures can be administered to students who appear to demonstrate problems in this area.

Technical characteristics to consider

The panel believes that three characteristics of screening measures should be examined when selecting which measures (and how many) will be used.

Reliability of screening measures (usually reported as internal consistency reliability or Cronbach's alpha) should be at least 0.70.³⁰ This information is available from the publishers' manual or website for the measure. Soon this information will be posted on the websites for National Center

on Progress Monitoring and Response to Intervention.³¹

Predictive validity is an index of how well the measure provides accurate information on future reading performance of students—and thus is critical. In the opinion of the panel, predictive validity should reach an index of 0.60 or higher.

Reducing the number of false positives identified—students with scores below the cutoff who would eventually become good readers even without any additional help—is a serious concern. False positives lead to schools providing services to students who do not need them. In the view of the panel, schools should collect information on the sensitivity of screening measures and adjust benchmarks that produce too many false positives. There is a tradeoff, however, with the specificity of the measure and its ability to correctly identify 90 percent or more of students who really do require assistance.³² Using at least two screening measures can enhance the accuracy of the screening process; however, decision rules then become more complex.

Costs in both time and personnel should also be considered when selecting screening measures. Administering additional measures requires additional staff time and may displace instruction. Moreover, interpreting multiple indices can be a complex and time-consuming task. Schools should consider these factors when selecting the number and type of screening measures.

27. Jenkins and O'Connor (2002); McCardle, Scarborough, and Catts (2001); O'Connor and Jenkins (1999); Scarborough (1998a); Torgesen (2002).

28. Foorman et al. (1998).

29. Compton et al. (2006); Fuchs et al. (2004).

30. Nunnally (1978).

31. See <http://www.rti4success.org/> or <http://www.studentprogress.org/>.

32. Jenkins (2003).

3. Use benchmarks or growth rates (or a combination of the two) to identify children at low, moderate, or high risk for developing reading difficulties.³³

Use cut-points to distinguish between students likely to obtain satisfactory and unsatisfactory reading proficiency at the end of the year without additional assistance. Excellent sources for cut-points are any predictive validity studies conducted by test developers or researchers based on normative samples. Although each school district can develop its own benchmarks or cut-points, guidelines from national databases (often available from publishers, from research literature, or on the OSEP, Progress Monitoring, and RtI websites³⁴) may be easier to adopt, particularly in the early phases of implementation.

As schools become more sophisticated in their use of screening measures, many will want to go beyond using benchmark assessments two or three times a year and use a progress monitoring system.

Roadblocks and suggested approaches

Roadblock 1.1. *It is too hard to establish district-specific benchmarks.*

Suggested Approach. National benchmarks can assist with this process. It often takes a significant amount of time to establish district-specific benchmarks or standards. By the time district-specific benchmarks are established, a year could pass before at-risk readers are identified and appropriate instructional interventions begin. National standards are a reasonable alternative to establishing district-specific benchmarks.

Roadblock 1.2. *Universal screening falsely identifies too many students.*

Suggested Approach. Selecting cut-points that accurately identify 100 percent of the children at risk casts a wide net—also identifying a sizeable group of children who will develop normal reading skills. We recommend using universal screening measures to liberally identify a pool of children that, through progress monitoring methods, can be further refined to those most at risk.³⁵ Information on universal screening and progress monitoring measures can be found at the National Center on Student Progress Monitoring or the Iris Center at Vanderbilt University.³⁶

Roadblock 1.3. *Some students might get “stuck” in a particular tier.*

Suggested Approach. If schools are responding to student performance data using decision rules, students should not get stuck. A student may stay in one tier because the instructional match and learning trajectory is appropriate. To ensure students are receiving the correct amount of instruction, schools should frequently reassess—allowing fluid movement across tiers. Response to each tier of instruction will vary by student, requiring students to move across tiers as a function of their response to instruction. The tiers are not standard, lock-step groupings of students. Decision rules should allow students showing adequate response to instruction at tier 2 or tier 3 to transition back into lower tiers with the support they need for continued success.

33. Schatschneider (2006).

34. See <http://www.rti4success.org/> or <http://www.studentprogress.org/>.

35. Compton et al. (2006).

36. See <http://www.studentprogress.org/> or <http://iris.peabody.vanderbilt.edu/>.

Roadblock 1.4. *Some teachers place students in tutoring when they are only one point below the benchmark.*

Suggested Approach. No measure is perfectly reliable. Keep this in mind when students' scores fall slightly below or above a cutoff score on a benchmark test. The panel recommends that districts and schools review the assessment's technical manual

to determine the confidence interval for each benchmark score. If a student's score falls within the confidence interval, either conduct an additional assessment of those students or monitor their progress for a period of six weeks to determine whether the student does, in fact, require additional assistance.³⁷

37. Francis et al. (2005).

Recommendation 3. Provide intensive, systematic instruction on up to three foundational reading skills in small groups to students who score below the benchmark on universal screening. Typically, these groups meet between three and five times a week for 20 to 40 minutes (tier 2).

Tier 2 instruction should take place in small homogenous groups ranging from three to four students using curricula that address the major components of reading instruction (comprehension, fluency, phonemic awareness, phonics, and vocabulary). The areas of instruction are based on the results of students' scores on universal screening. Instruction should be systematic—building skills gradually and introducing skills first in isolation and then integrating them with other skills. Explicit instruction involves more teacher-student interaction, including frequent opportunities for student practice and comprehensible and specific feedback. Intensive instruction should occur three to five times per week for 20 to 40 minutes.

Level of evidence: Strong

The panel judged the evidence supporting this recommendation as *strong* based on 11 studies that met WWC standards or that met WWC standards with reser-

vations.⁴¹ These studies on supplemental instruction in reading support tier 2 intervention as a way to improve reading performance in decoding. Six studies showed positive effects on decoding,⁴² and four showed effects on both decoding and reading comprehension.⁴³ Six studies involved one-on-one instruction,⁴⁴ and the remainder used small groups ranging from two to five students. Given that effect sizes were not significantly higher for the one-on-one approach, small group work could be considered more practical for implementation.

Brief summary of evidence

The 11 studies that met WWC standards or that met WWC standards with reservations suggest that educators should emphasize the critical reading skills of phonemic awareness, decoding, reading comprehension, and fluency at appropriate grade levels. Two of five studies that measured phonemic awareness demonstrated significant effects.⁴⁵ Five of nine studies that measured decoding demonstrated significant effects, and students showed positive

41. Ebaugh (2000); Gunn, Biglan, Smolkowski, and Ary (2000); Mathes, Denton, Fletcher, Anthony, Francis, and Schatschneider (2005); Jenkins, Peyton, Sanders, and Vadasy (2004); Lennon and Slesinski (1999); Vaughn, Mathes, Linan-Thompson, Cirino, Carlson, Pollard-Durodola, Cardenas-Hagan, and Francis (2006); Vadasy, Sanders, and Peyton (2005); Ehri, Dreyer, Flugman, and Gross (2007); Gibbs (2001); McMaster, Fuchs, Fuchs, and Compton (2005); Vadasy, Jenkins, Antil, Wayne, and O'Connor (1997).

42. Ebaugh (2000); Gunn et al. (2000); Jenkins et al. (2004); Lennon and Slesinski (1999); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

43. Gunn et al. (2000); Jenkins et al. (2004); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

44. Gunn et al. (2000); McMaster et al. (2005); Vadasy et al. (1997); Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Gibbs (2001).

45. Ehri et al. (2007); Lennon and Slesinski (1999).

effects in five of seven studies⁴⁶ that measured reading comprehension. Only one study found significant effects in reading fluency. Vocabulary was the least examined outcome of the 11 studies, with only 1 study measuring and finding effects on vocabulary knowledge.⁴⁷

Since 7 of the 11 studies that met WWC standards or that met standards with reservations produced a significant effect on at least one reading outcome, and all seven studies used explicit instruction, we concluded that explicit instruction is an effective approach to use in tier 2 intervention.⁴⁸

How to carry out this recommendation

1. Use a curriculum that addresses the components of reading instruction (phonemic awareness, phonics, vocabulary, comprehension, and fluency) and relates to students' needs and developmental level.

Tier 2 intervention curricula are sometimes called *standard protocols*. Standard protocols are tutoring programs taught to all students scoring below benchmark.⁴⁹ These “one size fits all” programs address foundational skills and strategies that are essential to learning to read. The panel suggests that schools should use intervention programs to provide tier 2 instruction for all students scoring below benchmark for at least five weeks to discern which

students may need further intervention. After five weeks, some students may have caught up.

In choosing an intervention program for tier 2, administrators should look for programs—either commercially available intervention curricula, commercially developed supplemental curricula, or intervention programs—that are compatible with their school’s core reading program and that provide intensive small group instruction in three to four foundational skills. Ideally, the intervention program has demonstrated its effectiveness through independent evaluations using rigorous experimental or quasi-experimental designs.

The intervention curriculum should teach and build foundational skills to mastery and incorporate some complex reading skills. Specific components vary by grade level and reflect the changing developmental emphasis at different stages in reading. Table 4 highlights the foundational reading skills students should develop in kindergarten through grade 2. Skills validated by research are indicated by table notes. The remaining skill areas are considered critical by the panel.

The critical skill for *kindergarteners* to master is the ability to segment phonemes, a key indicator of future success or failure in reading.⁵⁰ Also important are letter-sound identification, the alphabetic principle (the recognition of the relationship between spoken sounds and letters), and beginning decoding skills (blending written letters into words). Students who can perform these tasks understand the phonemic elements in words leading to accurate and fluent decoding.⁵¹

In general, during the first semester, grade 1 students who participate in tier 2

46. Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Vaughn et al. (2006); Ehri et al. (2007).

47. Gunn et al. (2000).

48. Gunn et al. (2000); Jenkins et al. (2004); Ehri et al. (2007); Ebaugh (2000); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

49. There are some obvious exceptions, such as students already identified as students with significant cognitive disabilities, students who already have Individualized Education Programs in reading or language involving a much more basic curriculum.

50. Lennon and Slesinski (1999).

51. Gunn et al. (2000).

Table 4. Foundational reading skills in grades K-2

Grade	Skill
Kindergarten	Phonemic awareness ^a Letter sounds ^b Listening comprehension Vocabulary development
Grade 1	Phonemic awareness ^c Phonics ^d Fluency (high frequency words) Fluency with connected text (second half of the year) ^e Vocabulary ^f Comprehension ^g
Grade 2	Phonics ^h Fluency with connected text Vocabulary ⁱ Comprehension

a. Lennon and Slesinski (1999).

b. Lennon and Slesinski (1999).

c. Ehri et al. (2007).

d. Gunn et al. (2000); Jenkins et al. (2004); Ehri et al. (2007); Mathes et al. (2005); Vadasy, Sanders, and Peyton (2005).

e. Ehri et al. (2007).

f. Gunn et al. (2000).

g. Jenkins et al. (2004); Ehri et al. (2007); Mathes et al. (2005); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

h. Gunn et al. (2000).

i. Gunn et al. (2000).

Source: Authors' compilation based on information described in the text.

interventions will need instruction in phonics (decoding one and then two syllable words) and fluency. Since these are beginning readers, fluency instruction during the first semester is taught by first focusing on fluently and accurately reading short lists of high frequency words. During the second semester, as students move into reading connected text, interventions focusing on reading accurately, fluently, and with prosody (proper expression) should be added. Some grade 1 students will still need intensive and usually more accelerated instruction in phonemic awareness (blending and segmenting sounds) and basic phonics (letter sound correspondence) interventions to increase their understanding of the alphabetic principle.⁵²

Phonics interventions for grade 2 students concentrate on learning more difficult skills, such as digraphs (*oa* as in boat and *ch* as in child), diphthongs (*ew* as in stew, *oi* as in soil), and controlled R (*ar* as in car, *ur* as in fur). These interventions address structural analysis skills that focus on prefixes, suffixes, forming plurals, and adding *-ed* and *-ing* to form past and progressive tenses. Students also apply phonetic skills to words with more than one syllable. Fluency should continue to be emphasized.⁵³

Some intervention curricula will include what the panel believes are important activities: literal comprehension (questions whose answers are stated in the text), more sophisticated comprehension strategies (summarizing a portion of text), listening comprehension strategies, spelling, ex-

52. Gunn et al. (2000); McMaster et al. (2005); Jenkins et al. (2004); Vaughn et al. (2006); Ehri et al. (2007).

53. Gunn et al. (2000).

pressive writing, and read-alouds. Literal comprehension and some rudimentary comprehension instruction occur in many of the successful interventions, and so are recommended.⁵⁴ Other elements, such as inferential comprehension and vocabulary development, may be better developed with more heterogeneous groups during the reading language arts block. It is the opinion of the panel that an intervention curriculum that covers five to six skills per day may not provide the intensity necessary to improve reading achievement.

2. Implement this program three to five times a week, for approximately 20 to 40 minutes.

Tier 2 instruction should be implemented for 20 to 40 minutes, three to five times per week in small groups of three to four students. Student grade level and needs should determine the duration.

An intervention session can range from 20 to 30 minutes for kindergarten students to 40 to 50 minutes for grade 2 students, depending on student needs. Providing kindergarten students with 20 minutes of daily instruction has been demonstrated to have a positive impact on their acquisition of early reading skills, such as phonemic awareness and letter-sound correspondence.⁵⁵ As students move into grades 1 and 2, the time needed for interventions usually increases as the skills they need to catch up to their peers without reading difficulties broaden.

A small body of descriptive evidence suggests that the time spent on each area of instruction might be more important than the total instructional time. How time is spent and proportioned appears critical. For example, merely doubling instructional time—providing double doses of

the same intervention—is not effective.⁵⁶ But according to Harn, Linan-Thompson, and Roberts (2008), doubling instructional time while changing the percentage of time allotted to each instructional area in response to students' changing needs resulted in better outcomes on timed oral reading fluency and word reading measures for students.

3. Build skills gradually and provide a high level of teacher-student interaction with opportunities for practice and feedback.

Reading instruction should be systematic—building skills gradually and introducing skills first in isolation and then by integrating them with other skills to provide students practice and to build generalization.⁵⁷ Students should be given clear, corrective feedback, and cumulative review to ensure understanding and mastery. For example, in phonics, a critical area in grade 1 tier 2 interventions, a systematic curriculum might begin by introducing a few of the most frequently used consonants sounds (m, s, t, b) followed by a vowel, usually the short a. This allows students to integrate these newly learned sounds by blending sounds into words.

Reading instruction should also be explicit. Explicit instruction involves a high level of teacher-student interaction that includes frequent opportunities for students to practice the skill and clear, specific corrective feedback. It begins with overt and unambiguous explanations and models. An important feature of explicit instruction is making the thinking process public. Thinking aloud should occur during all instructional components of tier 2 interventions ranging from systematic skill building in phonics to teaching more

54. Vaughn et al. (2006); Gunn et al. (2000).

55. Gunn et al. (2000); Gunn, Smolkowski, Biglan, and Black (2002); Lennon and Slesinski (1999).

56. Wanzek and Vaughn (2007).

57. Gunn et al. (2002); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006); Mathes et al. (2005); Jenkins et al. (2004); McMaster et al. (2005).

complex and intricate comprehension strategies (such as summarizing or making inferences). When thinking aloud, teachers should stop, reflect, and formulate an explanation of their thinking processes.

Roadblocks and suggested approaches

Roadblock 3.1. *Some teachers or reading specialists might worry about aligning the tier 2 intervention program with the core program.*

Suggested Approach. Since tier 2 instruction relies on foundational (and sometimes prerequisite) skills that are determined by the students' rate of progress, it is unlikely that the same skill will be addressed in the core reading instruction at the same time. Alignment is not as critical as ensuring that instruction is systematic and explicit and focuses on the high priority reading components.

Roadblock 3.2. *Finding an additional 15 to 50 minutes a day for additional reading instruction can be a daunting task.*

Suggested Approach. Schools should first determine who will provide the intervention. If the classroom teacher will provide the intervention, then small group instruction could occur when students are working independently at classroom learning centers. In grade 2 classrooms, where there is non-direct instructional time, intervention lessons can occur at times that do not conflict with other critical content areas, such as mathematics, particularly if a person other than the classroom teacher is providing the intervention. There may be situations in schools with reading blocks of two to two and a half hours where it is appropriate for students to work at learning stations or complete assignments while the classroom teacher is conducting tier 2 interventions, especially if tier 2 students are unable to complete these assignments.

Appendix D. Technical information on the studies

**Recommendation 1.
Screen all students for potential reading problems at the beginning of the year and again in the middle of the year. Regularly monitor the progress of students who are at elevated risk for developing reading disabilities.**

Level of evidence: Moderate

The panel judged the level of evidence for recommendation 1 to be *moderate*. While a growing number of screening studies are appearing in the research literature, a majority of studies relies on correlational designs, lack cross-validation, and fail to use representative samples. In this appendix, we discuss the limited evidence base in terms of sensitivity and specificity of the measures.

Sensitivity is the degree to which a measure correctly identifies children at risk for experiencing difficulties in learning to read. In contrast, specificity is the degree to which a measure correctly identifies children at low risk for experiencing problems. These false positives refer to students who eventually become good readers but score below the cut-score on the predictive instrument and are thus falsely identified as at risk. Providing these students with extra tutoring stresses school resources, providing intervention to an inflated percentage of the population.⁸⁰

To date, researchers have placed a premium on identification and early treatment of children at risk of future reading failure, and therefore high sensitivity rather than specificity is favored. The overall effect of demanding high sensitivity is to over-iden-

tify the risk pool of children needing tier 2 intervention. Studies predicting risk in kindergarten children have reported sensitivity rates approaching minimally acceptable level of 90 percent with specificity ranging from 56 percent to 86 percent,⁸¹ which means that often far too many students are identified as at-risk for reading difficulties.⁸²

Results are more promising for grades 1 and 2. Several studies have demonstrated sensitivity in grade 1 above 90 percent with acceptable specificity.⁸³ For example, Compton et al. (2006) reports sensitivity rates approaching 100 percent with specificity of 93 percent using a combination of a one-time screening battery (containing measures of word identification, phonemic awareness, and rapid naming skill) in combination with six weeks on progress monitoring. However, these results have not been cross-validated and were not obtained with a representative sample. Similar results have been reported for screening grade 2 students.⁸⁴

**Recommendation 2.
Provide differentiated reading instruction for all students based on assessments of students' current reading levels (tier 1).**

Level of evidence: Low

The panel rated the level of evidence for this recommendation as *low* based on one descriptive-correlational study with first and second graders that met standards with reservations and the opinion of the

80. Jenkins and O'Connor (2002).

81. Foorman et al. (1998); O'Connor and Jenkins (1999).

82. See Jenkins and O'Connor (2002) for a discussion of the issue and for designing a manageable and acceptable risk pool for use within an RTI framework.

83. Compton et al. (2006); O'Connor and Jenkins (1999).

84. Foorman et al. (1998).

panel. The correlational study—Connor et al. (2008)—examines how student reading growth varied by the degree to which teachers employed a specific differentiation program. This differentiation program relied on assessments to group students. Student reading growth was higher for teachers who implemented the program with greater fidelity.

**Recommendation 3.
Provide intensive, systematic reading instruction on up to three foundational reading skills in small groups to students who score below the benchmark on universal screening. Typically, these groups meet between three and five times a week for 20 to 40 minutes (tier 2).**

Level of evidence: Strong

The panel judged the level of evidence supporting the recommendation to be *strong*. The panel found 11 studies conducted with students in the primary grades that met WWC standards or met standards with reservations. Table D1 provides an overview of each study's outcomes in each of the five critical aspects of beginning reading instruction as articulated in the 11 studies. The table provides an overview of the

reading domains taught in each tier 2 intervention and any significant outcomes found for each of the five domains. Group size for tier 2 instruction, typical session length, and duration are also indicated. Note that many in the field consider frequency and duration as gauges of *intensity* of the intervention.⁸⁵ One study is excluded from the table but included in the accompanying text because it was a follow-up study of an intervention that produced strong effects in many reading domains.⁸⁶

Because of the large number of high quality randomized controlled trials and quasi-experimental design studies conducted using systematic instruction in several of the critical domains of beginning reading instruction, the frequency of significant effects, and the fact that numerous research teams independently produced similar findings, the panel concluded that there is *strong* evidence to support the recommendation to provide intensive, explicit, and systematic instruction in critical reading skills stressed in National Reading Panel for tier 2 interventions.⁸⁷

85. National Association of State Directors of Special Education (2005).

86. Gunn et al. (2002).

87. National Reading Panel (2000).

Table D1. Studies of tier 2 interventions in grades K–2 reading that met What Works Clearinghouse standards

Study	Grade level	Intervention	Reading domain assessed					Intensity		Group size
			Phonemic awareness	Decoding	Reading comprehension	Vocabulary	Fluency	Frequency	Duration	
Ebaugh, 2000	1	PA, D, E, W		ns				30 min./day Daily	32 weeks	5–6 students
Ehri et al. 2007	1	PA, D, E, F, C, V	*	*	*		*	30 min./day Daily	24 weeks	one-on-one
Gibbs, 2001	1	PA	ns	ns				10 min./day Daily	8 weeks	one-on-one
Gunn et al. 2000	K–3	PA, D, C, F		*	^	*	^	≥25 min./day Daily	56 weeks (over two years)	2–3 (Some one-on-one)
Jenkins et al. 2004	1	D, E		*	*		^	30 min. four times a week	25 weeks	one-on-one
Lennon and Slesinski, 1999	K	PA, D, C	*	*				30 min./day Daily	10 weeks	2 students
Mathes et al. 2005	1	Both: PA, D, C Responsive: E, F, V, W		*	* (responsive intervention) ^ (proactive intervention)		ns	40 min./day Daily	32 weeks	3 students
McMaster et al. 2005	1	PA, D	ns	ns	ns	ns	ns	35 min./day three times a week	7 months	one-on-one
Vadasy et al., 1997	1	PA, D, E	ns	ns				30 min/day four times a week	28 weeks	one-on-one
Vadasy et al., 2005	1	PA, D, E		*	*		ns	30 min./day four times a week	32 weeks	one-on-one
Vaughn et al., 2006	1	PA, D, E, C, F, V		*	*		ns	50 min./day Daily	28 weeks	3–5 students

Note: Studies in bold showed statistically significant effects in at least one domain of reading instruction.

PA = phonemic awareness, D = decoding, E = encoding (Spelling related to phonics instruction), C = Comprehension, V=Vocabulary, F=Fluency, W = writing
ns = not statistically significant ($p > .10$).

^ = approached significance ($p = .05-.10$).

* = statistically significant ($p < .05$).

Source: Authors' analysis based on studies in table.

Evidence supporting explicit, systematic instruction as the key instructional delivery method for tier 2 tutoring on foundational reading skills.

All 11 studies used programs that systematically taught reading skills,⁸⁸ with seven of these studies demonstrating a positive effect on one or more reading outcomes.⁸⁹ For example, Gunn et al. (2000) conducted a randomized controlled trial involving supplementary instruction for students in kindergarten through grade 3 in phonemic awareness, sound-letter correspondence, and decoding. Instruction was highly explicit, students received many opportunities to practice each skill, and feedback was immediate and clear. Reading material consisted of decodable texts based on current reading levels. Although the emphasis was on decoding and fluency, the researchers also found an effect on reading vocabulary.

Jenkins et al. (2004) and Vadasy et al. (2005) used a virtually identical approach. Content of the intervention was similar except more time was spent on sight words and spelling. Here effects were found not only in decoding but also in comprehension. The findings suggested that, at least in kindergarten and grade 1, students with strong systematic instruction in small groups in phonemic awareness and decoding and fluent reading may also show growth in comprehension or vocabulary.

Both Ehri et al. (2007) and Vaughn et al. (2006) offered the widest menu of reading domains, including comprehension and vocabulary instruction along with

the core foundational skills for learning how to read. Vaughn et al. found effects in comprehension as well as decoding, whereas Ebaugh's effects were limited to decoding. Ehri included phonemic awareness, decoding, reading comprehension, and fluency.

In summary, this highly explicit, highly systematic mode of small group instruction consistently produces positive effects, often significant effects in the area of decoding and often in comprehension and vocabulary as well. What remains uncertain is the balance of “learning to read” skills and comprehension, vocabulary, and language development in tier 2 interventions. Most important, the field needs to systematically study which domain areas make the most sense for students at various levels of reading proficiency. Our hypothesis is that the balance increases to more complex reading comprehension activities once students learn to read. However, for those still struggling to learn to read, it is unclear how much instruction in vocabulary and listening comprehension is necessary.

In understanding the nature of this body of evidence, the reader should keep in mind that instruction was often one-on-one (6 out of 11 of the WWC-rated studies) or in very small groups of two to three students.

In the remainder of the section, we review impacts on specific domains of tier 2 reading instruction.

Evidence supporting instruction of critical reading skills

Phonemic awareness. Five studies measured phonemic awareness—a student's understanding that words consist of individual phonemes. Phonemic awareness is a potent predictor of future success in reading and a critical foundational skill for

88. Gunn et al. (2000); McMaster et al. (2005); Vadasy et al. (1997); Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Gibbs (2001); Vaughn et al. (2006); Ebaugh (2000); Ehri et al. (2007); Mathes et al. (2005).

89. Gunn et al. (2000); Jenkins et al. (2004); Ehri et al. (2007); Ebaugh (2000); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

becoming a reader.⁹⁰ Significant outcomes were found for only two studies although most of the tier 2 interventions did have a phonemic awareness component.⁹¹

Three of the five studies showed no significant effects for phonemic awareness. In some cases, ceiling effects may have played a role in the lack of significant findings. Meanwhile, lack of significant effects in the Gibbs (2001) study may be due to the short intensity and duration of the intervention. In this investigation students received 10 minutes of phonemic awareness instruction five times per week for only eight weeks. In addition, it is common for students' phonological skills to decrease as they begin to understand letter-sound correspondence. In other words, by the time students were post-tested their understanding of the relationship between letters and the sounds they make may have influenced their performance on the phonemic awareness assessments.

Decoding. Students' ability to read real words and individual sentences (not connected text), was measured in all nine studies.⁹² Significant effects were reported in five of these studies.⁹³ The fact that this finding is replicated frequently indicates that the various approaches to systematic explicit instruction all seem to produce growth in this domain.

Reading comprehension. Reading comprehension assessments were used as

outcome measures in 7 of the 11 studies,⁹⁴ and significant outcomes were reported in five studies.⁹⁵ This also is a sizeable proportion and indicates that one can expect effects in this domain. This is especially interesting because of the five studies that demonstrated significant effects; only three had a comprehension component. For example, Vadasy et al. (2005) and Jenkins et al. (2004) included a good deal of oral reading of decodable texts⁹⁶ but no explicit comprehension instruction. Yet effects on comprehension were significant. The reader should keep in mind that although this is an important finding, the level of comprehension tapped in most of these measures for grade 1 and 2 students is usually not very complex.

Vaughn et al.'s (2006) intervention included a good deal of work with oral reading of connected text but also small group instruction in a variety of comprehension strategies (using K-W-L, summarization, and retelling). This intervention led to significant effects.

Vocabulary. Students' vocabulary knowledge was rarely assessed. Of the three studies that assessed this domain,⁹⁷ significance was reported in only one.⁹⁸ Reading vocabulary is thus unlikely to improve unless the intervention contains a vocabulary component. But the small number of studies that assessed this phenomenon means that results are simply inconclusive.

90. Vaughn et al. (2006); Gunn et al. (2000); Vadasy, Sanders, and Peyton (2005); Ebaugh (2000); Lennon and Slesinski (1999).

91. Vadasy, Sanders, and Peyton (2005); Lennon and Slesinski (1999).

92. Gunn et al. (2000); McMaster et al. (2005); Vadasy et al. (1997); Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Gibbs (2001); Lennon and Slesinski (1999); Ebaugh, (2000); Ehri et al. (2007).

93. Ehri et al. (2007); Gunn et al. (2000); Jenkins et al. (2004); Lennon and Slesinski (1999); Vadasy, Sanders, and Peyton (2005).

94. Gunn et al. (2000); McMaster et al. (2005); Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Vaughn et al. (2006); Ehri et al. (2007); Mathes et al. (2005).

95. Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Vaughn et al. (2006); Ehri et al. (2007); Mathes et al. (2005).

96. Jenkins et al. (2004) also contained a condition where students read books that were not necessarily decodable. This condition, too, led to significant effects in comprehension.

97. Gunn et al. (2000); Gunn et al. (2002); McMaster et al. (2005).

98. Gunn et al. (2000).

Fluency. Students' ability to read connected text fluently and accurately was assessed in 7 of the 11 studies,⁹⁹ and treatment students performed significantly better in one study and approached significance (p was between .5 and .10) in two studies.¹⁰⁰ Students' performance on these measures resulted in a few intriguing findings. In the follow up study conducted a year after the supplemental tier 2 intervention, Gunn et al. (2002) found that fluency outcomes were significant, but the original study (Gunn et al. 2000) did not demonstrate significant fluency outcomes. In other words, it may take time before a fluency intervention demonstrates impact.

As primary grade students practice reading fluently, they seem to improve their word reading accuracy. When considered together, results suggest that fluency interventions are a promising practice, as opposed to a clear evidence-based practice for tier 2 interventions at this point in time.

Research supporting intensity: frequency and duration of sessions and group size

Tier 2 instruction varied from three to five times a week. Six of the studies with significant outcomes on decoding, reading comprehension, or fluency provided daily instruction.¹⁰¹ But data suggesting that daily interventions lead to better effects than those administered four days a week or even three is insufficient.

In terms of length of intervention sessions, nine studies provided at least 25 minutes

of instruction,¹⁰² with one study reporting 50 minutes of instruction per session.¹⁰³ The seven studies that had an effect on decoding, reading comprehension, or fluency provided instruction for at least 25 minutes,¹⁰⁴ while the three studies that had no significant effects varied in the length of sessions from 10 to 35 minutes.¹⁰⁵

It is not possible to determine the role the number of days of intervention played in the studies in which no significant findings were found despite the intensity of the intervention. Although one study provided intervention five times a week, it did so for only ten minutes a day,¹⁰⁶ and one study provided instruction for 35 minutes but only three times a week.¹⁰⁷ Based on the evidence from these studies, it would be advisable to provide intervention four to five times a week and for at least 30 minutes.

In 6 of the 11 studies students were instructed on one-on-one.¹⁰⁸ Configurations for the remaining studies¹⁰⁹ consisted of small groups ranging from two to six students. The panel suggests that the combination of intensity (the amount of time per session) and duration (number of weeks) rather than the grouping configuration may be the critical variable contributing to

99. Gunn et al. (2000); Mathes et al. (2005); Jenkins et al. (2004); Ehri et al. (2007); McMaster et al. (2005); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

100. Gunn et al. (2002); Vadasy, Sanders, and Peyton (2005); Ehri et al. (2007).

101. Ebaugh (2000); Gibbs (2001); Gunn et al. (2000); Lennon and Slesinski (1999); Vaughn et al. (2006); Mathes et al. (2005).

102. Ebaugh (2000); Gibbs (2001); Gunn et al. (2000); Mathes et al. (2005); Jenkins et al. (2004); Lennon and Slesinski (1999); McMaster et al. (2005); Vadasy et al. (1997); Vadasy, Sanders, and Peyton (2005).

103. Vaughn et al. (2006).

104. Ebaugh (2000); Gunn et al. (2000); Gunn et al. (2002); Jenkins et al. (2004); Lennon and Slesinski (1999); Vadasy, Sanders, and Peyton (2005); Vaughn et al. (2006).

105. McMaster et al. (2005); Vadasy et al. (1997); Gibbs (2001).

106. Gibbs (2001).

107. McMaster et al. (2005).

108. McMaster et al. (2005); Vadasy et al. (1997); Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Gibbs (2001); Erhi et al. (2007).

109. Lennon and Slesinski (1999); Ebaugh (2000); Gunn et al. (2000); Vaughn et al. (2006).

positive outcomes for students. However, this is only speculative at this point.

The only inference that can be clearly drawn is that the 10-minute phonemic awareness lessons conducted daily for eight weeks were not intense enough to produce significant effects in reading-related skills. The one-on-one sessions tended to be reasonably lengthy (30 minutes) and of long duration. Three of the four produced significant effects.¹¹⁰

In the four investigations where students were taught in small groups¹¹¹ significant outcomes were reported for interventions that ranged between 10 weeks and 1.5 years and were conducted for 25 to 50 minutes daily. Only Mathes et al. (2005) and Vaughn et al. (2006) reported significant effects in reading comprehension. Significant outcomes in decoding and fluency were reported by Gunn (2000), while Lennon and Slesinski (1999) reported significant effects in phonemic awareness and decoding. Decoding was the only outcome measure in the Ebaugh (2000). Unfortunately, after 30 minutes of instruction per day for 32 weeks, there were no significant effects.

A study of intensive, explicit, and systematic small group instruction—Vaughn, Mathes, Linan-Thompson, Cirino, Carlson, Pollard-Durodola, et al. 2006

This intervention study was conducted in two sites in Texas that were selected because they were representative of the population areas where large numbers of bilingual students go to school and because students were receiving reading instruction in English. Four schools within these districts that were considered effective for

bilingual students were selected using a priori criteria: schools were providing English intervention for reading to at least two classes of grade 1 English language learner students, at least 60 percent of the student population was Latino, and schools' state-level reading achievement tests at grade 3 indicated that 80 percent or more of students passed the test.

The research team screened all students in 14 bilingual, grade 1 classrooms in the four schools. Criteria for selecting students for the intervention were determined as being those who scored below the 25th percentile in grade 1 on the Letter Word Identification subtest in both Spanish and English, and who were unable to read more than one word from the simple word list. Two-hundred sixteen students were administered both the Spanish and English screen at the four target schools. One-hundred eleven students (51 percent) met the Spanish intervention inclusion criteria, 69 students (32 percent) met the English intervention inclusion criteria, and 58 students (27 percent) met both criteria. Eleven students met the English cutoff but not the Spanish cutoff, and these students were not eligible for the intervention.

The study was initiated with 24 intervention students and 24 contrast students and due to ordinary attrition (students' families moving or students transferring to other schools), the study ended with 22 intervention and 19 contrast students (8 percent attrition for intervention and 21 percent attrition for contrast); data were not obtainable on one student (contrast) at either testing time point. The mean age of the 47 students with pretest data was 6.59 years (SD = 0.54). All students were Hispanic, and female students comprised 50 percent of the sample (n = 23).

110. Vadasy, Sanders, and Peyton (2005); Jenkins et al. (2004); Ehri et al. (2007).

111. Lennon and Slesinski (1999); Ebaugh (2000); Gunn et al. (2000); Vaughn et al. (2006).

Eligible students received daily supplemental instruction from October to April. Each session was 50 minutes long. Forty minutes were spent on literacy instruction.

Reading Apprenticeship®

Intervention Report | English Language Arts Topic Area

A Publication of the National Center for Education Evaluation at IES

WHAT WORKS
CLEARINGHOUSE™

January 2023*

WWC 2023-003
U.S. DEPARTMENT OF EDUCATION

Students need strong literacy skills to succeed in core academic subjects—English, mathematics, science, and social studies—and to be prepared for college and careers. *Reading Apprenticeship*® is a professional development program that aims to help teachers improve their students’ literacy skills. The program also aims to improve student social-emotional learning outcomes such as belonging, social awareness, growth mindset, and self-efficacy. *Reading Apprenticeship*® trains teachers to model reading comprehension strategies and help students practice these strategies in their classrooms.

The What Works Clearinghouse (WWC) reviews existing research on educational interventions to identify evidence-based programs and practices. This WWC intervention report summarizes the available evidence on the effects of *Reading Apprenticeship*® on student achievement outcomes in middle and high school.

Goal: *Reading Apprenticeship*® aims to help teachers improve their instructional practices so that they can better develop student literacy skills and improve social-emotional learning outcomes.

Target population: Teachers in middle schools, high schools, and community colleges across content areas—including English, mathematics, science, and social studies—can use *Reading Apprenticeship*®.

Did *Reading Apprenticeship*® improve student outcomes?

Five studies of *Reading Apprenticeship*® meet WWC standards. Findings from these five studies are summarized in Table 1. The table includes rows for each outcome domain—a group of related outcome measures—that was studied in the research.

Table 1 indicates whether the evidence satisfies the WWC’s requirements for strong, moderate, or promising tiers of evidence. Based on one study that meets WWC standards, there is moderate evidence that *Reading Apprenticeship*® positively impacted student science achievement and grade point average.

The WWC effectiveness rating indicates whether *Reading Apprenticeship*® resulted in improved outcomes for students whose teachers participated in the program compared with students whose teachers did not. Taken together, findings from all five studies meeting WWC standards suggest that *Reading Apprenticeship*® had *potentially positive effects* on science achievement and grade point average and *uncertain effects* on achievement in life sciences, social studies, literacy, reading comprehension, vocabulary, and mathematics. Findings and conclusions could change as new research becomes available.

Studies also measured the effects of *Reading Apprenticeship*® on school attendance, credit accumulation, engagement, happiness, belonging, positive identity, growth mindset, and suspensions. However, these findings are not summarized in Table 1 because this report is primarily focused on the effects of *Reading Apprenticeship*® on certain academic outcomes as pre-specified in the [Systematic Review Protocol for English Language Arts Interventions](#). Findings for these other outcomes, all of which showed *uncertain effects*, are reported on the WWC website. The effects of *Reading Apprenticeship*® on other student outcomes not discussed here are unknown.

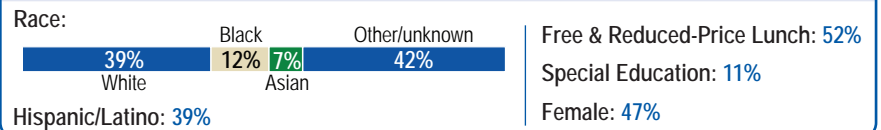
Table 1. Summary of findings on *Reading Apprenticeship*® from studies that meet WWC standards

Outcome domain	Effectiveness rating	Sample size	Evidence tier	Summary
Science achievement	Potentially positive effects	1,151 students	TIER 2 MODERATE	One study provides strong evidence that <i>Reading Apprenticeship</i> ® improved student science achievement. Because this assessment is based on only 1 study that meets WWC standards, the WWC effectiveness rating is potentially positive effects.
Academic achievement (grade point average)	Potentially positive effects	2,563 students	TIER 2 MODERATE	One study provides strong evidence that <i>Reading Apprenticeship</i> ® improved student grade point average. Because this assessment is based on only 1 study that meets WWC standards, the WWC effectiveness rating is potentially positive effects.
Life sciences	Uncertain effects	1,172 students	NO TIER ASSIGNED	The research does not support claims that <i>Reading Apprenticeship</i> ® improved life sciences achievement. This assessment is based on 1 study that meets WWC standards.
Social studies achievement	Uncertain effects	447 students	NO TIER ASSIGNED	The research does not support claims that <i>Reading Apprenticeship</i> ® improved social studies achievement. This assessment is based on 1 study that meets WWC standards.
Literacy achievement	Uncertain effects	9,178 students	NO TIER ASSIGNED	The research does not support claims that <i>Reading Apprenticeship</i> ® improved general literacy achievement. This assessment is based on 3 studies that meet WWC standards.
Reading comprehension	Uncertain effects	20,716 students	NO TIER ASSIGNED	The research does not support claims that <i>Reading Apprenticeship</i> ® improved reading comprehension. This assessment is based on 5 studies that meet WWC standards.
Vocabulary	Uncertain effects	2,255 students	NO TIER ASSIGNED	The research does not support claims that <i>Reading Apprenticeship</i> ® improved student vocabulary. This assessment is based on 1 study that meets WWC standards.
Mathematics achievement	Uncertain effects	7,819 students	NO TIER ASSIGNED	The research does not support claims that <i>Reading Apprenticeship</i> ® improved mathematics achievement. This assessment is based on 2 studies that meet WWC standards.

FINDINGS FROM 5 STUDIES

22,176 students in California, Michigan, New York, Pennsylvania, Texas, and Wisconsin

STUDENTS IN GRADES 7-9






HOW THE WWC REVIEWS AND DESCRIBES EVIDENCE

The WWC conducted a systematic review of interventions designed to improve teacher practice and selected and prioritized studies for review using the version 4.1 [Systematic Review Protocol for English Language Arts Interventions](#). The WWC evaluated the quality and results of the selected studies using the criteria outlined in the version 4.1 [Procedures and Standards Handbooks](#) and the accompanying [Study Review Protocol](#).

The WWC considers each study's research design, whether findings were statistically significant and positive, and the number of studies contributing to this report. The WWC synthesizes evidence across studies—using a weighted average—to determine the effectiveness rating for each outcome domain. The WWC defines outcome domains in the [Study Review Protocol](#) to group related outcome measures.

Effectiveness rating	Description of the evidence
Positive (or negative) effects	The evidence base primarily includes the strongest research designs, and the average effect across all high-quality research is statistically significant and positive (or negative).
Potentially positive (or negative) effects	The evidence base primarily includes research with some limitations, and the average effect across all high-quality research is statistically significant and positive (or negative).
Uncertain effects	The average effect across all high-quality research is not statistically significant, so the WWC does not classify it as a positive or a negative effect.

The WWC considers the effectiveness rating, the sample size, and the number of educational sites (states, districts, local education agencies, schools, postsecondary campuses) across studies to determine the evidence tier for each outcome domain. When the effectiveness rating is *uncertain*, *potentially negative*, or *negative* effects, there is no evidence tier.

Evidence tier	Criteria based on evidence synthesis
Strong evidence of effectiveness	 <ul style="list-style-type: none"> Receives an effectiveness rating of positive effects, and Includes at least 350 students in at least two educational sites
Moderate evidence of effectiveness	 <ul style="list-style-type: none"> Receives an effectiveness rating of potentially positive effects, and Includes at least 350 students in at least two educational sites
Promising evidence of effectiveness	 <ul style="list-style-type: none"> Receives an effectiveness rating of potentially positive effects or positive effects Includes fewer than 350 students or two educational sites

How was *Reading Apprenticeship*® implemented?

This section provides details of how districts and schools implemented *Reading Apprenticeship*® in the five studies that contribute to this intervention report. This information can help educators identify the requirements for implementing *Reading Apprenticeship*® and determine whether implementing this program would be feasible in their districts or schools.

Reading Apprenticeship® professional development is usually implemented along with a school-selected literacy curriculum. *Reading Apprenticeship*® began as a yearlong curriculum for struggling readers. The original program, called *Reading Apprenticeship Academic Literacy (RAAL)*, was implemented in the 1996-97 school year, before the introduction of the professional development program. The *Reading Apprenticeship*® professional development program, which includes a summer training series and coaching during the school year, was developed in 1999 and remains available today. Between 2010 and 2015, the developers designed three new program packages that emphasized different aspects of the program. *Reading Apprenticeship Improving Secondary Education (RAISE)* was designed to support a larger number of *Reading Apprenticeship*® teachers within schools by recruiting teacher leaders and providing other supports such as monthly school-based meetings for teachers. Another package, *Internet-*

Comparison condition: In the five studies that contribute to this intervention report, students in the comparison group were taught by teachers who did not participate in *Reading Apprenticeship*®. Comparison students received instruction in the same core subjects as students in the intervention group, except in one study (Somers et al., 2010), where comparison students participated in an elective course not related to English language arts. Teachers may have participated in other training or professional development programs offered by their schools or school districts.

based *Reading Apprenticeship Improving Science Education (iRAISE)*, was developed for high school science teachers only and consists of online training. *Reading Apprenticeship Across the Disciplines (RAAD)* offers fewer professional development sessions by streamlining some content in the standard *Reading Apprenticeship*® professional development program.

The five studies summarized in this intervention report each implemented a different package:

- RAAL curriculum with professional development (Somers et al., 2010)
- *Reading Apprenticeship*® original professional development (Greenleaf et al., 2009)
- RAISE professional development (Fancsali et al., 2015)
- iRAISE professional development (Jaciw et al., 2016)
- RAAD professional development (Pyatigorsky et al., 2019)

Each package of *Reading Apprenticeship*® included virtual or in-person training, which was conducted on-site or off-site, as well as access to follow-up supports. In all packages, teachers implemented *Reading Apprenticeship*® instructional strategies with their students. The program was implemented over the course of 1 school year for each cohort of students, and in two studies (Fancsali et al., 2015, and Pyatigorsky et al., 2019), some students were exposed to the program for 2 years. Table 2 describes the components and implementation of *Reading Apprenticeship*® in more detail.

WWC standards assess the quality of the research, not the quality of the implementation. Studies that meet WWC standards vary in quality of implementation. However, a study must describe the relevant components of the program and how each was implemented with adequate detail to be included in an intervention report.

Table 2. Implementation of components of *Reading Apprenticeship*®

Component	Description of the component	How it was implemented
Professional development	<p>Teachers and other school staff may participate in two professional development courses: the <i>Reading Apprenticeship</i>® <i>Essentials I</i> course, which introduces educators to <i>Reading Apprenticeship</i>® instructional strategies, and the <i>Reading Apprenticeship</i>® <i>Essentials II</i> course, which focuses on cognitive and knowledge-building routines. Teachers then may receive on-site coaching from professional coaches or trained staff within the school or district.</p> <p>Professional development for teachers and other school staff is available in person (both on-site and off-site) or online and is delivered in nine 2-hour online trainings, or in 3- to 10-day in-person trainings, depending on the type of training selected.</p> <p>Teacher leaders, coaches, and administrators can also receive on-site coaching from the developer and may take an online course called <i>Leading for Literacy Online</i> to learn strategies to help support and sustain <i>Reading Apprenticeship</i>® implementation.</p>	<p>In four of the five studies reviewed for this report, teachers, teacher leaders, and administrators received a 5-day introductory training in the summer before the start of the program. Training for coaches, who were hired by the developer or regional partners, was provided separately. In the fifth study (Pyatigorsky et al., 2019), which implemented the RAAD package, the training was delivered over a 3-day period.</p> <p>Professional development was delivered in person in four studies and online in one study.</p> <p>Follow-up training was provided in all five studies. In addition, monthly professional learning community meetings were held in two studies, monthly teacher leader meetings were held in one study, weekly calls or emails were sent to teachers in one study, and periodic interviews or calls were held with teachers in one study.</p>
Instructional strategies	<p>Teachers use <i>Reading Apprenticeship</i>® instructional strategies with the goal of helping students to build comprehension skills, overcome difficulties with reading, interact more deeply with text, gain interest in reading, and improve their confidence in reading. Every educator who receives <i>Reading Apprenticeship</i>® professional development is given a copy of the developer's e-book, <i>Reading for Understanding</i>, for reference.</p> <p>In <i>Reading Apprenticeship</i>®, the teacher (the "master reader") models comprehension strategies and helps students (the "reading apprentices") practice these strategies. Teachers mentor students in reasoning and problem-solving skills designed to help students handle more complex reading tasks. Through conversations between teachers and students, students are expected to become aware of specific reading processes and to understand the thought processes that guide their comprehension of the text.</p>	<p>All <i>Reading Apprenticeship</i>® packages that were studied implemented the instructional strategies.</p>

Note: The descriptive information for this intervention comes from the program website, <https://readingapprenticeship.org>; the five studies that meet WWC standards; and from correspondence with the developer.

How much does *Reading Apprenticeship*® cost?

This section provides educators with an overview of the resources needed to implement *Reading Apprenticeship*®. Table 3 describes the major resources needed for implementation and approximate costs, based on information available as of August 2022.

Table 3. Resources needed to implement *Reading Apprenticeship*®

Resource	Description	Funding source
Personnel	The <i>Reading Apprenticeship</i> ® <i>Essentials</i> series includes three courses: an introduction to <i>Reading Apprenticeship</i> ®; advanced materials and additional practice; and training for becoming a coach, teacher leader, or supporting administrator. Each course can be purchased for \$900 per participant for online instruction or \$1,500 per participant for in-person instruction. All in-person training activities include additional travel and lodging costs. On-site or online small-group coaching for teachers is also available for up to 40 teachers in half-day sessions.	School districts or schools cover costs for training and professional development, although the developer may have grant funding available to support the cost. In the studies reviewed for this report, professional development costs were covered by grant funding or direct support by WestEd's Strategic Literacy Initiative.
Facilities	Professional development is delivered online or in school facilities.	School districts or schools provide the facilities, computers, and internet access.
Equipment and materials	A copy of the developer's e-book, <i>Reading for Understanding</i> , is provided with the <i>Reading Apprenticeship</i> ® <i>Essentials</i> courses. If a school is adopting the optional <i>Reading Apprenticeship Academic Literacy</i> curriculum, the teacher materials bundle costs \$495.95 per teacher and includes transparencies, DVDs, and binders for each of the three units in the curriculum. The student materials bundle costs \$92.75 per student and includes student readers and interactive notebooks.	School districts or schools purchase <i>Reading Apprenticeship</i> ® materials for their teachers and students.

For more information about the cost of *Reading Apprenticeship*®:

About *Reading Apprenticeship*®

WestEd/Strategic Literacy Initiative
730 Harrison Street
San Francisco, CA 94107

Email: [REDACTED] Web: <https://readingapprenticeship.org/>. Phone: [REDACTED]

About the cost of the intervention

Web: <https://readingapprenticeship.org/services/>

What research did the WWC review about *Reading Apprenticeship*®?

This section provides details about the studies of *Reading Apprenticeship*® that the WWC identified in its systematic review. This section summarizes all of the studies reviewed by the WWC for this intervention report and the findings and the characteristics of the five studies that meet WWC standards.

The quality of evidence in the available research about *Reading Apprenticeship*®

The WWC identified nine studies that investigated the effectiveness of *Reading Apprenticeship*® from a literature search in the Education Resources Information Center (ERIC) and other databases in February 2022. Of these nine studies, five meet WWC standards and contribute to the summary of evidence in this intervention report. Studies that do not meet WWC standards do not contribute to this intervention report (Figure 1).

- **Three studies meet WWC standards without reservations.** All three studies are low-attrition randomized controlled trials that receive the highest WWC research rating. Two studies are cluster randomized controlled trials that assigned schools to the intervention or comparison conditions, and one study assigned students to intervention or comparison conditions.
- **Two studies meet WWC standards with reservations.** Both studies are cluster randomized controlled trials that analyzed intervention and comparison groups that appeared similar before introducing the intervention but do not meet the WWC's requirements for the highest WWC research rating. One study does not report the sample sizes needed to assess how many students remained in the study when outcomes were measured. In the other study, students were assigned to the *Reading Apprenticeship*® or comparison classrooms after random assignment, which poses a risk that the two groups might be dissimilar.
- **Four studies do not meet WWC standards.** Three of these studies do not satisfy the baseline equivalence requirement because there is inconclusive evidence that the intervention and comparison groups were similar before introducing the intervention. In the fourth study, there is a confounding factor: Because there was a single classroom in the comparison group, it is not possible to isolate the effectiveness of *Reading Apprenticeship*® from the effectiveness of the teacher.

The citations for these three groups of studies are included in the references. For information on how the WWC determines study ratings, see the version [4.1 Procedures and Standards Handbooks](#), [WWC Standards Briefs](#), and the [Study Review Protocol](#), available on the WWC website.

More details about the five studies of *Reading Apprenticeship*® that meet WWC standards

The five studies that meet WWC standards examined the effects of *Reading Apprenticeship*® on standardized measures of academic achievement. Table 4 on the following page lists, for each finding, the name of the outcome, when it was assessed, the sample and setting, the means and standard deviations in the *Reading Apprenticeship*® and comparison groups, the effect size, the improvement index, and whether the WWC determined the finding to be statistically significant. Table 5 provides more contextual information about the five studies of *Reading Apprenticeship*® that meet WWC standards, including the study setting and participants.

Reading Apprenticeship® had *potentially positive* effects on science achievement and grade point average. *Reading Apprenticeship*® had *uncertain effects* on reading comprehension and literacy achievement because the average effect across all outcomes and studies in each domain was not statistically significant. Although the program had a statistically significant and positive effect on one outcome measure in each of these domains, findings for the other outcome measures were not statistically significant. *Reading Apprenticeship*® also had *uncertain effects* on life sciences, social studies achievement, vocabulary, and mathematics achievement.

The WWC also reviewed findings in other outcome domains for these studies including intrapersonal competencies (happiness, belonging, growth mindset, positive identity), student behavior (in-class engagement), student discipline (ever suspended), progressing in secondary school (credits earned in high school), and school attendance. None of these findings was statistically significant. These additional findings, and supplemental findings such as for subgroups of

What is an effect size? The effect size is a standardized measure of the impact of an intervention that can be synthesized across outcome measures and studies. A positive effect size favors the intervention group and a negative effect size favors the comparison group. Effect sizes further away from 0 means there was a larger difference between the groups.

What is an improvement index? The improvement index is another measure of the intervention's impact on an outcome. The improvement index can be interpreted as the expected change in percentile rank for an average comparison group student if that student had received the intervention. For example, an improvement index of +5 means that a comparison group student at the 50th percentile would have scored at the 55th percentile if they had received the intervention. The effect size and improvement index measure the same concept in different units, similar to meters and feet for distance.

What is statistical significance? A finding is statistically significant if the difference between the intervention and comparison group means was large enough that it is unlikely to have been obtained for an intervention without a true impact. The WWC considers *p*-values less than 0.05 to be statistically significant.

English learners and students with low prior achievement, do not factor into the program’s rating of effectiveness but can be viewed on the WWC website (<https://ies.ed.gov/ncee/wwc/ReviewedStudies/>). Links to each WWC study page are provided in the References. Other study findings that are not reported on the WWC website were either ineligible for review or did not meet WWC standards.

Table 4. Findings by outcome domain from five studies of *Reading Apprenticeship*® that meet WWC standards

Outcome	Timing of measurement and study	Study sample	Number of sites and program package	Mean (standard deviation)		Findings		
				Intervention group	Comparison group	Effect size	Improvement index	Statistically significant (p-value)
Science achievement outcome domain								
State science assessments	End of second year of implementation (Somers et al., 2010)	1,151 students in grade 9	17 schools in four states—RAAL	--	--	0.11	+4	Yes (p=0.03)
Summary for science achievement: Potentially positive effects						0.11	+4	Yes (p=0.03)
Academic achievement outcome domain								
Grade point average in core subjects	End of second year of implementation (Somers et al., 2010)	2,563 students in grade 9	17 schools in four states—RAAL	1.54 (0.95)	1.47 (0.96)	0.07	+3	Yes (p=0.02)
Summary for academic achievement: Potentially positive effects						0.07	+3	Yes (p=0.02)
Life sciences outcome domain								
California Standards Test (CST) biology assessment	End of second year of implementation (Greenleaf et al., 2009)	1,172 students in grades 9 and 10	45 schools in California—Original professional development	338.07 (43.79)	330.10 (55.49)	0.16	+7	No (p=0.27)
Summary for life sciences: Uncertain effects						0.16	+7	No (p=0.27)
Social studies achievement outcome domain								
State social studies assessments	End of second year of implementation (Somers et al., 2010)	447 students in grade 9	17 schools in four states—RAAL	--	--	0.15	+6	No (p=0.09)
Summary for social studies achievement: Uncertain effects						0.15	+6	No (p=0.09)

Outcome	Timing of measurement and study	Study sample	Number of sites and program package	Mean (standard deviation)		Findings		
				Intervention group	Comparison group	Effect size	Improvement index	Statistically significant (p-value)
Literacy achievement outcome domain								
California Standards Test (CST) English language arts assessment	End of second year of implementation (Greenleaf et al., 2009)	1,236 students in grades 9 and 10	45 schools in California—Original professional development	--	--	0.03	+1	No (p=0.74)
State English language arts assessments (standardized scores)	End of second year of implementation (Pyatigorsky et al., 2019)	6,889 students in grades 7 and 8	40 schools in California, New York, Texas, and Wisconsin—RAAD	--	--	-0.06	-2	No (p=0.30)
State English language arts assessments (standardized scores)	End of second year of implementation (Somers et al., 2010)	1,053 students in grade 9	17 schools in four states—RAAL	--	--	0.16	+6	Yes (p<0.01)
Summary for literacy achievement: Uncertain effects						0.04	+2	No (p=0.23)
Reading comprehension outcome domain								
Educational Testing Service (ETS) Global Integrated Scenario-Based Assessment	End of second year of implementation (Fancsali et al., 2015)	10,173 students in grades 9 to 12	42 schools in California and Pennsylvania—RAISE	--	--	0.14	+6	No (p=0.18)
CST Reading Comprehension	End of second year of implementation (Greenleaf et al., 2009)	1,111 students in grades 9 and 10	45 schools in California—Original program	--	--	0.04	+2	No (p=0.60)
ETS Global Integrated Scenario-Based Assessment for Biology	End of first year of implementation (Jaciw et al., 2016)	1,315 students in grades 9 to 12	27 schools in Michigan and Pennsylvania--iRAISE	--	--	0.01	0	No (p=0.79)
Degrees of Reading Power assessment	End of second year of implementation (Pyatigorsky et al., 2019)	5,862 students in grades 7 and 8	40 schools in California, New York, Texas, and Wisconsin—RAAD	58.67 (14.61)	60.11 (14.06)	-0.10	-4	No (p=0.14)
Group Reading Assessment and Diagnostic Examination (GRADE): Reading Comprehension subtest	End of second year of implementation (Somers et al., 2010)	2,255 students in grade 9	17 schools in four states—RAAL	90.00 (10.20)	88.80 (10.30)	0.12	+5	Yes (p<0.01)
Summary for reading comprehension: Uncertain effects						0.04	+1	No (p=0.07)

Outcome	Timing of measurement and study	Study sample	Number of sites and program package	Mean (standard deviation)		Findings		
				Intervention group	Comparison group	Effect size	Improvement index	Statistically significant (p-value)
Vocabulary outcome domain								
GRADE: Vocabulary subtest	End of second year of implementation (Somers et al., 2010)	2,255 students in grade 9	17 schools in four states—RAAL	93.30 (10.40)	93.30 (10.00)	0.00	0	No (p>0.99)
Summary for vocabulary: Uncertain effects						0.00	0	No (p>0.99)
Mathematics achievement outcome domain								
State mathematics assessments (standardized scores)	End of second year of implementation (Pyatigorsky et al., 2019)	6,556 students in grades 7 and 8	39 schools in California, New York, Texas, and Wisconsin—RAAD	--	--	-0.13	-5	Yes (p=0.05)
State mathematics assessments (standardized scores)	End of second year of implementation (Somers et al., 2010)	1,263 students in grade 9	17 schools in four states—RAAL	--	--	0.05	+2	No (p=0.32)
Summary for mathematics achievement: Uncertain effects						-0.01	-1	No (p>0.99)

Note: The intervention and comparison group means and standard deviations are not displayed for some findings in the table because they were not reported in units that can be compared to scores on the same measures in other samples or settings. RAAL=Reading Apprenticeship Academic Literacy; RAISE=Reading Apprenticeship Improving Secondary Education; iRAISE=Internet-based Reading Apprenticeship Improving Science Education; RAAD=Reading Apprenticeship Across the Disciplines.

Table 5. Characteristics of the five studies of *Reading Apprenticeship*® that meet WWC standards

<p>What was the study design?</p>	<p>All five studies used randomized controlled trial designs. One study (Somers et al., 2010) randomly assigned students to the intervention and comparison groups, while three studies randomly assigned schools (Fancsali et al., 2015; Greenleaf et al., 2009; Pyatigorsky et al., 2019), and one study randomly assigned teachers (Jaciw et al., 2016).</p>
<p>What was the WWC study rating?</p>	<p>Three studies—Fancsali et al. (2015), Pyatigorsky et al. (2019), and Somers et al. (2010)—are rated Meets WWC Group Design Standards Without Reservations because they are randomized controlled trials with low attrition. Two studies—Greenleaf et al. (2009) and Jaciw et al. (2016)—are rated Meets WWC Group Design Standards With Reservations because they are cluster randomized controlled trials that either had a risk of bias due to students who entered the clusters after they were randomly assigned (Jaciw et al. 2016) or the sample size of students was unknown at baseline and the WWC was unable to assess attrition (Greenleaf et al., 2009). In both studies, the analytic intervention and comparison groups satisfy the baseline equivalence requirement.</p>
<p>Where did the study occur?</p>	<p>Fancsali et al. (2015)</p> <ul style="list-style-type: none"> • The study took place in 42 high schools in California and Pennsylvania with students in grades 9 to 12. The study included English, science, and history classrooms. • The intervention group received instruction from teachers who received professional development in <i>Reading Apprenticeship Improving Secondary Education (RAISE)</i>, and the comparison group received instruction from teachers who did not participate in <i>RAISE</i>. <p>Greenleaf et al. (2009)</p> <ul style="list-style-type: none"> • The study took place in science classrooms within 45 high schools in California with students in grades 9 and 10. • The intervention group received instruction from teachers who received the original <i>Reading Apprenticeship</i>® professional development program, and the comparison group received instruction from teachers who did not participate in <i>Reading Apprenticeship</i>®. <p>Jaciw et al. (2016)</p> <ul style="list-style-type: none"> • The study took place in science classrooms within 26 high schools in Michigan and Pennsylvania with students in grades 9 to 12. • The intervention group received instruction from teachers who received professional development in <i>Internet-based Reading Apprenticeship Improving Science Education (iRAISE)</i>, and the comparison group received instruction from teachers who did not participate in <i>iRAISE</i>. <p>Pyatigorsky et al. (2019)</p> <ul style="list-style-type: none"> • The study took place in 40 middle schools in eight school districts in California, New York, Texas, and Wisconsin in grades 7 and 8. The study included English language arts, social studies, and science classrooms. • The intervention group received instruction from teachers who received professional development in <i>Reading Apprenticeship Across the Disciplines (RAAD)</i>, and the comparison group received instruction from teachers who did not participate in <i>RAAD</i>. <p>Somers et al. (2010)</p> <ul style="list-style-type: none"> • The study took place in grade 9 elective courses within 17 high schools across 10 school districts in the United States. The four states in which the study took place are not named in the study. • The intervention group received instruction from teachers who delivered the <i>Reading Apprenticeship Academic Literacy (RAAL)</i> curriculum in a supplemental class, and the comparison group took other elective courses such as career and technical services, performing arts, physical education, health, and foreign languages.
<p>Who participated in the study?</p>	<p>Fancsali et al. (2015)</p> <ul style="list-style-type: none"> • The study included 10,173 students taught by 252 teachers. • Approximately 48% of students were White, 8% were Asian, 5% were Black, 55% were female, 14% were English learners, 11% received special education services, 47% were eligible for free or reduced-price lunch, and 38% scored in the bottom third on the grade 8 state reading or English language arts test. <p>Greenleaf et al. (2009)</p> <ul style="list-style-type: none"> • The study included 1,236 students taught by 54 science teachers. • Approximately 22% of students were White, 13% were Asian, 8% were Black, 45% were Hispanic or Latino, 45% were female, and 36% were English learners. <p>Jaciw et al. (2016)</p> <ul style="list-style-type: none"> • The study included 1,315 students taught by 82 science teachers. • Approximately 73% of students were White, 16% were Black, 8% were Hispanic or Latino, 50% were female, and 52% were eligible for free or reduced-price lunch. <p>Pyatigorsky et al. (2019)</p> <ul style="list-style-type: none"> • The study included 6,889 students taught by 158 teachers. • Approximately 28% of students were White, 12% were Black, 9% were Asian, 50% were Hispanic or Latino, 48% were female, 14% were English learners, 12% received special education services, 55% were eligible for free or reduced-price lunch, and 9% were overage for their grade level. <p>Somers et al. (2010)</p> <ul style="list-style-type: none"> • The study included 2,255 students taught by 17 <i>Reading Apprenticeship</i>® teachers and an unknown number of comparison teachers. • Approximately 47% of the students were Black, 17% were White, 6% were another race, 30% were Hispanic or Latino, 50% were female, and 46% of students spoke another language besides English at home.

Recommended Citation

What Works Clearinghouse, Institute of Education Sciences, U.S. Department of Education. (2023, January). *Reading Apprenticeship*®. <https://whatworks.ed.gov>

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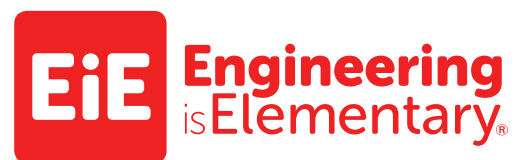
Additional sources

The WWC examined additional sources (such as preliminary reports, working papers, or other associated publications) related to the citations in the references to complete its review of these studies. The additional sources are listed on the WWC pages for each study review.

* In February 2023 the WWC modified this report to correct an error in the percentage of students eligible to receive free and reduced-price lunch. The percentage on page 2 was corrected from 49% to 52%. This revised report replaces the original January 2023 report.

Research and Evaluation for the Engineering is Elementary Project, 2004–2016

An Executive Summary



Engineering is Elementary (EiE) is a research-based program that has incorporated research, evaluation, and assessment into all aspects of curriculum design and testing from its inception. Our research questions, assessment instruments, and methods continue to evolve as the project grows and matures. This document summarizes some of the most notable findings from the project's first ten years as reported by studies conducted by project staff and external evaluators. The findings from most of these initial studies merit larger-scale, follow-up studies to examine them in more detail. The cited full reports and papers can be found on our website: <http://www.eie.org/engineering-elementary/eie-research>

Conceptions of Engineering

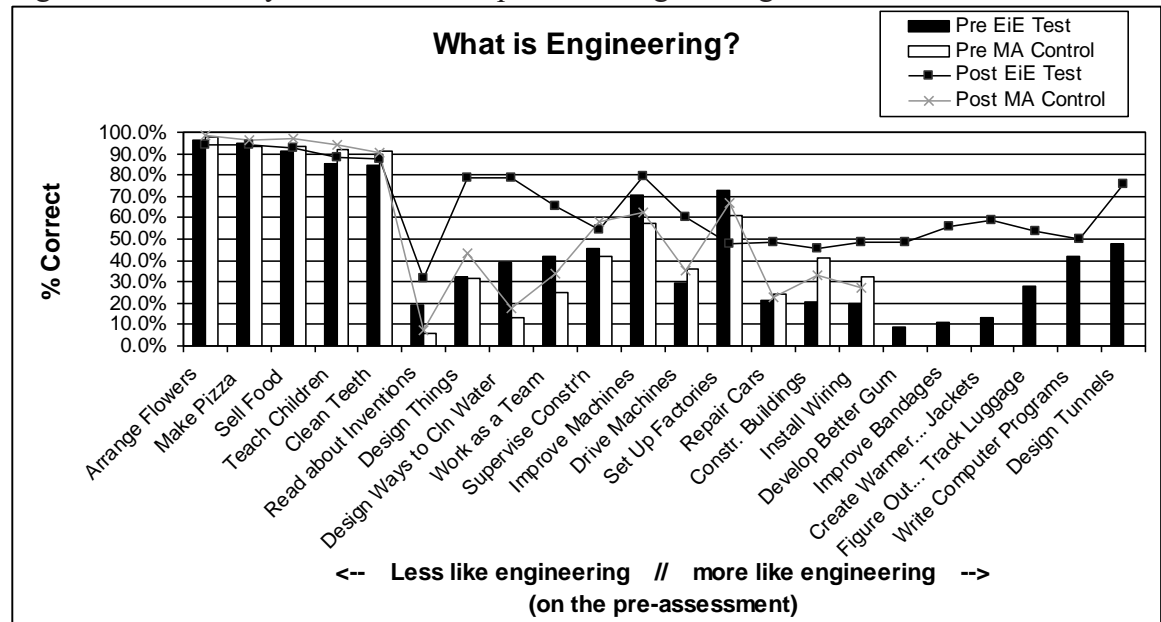
Student Conceptions:

An instrument—the Draw an Engineer Test—probed children's conceptions of engineering, asking them what engineering was, to draw an engineer at work, and to describe their picture in words. The results suggest that students have limited understandings of the type of work engineers do. Drawings focus heavily on constructing roads, buildings, or bridges; fixing cars; using or fixing computers; and driving trains. An awareness of the range of fields that engineering encompasses is fairly limited and student responses focus heavily on structures (construction workers: civil engineering), cars/machinery (auto mechanic: mechanical), and computers (computer technician: computer/electrical engineering) (Knight & Cunningham, 2004).

To more systematically probe children's conceptions of engineering the EiE team developed the "What is Engineering?" instrument that included captioned images of people working and asked students to choose those items that an engineer would do at work. Students were also asked to respond to the open-ended question "What is an engineer?" Over 7000 students completed a pre- and post- test of the validated instrument. Findings reveal similar patterns between students from all regions and ethnic groups—students tend to focus on the descriptor noun and not the verb: they are most likely to choose jobs involving construction or machines as engineering, such as "install wiring," "construct buildings," or "repair cars" and least likely to identify engineering that focused on non-mechanical/civil fields such as environmental "design ways to clean water," chemical "develop better bubble gum," and industrial "figure out ways to track luggage" (Christine M. Cunningham, Lachapelle, & Lindgren-Streicher, 2005).

In a first comparison with a control sample drawn from Massachusetts students, we have found through pre- and post-assessments that students participating in EiE units show dramatic and significant change in their understanding of the kinds of work that engineers do compared to children who do not use the EiE materials. Post-test of EiE students indicate they are significantly more likely to identify engineering items relating to the design of all types of technology, and they are less likely to choose non-design items relating to construction or repair work (see Figure 1) (Christine M. Cunningham et al., 2005; Lachapelle & Cunningham, 2007).

Figure 1: Elementary Students' Conceptions of Engineering



Further refinement of the “What is Engineering?” instrument has been implemented, including addition of questions about what types of activities are important to the work of engineers, construction of scales based on the conceptions of engineering that have been observed in previous studies, and validation of the instrument. Over 1000 Minnesota students in third and fourth grade who had not yet started EiE were assessed using the most recent version of the instrument, then compared with a sample of professional engineers. Based on the results, use of the “What is Engineering?” instrument confirms that students’ naïve conceptions of engineering focus on working with electronics, repairing or installing things related to cars, and constructing large building projects using tools, and not tasks like non-electronic design (as in “develop better bubble gum”). Once again, students are focusing on the subject of the work, not the type of work being done. In comparison, professional engineers have very clear ideas about what is and is not engineering based on whether or not the work involves designing and inventing, not what it is that is being designed (Lachapelle, Phadnis, Hertel, & Cunningham, 2012).

More recently, 731 Minnesota third, fourth, and fifth grade students completed the instrument prior to and after experiencing an EiE unit. For most demographic groups, these students’ scores on the whole instrument increased significantly from pre- to post-tests (Lachapelle, Hertel, Shams, & Cunningham, 2013). We are currently using Structural Equation Modeling analysis to further refine the “What is Engineering?” instrument and explore students’ conceptions of engineering before and after engaging in engineering education.

Teacher Conceptions:

The “What is Engineering?” instrument was also administered to 100 teachers. Teachers’ responses followed a pattern similar to students, although they were

more likely on all items to correctly discriminate between engineering types of work and non-engineering work (C. M. Cunningham & Lachapelle, 2007).

Conceptions of Technology

Student Conceptions:

A “What is Technology?” instrument that asked children to choose which captioned items were technology was also developed by the EiE team and administered to nearly 7,000 grade 2-5 students across the country. In general, children identify technology with items that run on electricity and power (Christine M. Cunningham et al., 2005; Lachapelle & Cunningham, 2007) and are unlikely to view items such as bandages, cups, or shoes as technology. These results are robust when compared by region or gender, though males are slightly more likely than females to have a broader conception of technology (Lachapelle & Cunningham, 2007).

Pre- and post-assessments of a national sample of students engaged with EiE materials when compared with a control group in Massachusetts that did not use EiE demonstrate that the EiE curriculum has a dramatic, significant impact on broadening students’ understanding of technology. After completing an EiE unit, students are significantly more likely to indicate that common-place, human-made items are technology (Lachapelle & Cunningham, 2007).

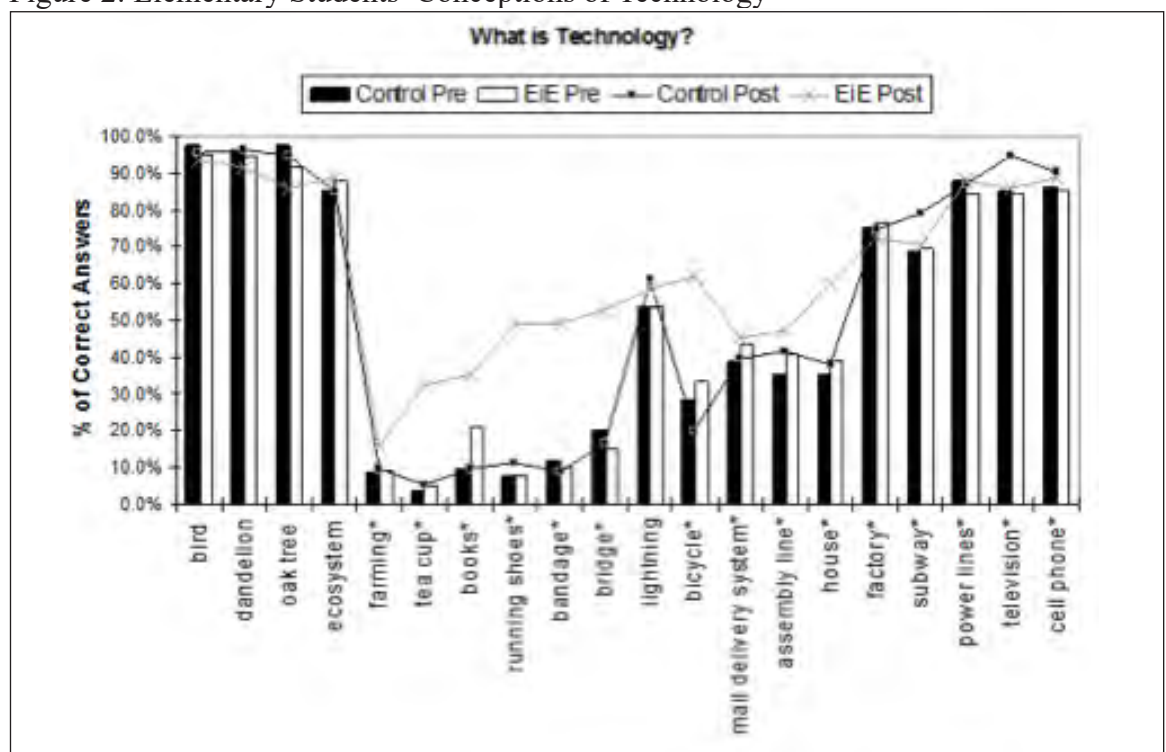
A more recent analysis of a newer version of the “What is Technology?” instrument looked at data collected from 2006-2009 from 1,092 students in grades 3-6. This sample included both EiE and control classrooms (57% and 43% of the sample, respectively) from multiple states including Colorado, California, Minnesota, and Massachusetts. Using the backward step-wise method of regression, a significant model emerged ($p < .001$), explaining 41% of the variance and showing a large Cohen’s d effect size (0.804) of the treatment on the post-assessment, after taking into account pre-assessment scores. Though demographic variables also affected scores, these effects were consistent across both control and treatment groups. Student choices on the post-assessment were examined using Principal Components Analysis, and were found to cluster into four components explaining 51% of the variance: Simple Technologies, Energy Technologies, System Technologies, and Non-Technologies. Students engaged in EiE were more likely than the control group to choose Simple Technologies and System Technologies as technologies (Jocz & Lachapelle, 2012). Students’ responses to individual items are shown in Figure 2.

The most recent version of the “What is Technology?” instrument has been used by groups of 242 students (Lachapelle, Jocz, & Phadnis, 2011), 508 students (Lachapelle, Hertel, Phadnis, & Cunningham, 2013) and 788 students (Lachapelle, Hertel, Shams, et al., 2013), all from Minnesota, before and after engaging in EiE units. For all groups, scores increased significantly from pre- to post-test; when a control group was used, EiE students improved significantly more than control

students. These data reinforced that students even before participating in EiE can correctly categorize non-technologies and electronic technologies, but have a tendency to incorrectly identify non-electronic technologies. This tendency does not appear as strongly on post-tests, suggesting that students gain a more accurate and nuanced understanding of technology following participation in EiE.

We are currently analyzing data from another large sample of students who completed the “What is Technology?” instrument by using Structural Equation Modeling. Through this, we hope to gain a clearer picture of the pieces of students’ conceptions and misconceptions about the nature of technology, as well as confirmation of the value of the instrument.

Figure 2: Elementary Students’ Conceptions of Technology



Teacher Conceptions:

Teachers show a similar pattern of responses though their conception of technology is much more likely to be congruent with the definitions of technology as any thing or process that humans have created to meet human needs or desires (C. M. Cunningham & Lachapelle, 2007; Christine M. Cunningham, Lachapelle, & Keenan, 2010).

Impact of EiE on Students

Impact of EiE on Student Understanding of Engineering and Science Concepts

During the development, pilot testing, and field testing of each EiE unit, students in grades 2-5 engaged in that unit complete a pre- and post-assessment.

Questions measure (a) general engineering and technology concepts, (b) concepts specific to the engineering field of focus in that unit, (c) engineering and technology concepts that are taught in the unit, and (d) understanding of the relevant science concepts that are reinforced by engineering activities.

The first round of analysis of student results from the pre- post-assessments of the first six EiE units found that, on more than 75% of questions, EiE students performed significantly better on the post-assessment than on the pre-assessment. In most cases where a control sample was available for comparison, EiE students performed significantly better than the control. This was true for both genders and all racial/ethnic groups (Lachapelle, 2007). An analysis of improvements made by students of teachers participating in the Pre-College Engineering for Teachers (PCET) professional development project found similar results (Lachapelle, Cunningham, Oware, & Battu, 2008). After completing an EiE unit, students demonstrated:

A better understanding of the specific kind of tasks that engineers working in a specific field (e.g., environmental engineers) might do for their job

- A better understanding that engineering involves design and teamwork.
- A better grasp of relevant engineering and technology vocabulary.
- A better understanding of the engineering design process.
- A better understanding of materials, their properties, and their uses in engineering design scenarios.
- An increased likelihood of understanding science content related to the unit.
- A better understanding of how to improve technologies.
- A better understanding of what a process is and how it is a type of technology.
- A better understanding of the criteria for judging the effectiveness of a technology (Lachapelle, 2007; Lachapelle et al., 2008).

A second round of analysis of units 7 through 15 compared EiE student performance against control groups, using HLM methodologies for 7 of the 9 unit analysis (the other 2 units had insufficient sample sizes for HLM analysis). Modeling again found that EiE students:

- Improved significantly on assessments,
- Performed significantly better on post-assessments than control groups when pre-assessment performance was taken into account,
- Performed significantly better than control on science questions, where a subgroup of science questions was available for analysis.

Details of findings can be found in Table 1 (Lachapelle, Cunningham, Jocz, Kay, et al., 2011).

Table 1: Effect Sizes for Classroom Participation in EiE Field Test Units 7-15

Unit	Outcome	Treatment Effect Size	Pre Class Mean Effect Size	Topics Assessed
7: Designing Alarm Circuits	PostAll	0.372	0.257	interpret schematic diagrams of circuits; identify aspects of electrical engineering; & science topics (below)
	PostScience	0.470	0.273	electrical current; insulators; conductors; forms of energy
9: Seeing Animal Sounds	PostAll	0.420	0.301	how to change sounds; how to represent sounds; how different materials affect sound; aspects of acoustical engineering; & science topics (below)
	PostScience	0.311	*	properties of sound: pitch, volume, duration
10: Evaluating a Landscape	PostAll	1.367	0.272	geotechnical engineering; foundation design; models; erosion
	PostScience	1.070	0.356	erosion
11: Designing Maglev Systems	PostAll	2.339	0.408	aspects of transportation engineering; design of maglev transportation systems; properties of magnets
13: Designing Plant Packages	PostAll	0.324	0.272 By treatment: 0.218	Packages; package engineering; needs of plants; functions of plant structures
14: Designing Solar Ovens	PostAll	0.689	0.570	green engineering; how solar ovens work; heat energy; insulation
15: Designing Parachutes	PostAll	1.292	0.551	design and operation of parachutes; aerospace engineering; & science topics (below)
	PostScience	1.045	0.456	atmospheric properties; the effects of drag on falling objects

*Variable tested but not significant.

A third round of analysis of units 16 through 20 compared EiE student performance on post-assessments against the pre-assessment, using t-tests and confidence intervals—a control group was not available. Analysis found that EiE students participating in all 5 units:

- Improved significantly on engineering questions ($p < 0.001$, all scales)
- Improved significantly on science questions ($p < 0.001$, all scales)

Details of findings can be found in Table 2 (Lachapelle, Cunningham, Jocz, Phadnis, et al., 2011).

Effect sizes found for participation in EiE units 7-15 ranged from small to large

across units; however, effect sizes are likely to be somewhat inflated for “PostAll” scores, which included engineering questions, since the control group did not receive engineering instruction. Similarly, significance of changes pre- to post-on engineering questions for students participating in EiE units 1-6 and 16-20 are likely to be inflated. For this reason, and also because the data was collected from convenience samples (not randomized samples) of field test and control classrooms, or not compared to control samples, these findings are promising but not conclusive (Lachapelle, 2007; Lachapelle, Cunningham, Jocz, Kay, et al., 2011).

Table 2: Reference Group Change in Score for EiE Field Test Units 16-20

Unit	Topic Assessed	Change in Score (Reference Gp)	95% CIs	t	df	p-value
16: Cleaning Up an Oil Spill (CO)	Environmental Engineering	1.65	[1.47, 1.82]	18.711	57	<0.001
	Science (Food Webs)	2.00	[1.74, 2.27]	15.052	57	<0.001
	Pollution	1.15	[1.01, 1.30]	16.062	58	<0.001
17: Replicating an Artifact (RA)	Properties of Materials	1.20	[1.01, 1.39]	12.565	60	<0.001
	Rocks	2.84	[2.60, 3.08]	23.598	61	<0.001
18: Designing Submersibles (SB)	Ocean Engineering	1.86	[1.57, 2.15]	12.876	36	<0.001
	Science (Sinking & Floating)	1.27	[1.01, 1.53]	9.880	37	<0.001
19: Designing Knee Braces (KB)	All	3.46	[3.20, 3.72]	26.864	604	<0.001
	Biomedical Engineering	1.50	[1.40, 1.59]	31.862	605	<0.001
	Models	1.09	[0.97, 1.22]	17.797	604	<0.001
	Science (Bones & Muscles)	0.95	[0.81, 1.08]	13.983	604	<0.001
20: Designing Lighting Systems (LS)	Optical Engineering	0.76	[0.56, 0.96]	7.527	55	<0.001
	Engineering Design	0.38	[0.29, 0.47]	8.556	55	<0.001
	Properties of Light	0.59	[0.47, 0.71]	9.540	56	<0.001
	Brightness & Movement of Light	0.91	[0.73, 1.10]	10.060	53	<0.001

Data from the use of EiE in Minneapolis and Hopkins, Minnesota, from 2009-2013 provide further evidence for the potential positive effects of the curriculum on student learning in science and engineering (Lachapelle, Jocz, & Phadnis, 2011; Lachapelle, Hertel, Phadnis, et al., 2013; Lachapelle, Hertel, Shams, et al., 2013). Student responses on content-specific instruments before and after participating in an EiE unit (including Designing Maglev Systems, Designing Water Filters, Designing Model Membranes, Seeing Animal Sounds, Cleaning an Oil Spill, and Making Work Easier) in many cases showed significant improvement in science and engineering scores from pre- to post-test. This study, as with the earlier pilot testing, should be considered promising but not conclusive, as most analyses did not feature control data.

Impact of EiE on Students' Interest in and Attitudes towards Science and Engineering Careers

Students who completed the Engineering is Elementary curriculum were significantly more likely to report interest in being an engineer on the post-survey than control students. They were also significantly more likely than control students to report interest in and comfort with engineering jobs and skills, and to agree that scientists and engineers help to make people's lives better (Christine M. Cunningham & Lachapelle, 2010). This improved interest in engineering has been confirmed by a later study, which also found that student demographics have minimal effect on this interest (Lachapelle, Phadnis, Jocz, & Cunningham, 2012).

The responses of boys and girls changed similarly in direction and size from the pre-survey to the post-survey, but girls' and boys' responses overall were significantly different on all questions regarding engineering jobs. Boys showed more interest than girls in the questions having to do with inventing, figuring things out, cars, and structures; girls showed more interest in the jobs to do with helping society and people. In addition, both boys and girls were significantly more likely to agree that they would enjoy being an engineer after completing an EiE unit, but boys reported more interested than girls on both the pre- and post-survey (Christine M. Cunningham & Lachapelle, 2010). The gender differences between inventing and helping, as well as EiE's effect on interest in engineering careers, have been confirmed by a later study. This same study showed that while the increases in reported enjoyment of being an engineer were significant for both boys and girls, the positive effect of EiE on girls' reported interest was significantly more than for boys (Lachapelle, Phadnis, Jocz, et al., 2012).

These potential effects of EiE on student attitudes about engineering careers are reinforced by data collected in Minnesota during 2009-2010 (Lachapelle, Jocz, et al., 2011). The 2010-2011 school year of data from these same sites also provided evidence for these effects. Changes from pre-EiE to post-EiE surveys showed students responding significantly more positively after EiE to statements about science and engineering, specifically as professions that help people and as enjoyable future careers (Lachapelle, Hertel, Phadnis, et al., 2013).

Impact on Underrepresented / Underserved Students

Teachers participating in the Pre-College Engineering for Teachers (PCET) professional development project reported that EiE works well with all students, whether low- or high-achieving, including students: with cognitive challenges, linguistic challenges, behavioral challenges, who are gifted and talented, who are girls, who are children of color, and who are at-risk in other ways. Of all these populations teachers agreed most strongly that the curriculum worked with children of color (Faux, 2008).

A small study of teachers' perceptions of the impact of EiE on students from

groups historically underrepresented in STEM fields (females, low-income, historically underrepresented minorities, IEP, English Language Learners), found that the majority of the 46 teachers responding to the survey indicated that student engagement, as well as their performance, in EiE was higher than it was in science. For some but not all groups, most teachers indicated that engagement in EiE was also higher than it was in school in general. Between 30 and 52 percent of teachers (percentages varied depending upon the sub-group) also indicated that performance in EiE was higher than it was in school in general. Most teachers also reported that using EiE had a positive impact on student interest in science, engineering, and mathematics, as well as student engagement and performance in school (Weis & Banilower, 2010).

A large-scale study of field test versions of EiE units 7-15 provides further evidence that EiE works well for all students. In most cases, demographic variables including whether a student has limited English proficiency (LEP), received free or reduced-price lunch (FRL), has an Individualized Education Program (IEP), or is from an underrepresented minority group (Is_Black or Is_Hispanic) were associated with poorer performance on both pre- and post-assessments, but this relationship was not moderated by treatment: the difference was the same for both the control and test groups (Lachapelle, Cunningham, Jocz, Kay, et al., 2011). A later study (Lachapelle, Phadnis, Jocz, et al., 2012), has returned similar results: student demographics rarely affected interest in and attitudes about engineering and related fields. Regardless of demographics, students who engaged with EiE were more likely to report that they “know what engineers do for their jobs” following participation (Lachapelle, Phadnis, Jocz, et al., 2012). While girls and boys, regardless of their participation in EiE, were showed interest in different types of engineering activities, (girls preferring helping people and the environment, and boys preferring inventing and figuring things out), both girls and boys were more likely to report that they “would enjoy being and engineer when [they] grow up”; the effect that EiE had on girls for this attitude towards engineering careers was even more pronounced than for boys (Lachapelle, Phadnis, Jocz, et al., 2012).

Teachers’ Perception of the EiE Curriculum

Teachers who use EiE in their classrooms rate the EiE curricular materials highly (Carson & Campbell, 2007a, 2007b; Faux, 2007; Lachapelle, Cunningham, Jocz, Kay, et al., 2011). Teachers participating in the Pre-College Engineering for Teachers (PCET) professional development project strongly and significantly agreed that EiE units are well designed, that the EiE units they used fit into the required curriculum, rather than being ‘one more thing’ to teach, and that EiE units are well matched to the level of students (Faux, 2007). Teachers participating in field testing of EiE units 7 through 20 similarly agreed that EiE units furthered their objectives for science and engineering, positively affected their students’ motivation, and are age-appropriate (Lachapelle, Cunningham,

Jocz, Kay, et al., 2011; Lachapelle, Cunningham, Jocz, Phadnis, et al., 2011). The same reports found that teachers consistently rated highly EiE's reinforcement of science learning objectives, and also cited other connections to literacy, math, and social studies as valuable in free response.

After using the EiE materials with their students, PCET teachers and field test teachers highly rate aspects of EiE indicating that they would do the unit again with their class, and that they found the directions clear and felt comfortable leading the lessons (Carson & Campbell, 2007a; Lachapelle, Cunningham, Jocz, Kay, et al., 2011). PCET teachers additionally agreed that the science and literacy connections were useful, and that overall they found that the materials for the activities were easy to get and students were able to successfully complete the design challenge (Carson & Campbell, 2007a).

Teachers see the EiE materials as an excellent fit for elementary school students and teachers, most often citing as strengths: the hands-on approach used by the units, the sound pedagogical design of the units, the ease with which they can be adapted to fit local circumstances, the collaborative nature of the activities, and the many ways in which using the units promotes a greater awareness of the ubiquity of engineering in the lives of the students. Concerns about the units, when voiced, focused on the length of time required to do the lessons, the acquisition and management of material resources to support the lessons, and the reading level of the EiE stories (Faux, 2006; Lachapelle, Cunningham, Jocz, Kay, et al., 2011; Lachapelle, Cunningham, Jocz, Phadnis, et al., 2011).

When asked to compare their experiences teaching EiE and traditional elementary science curricula, PCET teachers strongly agreed that with EiE, students: learn science concepts better, are more engaged, are more collaborative, are more creative, and make real world science / engineering connections (Faux, 2008). Similarly, many EiE field test teachers indicated, when asked "How did your students benefit, academically or otherwise, from taking part in this unit?" that EiE units provide opportunities for students to learn more about science and engineering, and their students learned unit-specific science and engineering content (Lachapelle, Cunningham, Jocz, Kay, et al., 2011; Lachapelle, Cunningham, Jocz, Phadnis, et al., 2011). In the same reports, many teachers also mentioned that their students gained a deeper understanding of the work of an engineer and were better able to recognize engineering in everyday life. A number of field test teachers also described how their students' problem solving, critical thinking, teamwork, and communication skills were improved. Another common response was that students enjoyed the unit and were engaged, especially with hands-on activities.

Impacts of EiE Professional Development and EiE Implementation on Teachers

EiE is very interested in the effect of professional development and implementation of an EiE unit on teachers and their pedagogies. In general, EiE

staff conduct a workshop evaluation at each program we offer—most of our data to date come from teachers who have both attended professional development and implemented a unit in the classroom and we have not yet teased apart the relative influence of these two experiences on teachers' responses.

However, because EiE was initially funded as a curriculum development program that was not supposed to require professional development for implementation, one evaluation study did examine whether both trained and untrained teachers could use the materials effectively. It revealed that teachers found it easy to implement the EiE curricular materials, even without training. Both types of teachers indicated that they were comfortable doing the units, felt their knowledge after reading the unit guide was adequate to do the units, and believed that their students were successful in completing the design challenges (Carson & Campbell, 2007b).

Teachers are Satisfied with Professional Development Programs

EiE staff have offered hundreds of professional development programs to thousands of teachers and have also trained hundreds of teacher educators who do EiE professional development in diverse localities across the country. Professional development may range from a program that is two hours to one that is more than two weeks in length.

Teachers consistently express a high degree of satisfaction with EiE professional development services. They strongly agree that workshops are well planned and structured, that they are learning by doing, and that the EiE units and materials are presented in a manner that helps them feel comfortable using them in their classroom. The workshops, they feel, prepare them to do an engineering project in their classroom (Faux, 2007).

Teacher Gains in Knowledge of Engineering and Technology

Teachers also report large gains in their engineering knowledge and understanding as a result of participating in professional development programs and using EiE. They indicate significant increases in their knowledge and understanding of the range of engineering disciplines, what engineers do, and the pervasiveness of engineering in our society. Teachers report they are more knowledgeable about how engineering is practiced as well: they understand that there is not necessarily one "right" answer for engineering problems, they know about the engineering design process, they know more about the types of constraints that influence the design and selection of engineering criteria, and they are more confident in their ability to analyze the engineering solutions that their students might generate (Faux, 2007). Their understanding of engineering changes as well; after participating in EiE, the number of teachers including design, problem solving, and process/design process as part of their definitions of engineering increased dramatically (Carson & Campbell, 2007a).

Teachers' open-ended responses about engineering and technology were closer to standards-based definitions on a post-survey than on a pre-survey, after participating in EiE professional development workshops and teaching at least one EiE unit. Before participating in EiE, teachers were more likely to define technology in terms of examples, particularly tools, machines, computers and electronics, and less likely to define technology as a solution to a problem, or something designed or invented. Also before participating in EiE, teachers were slightly more likely to identify engineering as building or constructing, and less likely to define it as problem solving, a process in itself, having to do with improving things and processes, and having to do with math and / or science. Teachers also reported making greater use of engineering concepts and examples, including the engineering design process, across STEM subjects after participating in EiE (Christine M. Cunningham et al., 2010).

Teachers Report Changes in Their Pedagogy as a Result of EiE

Teachers report changes in their pedagogy after learning about EiE and teaching it in their classrooms. Interestingly, teachers report changes in their engineering teaching, their science and math teaching, and their pedagogical strategies more generally. Such changes, particularly across such a wide range of fields, are rare in education and professional development.

After participating in EiE, teachers significantly increase their use of engineering in their teaching in both science and other content areas. Particularly large increases were found in the frequency with which teachers describe engineering careers to their students, use engineering examples in science lessons, and, most impressively, use an engineering design process in their science classes. They also discuss the courses and skills needed to enter engineering. Teachers are also significantly more apt to use an engineering design process in other areas—in math lessons and science lesson as well as content areas outside of math and science (Faux, 2008).

For years, educators have been trying to help teachers develop children's problem-solving capacity. EiE seems to offer one successful possibility. External evaluations (Carson & Campbell, 2007a; Faux, 2007) have found that teachers report changes in their pedagogical strategies. After participating in EiE, teachers significantly increase their use of problem-solving strategies not explicitly related to engineering in their teaching. After using EiE, teachers evince improved attitudes toward problem-solving strategies and use more inductive methods (Faux, 2006, 2008). They also significantly increase their use of four other problem-solving strategies. They were more likely to have students: ask what they know related to the topic being studied, use things from every-day life in solving problems, work on problems for which there is no immediately obvious method of solution, and explain how they solve complex problems (Faux, 2008).

Teachers report significant changes in their use of engineering examples and the engineering design process in science, math, and other content areas. They increase the time they spend on complex and open-ended problems with their students, and increase the amount of explanation of solutions they require of their students. Over the course of implementation the reasons teachers offer for wanting to do more engineering in the classes changes from not only introducing engineering to their students to also including more of a focus on problem-solving and on incorporating more real life topics.

One of the external evaluators ended his report “It is rather rare in education program evaluation to view such a large and far-flung undertaking be so consistently and strikingly successful as [the EiE summer workshops]. The data are clear in underscoring the truly stunning degree to which the workshop program met its core objectives. Participants spoke effusively and often of the tremendous gains they had made, the revelatory quality of their newfound appreciation for engineering, and the clarity of their understanding on how to introduce EiE materials in their classrooms” (Faux, 2007).

Out of School Time Curricula

We use data collected from EiE’s out-of-school-time (OST) curricula primarily for formative evaluation. During pilot testing of the Engineering Adventures (EA) units (designed for 3rd-5th graders) and the Engineering Everywhere (EE) units (designed for 6th-8th graders), educators complete extensive feedback forms and administer a modified version of the Engineering Attitudes instrument to children participating in their afterschool or camp program. We also collect the engineering journals that children are provided during the experience. The feedback from educators and site observations directly inform revisions of the curricula prior to public release.

Educators rate the OST units very highly. Surveys of 118 people downloading the Bubble Bonanza EA unit showed 95% of downloaders rating the unit’s ease of use as a 5, 6, or 7 on a 7 point scale (1 = “not at all easy,” 7 = “very easy”). Those surveyed also rated the overall quality of the unit as high, with 100% of survey respondents rating the unit a 5, 6, or 7 (1 = “very low quality,” 7 = “very high quality”). All respondents indicated that they would also like to implement other EA units (Higgins, Hertel, Lachapelle, & Cunningham, 2013). Similar surveys are being gathered from downloaders of other EA units and will be also be implemented for the EE units when they are available for download.

The data collected from the Engineering Attitudes instrument suggests that children participating in EA units may experience similar changes to children using EiE. Children participating in EA pilot testing in camps during the summer of 2012 showed a significant increase from pre- to post-test in agreement with the statements “I would enjoy being a scientist when I grow up,” “I would enjoy being an engineer when I grow up,” and “Engineers help make people’s lives

better as part of their jobs” (n=476) (Higgins et al., 2013). Further analysis is currently underway on the attitudes data from EA and EE.

Qualitative analysis of the journals also suggests that participating in EA’s design challenges supports children’s practice of developmentally appropriate engineering practices. Most children participating in the Bubble Bonanza EA unit were able to make designs that met their stated goals, and nearly all of them seemed to incorporate what they learned while exploring the properties of the materials (Higgins et al., 2013). Anecdotal evidence gathered while observing the culminating showcase of the design challenges reinforces that children are authentically engaging in engineering practices and reflecting on the engineering design process while participating in EA.

Other Research

We are fortunate that other researchers across the country have begun to use and study the EiE program—we plan to enrich our program with results of their studies. Two of these studies are briefly described below.

A small, qualitative study in low-income high-minority urban settings in North Carolina is exploring how student and teacher ideas of “smartness” in the classroom may change as students and teachers begin to engage with EiE (Hegedus, Carlone, & Carter, 2014). Students considered “smart” in engineering exhibited different qualities (e.g. persistence, creativity) than those considered “smart”—high achievers—more traditionally. This led to some students who were low or moderate achievers generally becoming considered “smart engineers”, surprising their teachers and other students.

A mixed-methods study focused on teachers’ and students’ views of failure in the context of the classroom and new implementation of engineering (Lottero-Perdue & Parry, 2014). Researchers interviewed 38 teachers who were randomly assigned to implement either EiE or a comparison engineering curriculum about their perspectives on failure and found that while failure is something teachers generally want to avoid in education, as it is generally associated with assessment and accountability, the experience of implementing engineering in the classroom may lead teachers to reconsider how they think about the concept of failure, especially as it may lead to growth and valuable learning experiences. “Failure” as a term has different meanings and connotations in the contexts of education and engineering, and teachers struggled with this cultural shift.

Ongoing Efforts

EiE staff and external evaluators continue to evaluate and research the Engineering is Elementary project. Student assessment continues as part of the development process to ensure that each unit as designed and implemented can,

in fact, meet its stated learning objectives. EiE's evaluation process continues to evolve (Lachapelle & Cunningham, 2010). A number of the pilot studies reviewed here have revealed very interesting, sometimes unanticipated effects of the EiE materials and professional development and merit detailed, larger-scale studies that we hope to conduct. We are currently undertaking a rigorous, NSF-supported efficacy study that further examines EiE impacts on students and teachers by making direct comparisons with other curricula. Results of this study will be available by 2017.

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Project Design Methodology to Achieve Desired Objectives



Strategies to Improve Educational Outcomes

Interdisciplinary Literacy Specialists (ILS)

ILSs will work with the Family Resource Centers to provide early literacy services (including pediatric) & school wrap-around services to support a well-rounded education. ILSs are trained educators who coordinate with school, project staff, district administrators, school community leaders, teachers, parents, & key community stakeholders to assess needs & develop models and plans to provide levels of interdisciplinary literacy support for students & families.

Literacy STEM Leaders (LSL) 1

School teachers who are literacy leaders in the classroom and understand the vision to enhance effective school library programs and services. Schools, community stakeholders, and families all correlate with the Literacy STEM Leaders to support school library programs for students and families. Will provide high-quality books on a regular basis to children from low-income communities.

TCS Library Programs & Services 2

TCS will work with each school media center & school librarian to promote community STEM literacy events, free books for children & adolescents from low-income communities, parent involvement, Kindergarten Readiness, quality professional development for librarians, resources for digital literacy & financial literacy, & promote the foundation for a paradigm shift for literacy action plans, school culture, & literacy foundations.

AP1 Absolute Priority 1

1 Coordination with school libraries, book distributions, and childhood literacy activities.

AP2 Absolute Priority 2

2 Coordination with school libraries, book distributions, and childhood literacy activities.

Integrated Project Supports & Activities

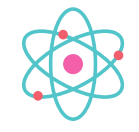
Interdisciplinary Literacy Specialists



Literacy STEM Leaders



STEM Literacy Academies



Literacy / Pediatric Services



Reading Apprenticeship



First Book 1



Engineering is Elementary



Library STEM 1 Literacy Kits



Southern Regional Education Board



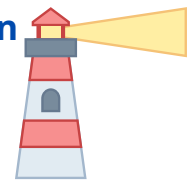
University of Alabama In-Service Center



High-Quality Free Books 1



School Librarian Professional Development



Whole-Student Supports 2



Community Engagement 2



Evaluation to Proven Success & Reflection

1. Needs Assessment: Analyze multiple sources of data to identify the key needs of the school, individual students, & the community. Survey staff, parents, & students. Determine the current level of services to address birth through 12th-grade literacy needs.

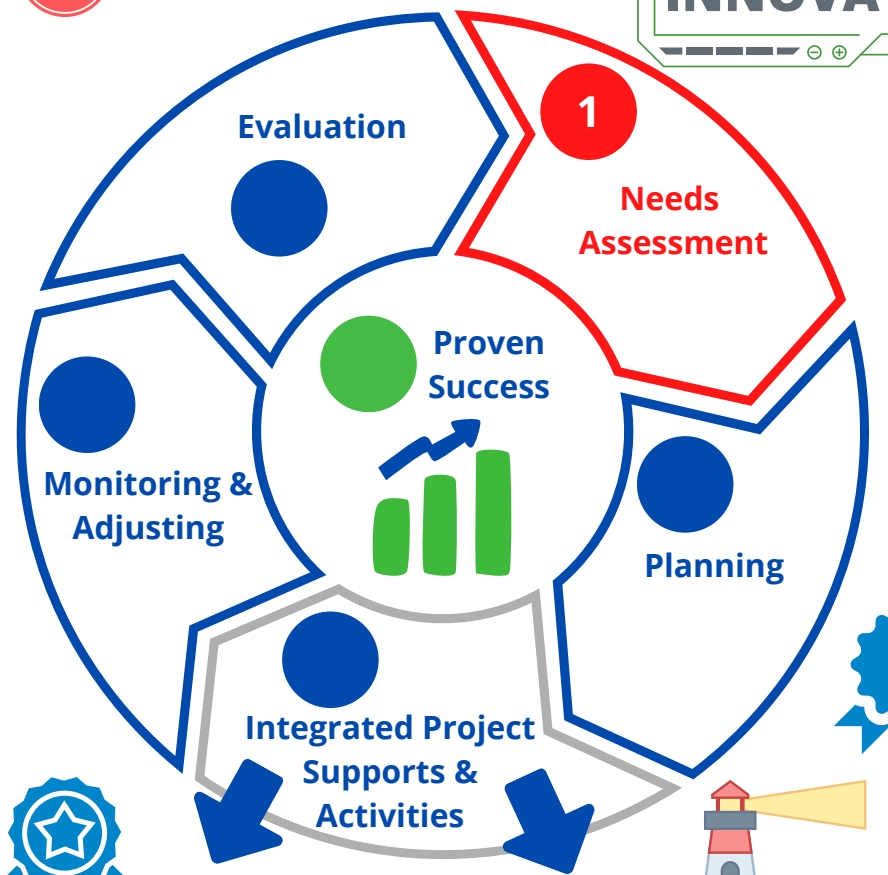
2. Planning: Program staff leads their school support teams to develop a plan to prioritize supports that address school library programs, literacy services, pediatric literacy programs, & free books to provide student opportunities—coordination of community services to increase access to families in need.

3. Integrated Teacher Supports: Program staff, Leaders, & partners deliver whole-student supports to schools, students (birth through 12th grade) & families. Provide up-to-date materials & books to high-need schools to increase reading motivation, performance, & frequency. Services, programs, & professional development opportunities are implemented.

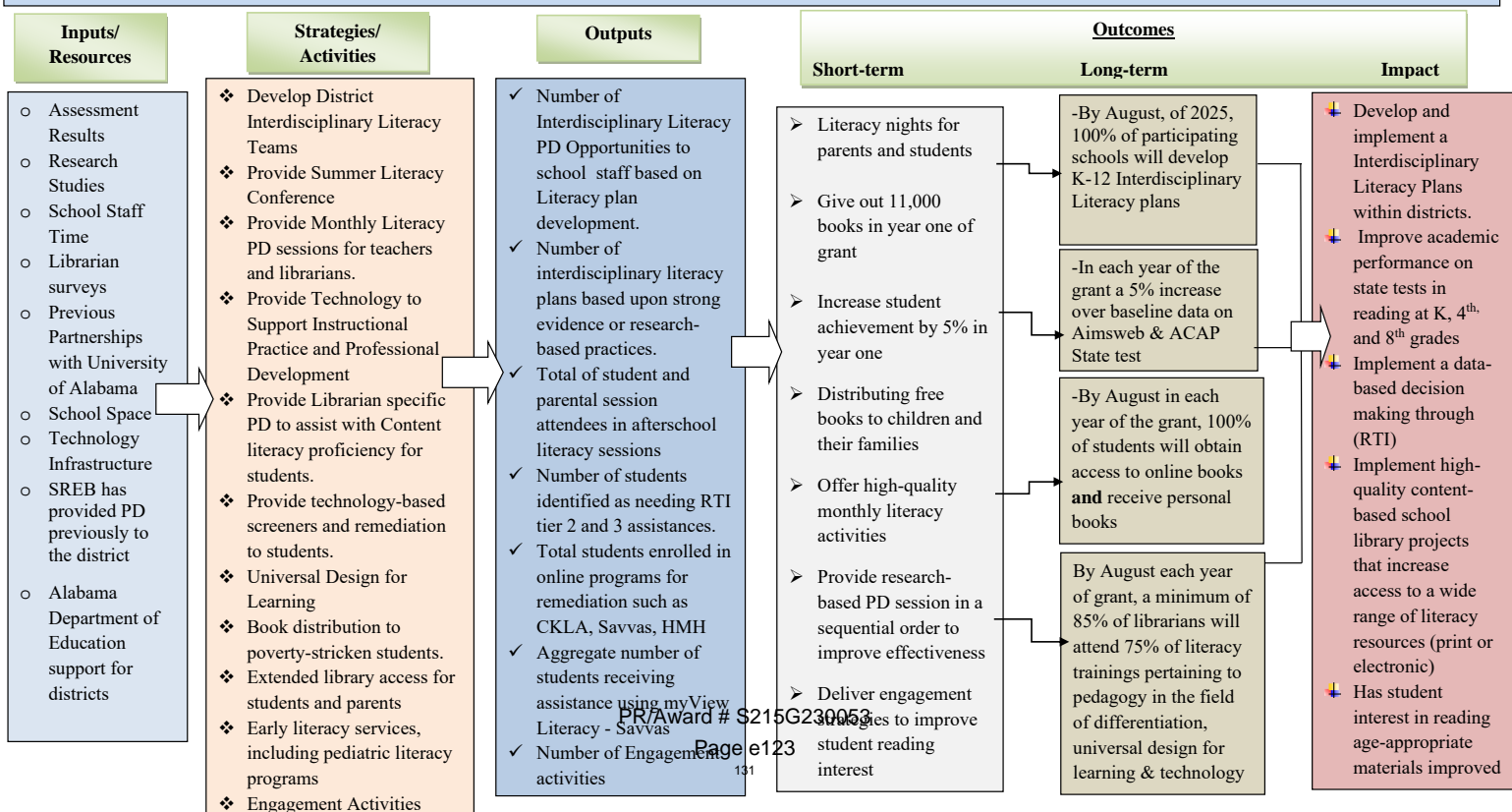
4. Monitoring and Adjusting: Program staff continuously monitor the analysis of program outputs with early childhood programs, school & out-of-school time, literacy transition programs, family & community engagement, pediatric services, community-based needs, & whole-student supports.

5. Evaluation: Continuous improvement assessment of partners & student supports by the TCS Learning Supports teams, Project staff, & the evaluation team to demonstrate results and improve practices—reflection on data analysis collected through advisory teams.

6. Proven Success: Increase in academics, positive behaviors, & improvement in attendance for schools. More children are prepared for Kindergarten, achieving academically, feeling safe, healthy, & supported by engaged parents. Literacy engagement with leaders, students, & families is evident.



Project IVOVATE - Logic Model - Problem Statement: Due to the high poverty rates within the targeted area in Tuscaloosa, Alabama, large percentages of students are not reaching proficiency on state testing compared to their peers and schools do not have the necessary supplies or training to create systemic interdisciplinary literacy plans, motivate students to read in all content areas or distribute books to families who cannot afford them.



Project INNOVATE 5 Year PD\Management Timeline

Date	Milestones	Persons Responsible
December 2023	Overdrive online book PD session for all schools to setup website for student access of online books and magazines in all discipline areas.	Project Director, Overdrive staff, administrators, and teachers
Jan 2124	SREB Project staff will lead a district session on Action Steps to create a school-wide Interdisciplinary Literacy Plans to literacy teams from each school.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center,
	Librarian Literacy PD Topic: Read / Think / Write / Publish The power of publishing will enable students to think like writers, to apply their learning strategies and to organize and express their learning.”	Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
February 202	Literacy team meetings within district Interdisciplinary Literacy Specialists; Topic: RTI implementation Screening, Monitoring and Prevention	Interdisciplinary Literacy Specialists, participants, Administrators, ALSDE consultant
March 2024	SREB staff will lead a second session for all schools on further development of Literacy plans. On an additional day,	Project Director, SREB staff, administrators and teachers, Librarians, University of

	<p>Southern Regional Education Board will lead middle and high school staff on how to implement the Literacy Design Collaborative in to the Actions Plans</p> <p>Librarian Literacy PD Topic ‘Rigor, Relevance and Reading for High Performing Students</p>	<p>Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
April 2024	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists; Topic: Developing an Academic Plan for Tier 2 and 3 students</p>	<p>Interdisciplinary Literacy Specialists, Literacy STEM Leaders, participants, Administrators, ALSDE consultant, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist,</p>
<p>Summer 2024 June & July</p>	<p>A 4-day literacy conference will be held at a central location for participating schools with sessions, but not limited to, RTI implementation, Phonics and word study, Literacy Support Strategies,</p>	<p>University of Alabama In-Service Center, National Non-Profits Southern Regional Education Board, Reading Apprenticeship, CKLA, Savvas, HMH, Alabama</p>

	Begin Level 1 Reading Apprenticeship class	Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
August 2024	SREB staff will meet with individual school to monitor school-wide Literacy Plans in literacy teams from each school. Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders. Topic: Strategies for Supporting Struggling Readers	Interdisciplinary Literacy Specialists, Literacy STEM Leaders, participants, Administrators, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist,
September 2024	Southern Regional Education Board will lead real-time coaching observations within classrooms with Literacy Community Coordinators and Administrators. Results will be presented to staff and a school wide walk-through instrument will be developed to allow administrators time	SREB, Interdisciplinary Literacy Specialists, Literacy STEM Leaders participants, Administrators, ALSDE consultant, Librarians, University of Alabama In-Service Center, Alabama Literacy Leadership

	<p>Librarian Literacy PD: Digital Publishing – Academic Success for Struggling Readers and Writers</p>	<p>Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>October 2024</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists; Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p> <p>Topic: Reading Fluency, Engaging Readers</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>November 2024</p>	<p>Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS literacy coaches and Administrators.</p> <p>Librarian Literacy PD Topic: Video Mastery</p>	<p>Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center</p>
<p>December 2024</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists;</p> <p>Topic: Effective Collaboration Models Between Libraries and classroom teachers</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>

January 2025	Southern Regional Education Board will lead real-time coaching observations within classrooms with KEDC literacy coaches and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Implementing the Alabama Literacy Initiative	
February 2025	Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders Topic: Strategies for Reaching Underrepresented Groups in the Content Area	Interdisciplinary Literacy Specialists, Literacy STEM Leaders participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
March 2025	Southern Regional Education Board will lead real-time coaching observations within classrooms with literacy community coordinators, Literacy STEM Leaders and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Emerging Tech for School Librarians in the content area	

<p>April 2025</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders</p> <p>Topic: Motivating Students to Read</p> <p>Content Area texts!!</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>May 2025</p>	<p>Progress monitoring for Tier 2 and 3 placement of year two implementation</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>Summer 2025</p>	<p>A 4-day literacy conference will be held at a central location for participating districts with sessions, but not limited to, Independent Reading, Guided Reading, Working with Struggling Readers, Academic Vocabulary, Differentiation, Reading Apprenticeship level two classes</p>	<p>University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist, National Non-Profits of the Southern Regional Education Board,</p>

		Overdrive, CKLA, Savvas, HMH
August 2025	<p>SREB staff will meet with individual schools to monitor school-wide Literacy Plans in literacy teams from each school. Literacy team meetings within district by Interdisciplinary Literacy Specialists and Literacy STEM Leaders.</p> <p>Topic: No Tears for Tiers: Implementing the CCSS Tiered Vocabulary in Your Classroom</p> <p>Librarian Literacy PD Topic: Reaching Underserved Communities and Underrepresented Populations</p>	<p>Interdisciplinary Literacy Specialists, Literacy STEM Leaders, participants, Administrators, Librarians, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
September 2025	<p>Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS Interdisciplinary Literacy Specialists, Literacy STEM Leaders. and Administrators.</p>	<p>Project Director, SREB staff, administrators and teachers, Interdisciplinary Literacy Specialists, Literacy School Leader, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading</p>

		Initiative, Alabama Regional Literacy Specialist
October 2025	Literacy team meetings within district by Interdisciplinary Literacy Specialists; Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist Topic: STEM Programs in your Community: Focusing on Equity	Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
November 2025	Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS literacy coaches and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Amazing Resources for Educators	
December 2025	Literacy team meetings within district by Interdisciplinary Literacy Specialists; Topic: 21st Century Visions of STEM Learning in School Libraries	Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist

January 2026	Southern Regional Education Board will lead real-time coaching observations within classrooms with KEDC literacy coaches and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Implementing the Alabama Literacy Initiative	
February 2026	Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders Topic: Case Studies of Successful STEM Implementation in Libraries	Interdisciplinary Literacy Specialists, Literacy STEM Leaders participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
March 2026	Southern Regional Education Board will lead real-time coaching observations within classrooms with literacy community coordinators, Literacy STEM Leaders and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Emerging Tech for School Librarians	

<p>April 2026</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders</p> <p>Topic: Motivating Students to Read in the Content Area!!</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>May 2026</p>	<p>Progress monitoring for Tier 2 and 3 placement of year two implementation</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>Summer 2026</p>	<p>A 4-day literacy conference will be held at a central location for participating districts with sessions, but not limited to, Using Multiple Texts, Balance Literacy, Building effective Classroom Libraries. Reading Apprenticeship level 1 & 2 trainings</p>	<p>University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist, National Non-Profits of the Southern Regional Education Board,</p>

		Overdrive, CKLA, Savvas, HMH
August 2026	SREB staff will meet with individual schools to monitor school-wide Literacy Plans in literacy teams from each school. Literacy team meetings within district by Interdisciplinary Literacy Specialists and Literacy STEM Leaders. Topic: Collaborative Teaching	Interdisciplinary Literacy Specialists, Literacy STEM Leaders, participants, Administrators, Librarians, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
	Librarian Literacy PD Topic: Effective Collaboration Models between Libraries and Classroom Teachers	Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
September 2026	Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS Interdisciplinary Literacy Specialists, Literacy STEM Leaders. and Administrators.	Project Director, SREB staff, administrators and teachers, Interdisciplinary Literacy Specialists, Literacy School Leader, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist

<p>October 2026</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists; Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p> <p>Topic: Keys to Beginning Reading</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>November 2026</p>	<p>Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS literacy coaches and Administrators.</p> <p>Librarian Literacy PD Topic: Strategies for Reaching Underrepresented Groups in Interdisciplinary Literacy</p>	<p>Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center</p>
<p>December 2026</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists;</p> <p>Topic: STEM in the Public Library — Start Small, Grow Big!</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>January 2027</p>	<p>Southern Regional Education Board will lead real-time coaching observations</p>	<p>Project Director, SREB staff, administrators and teachers,</p>

	<p>within classrooms with KEDC literacy coaches and Administrators.</p> <p>Librarian Literacy PD Topic: Close Reading</p>	<p>Librarians, University of Alabama In-Service Center</p>
February 2027	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders</p> <p>Topic: Making Parents Parnters</p>	<p>Interdisciplinary Literacy Specialists, Literacy STEM Leaders participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
March 2027	<p>Southern Regional Education Board will lead real-time coaching observations within classrooms with literacy community coordinators, Literacy STEM Leaders and Administrators.</p> <p>Librarian Literacy PD Topic: Empowering Public Libraries to be a Content Area Resource Centers for Their Schools</p>	<p>Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center</p>

<p>April 2027</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders</p> <p>Topic: STEM Project for Library Summer Reading Club</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>May 2027</p>	<p>Progress monitoring for Tier 2 and 3 placement of year two implementation</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>Summer 2027</p>	<p>A 4-day literacy conference will be held at a central location for participating districts with sessions, but not limited to, CKLA, Savvas, HMH and Technology Integration to stimulate reading and writing through Google classroom and Literacy Design Collaborative.</p>	<p>University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist, National Non-Profits of the Southern Regional Education Board,</p>

		Overdrive, CKLA, Savvas, HMH
August 2027	SREB staff will meet with individual schools to monitor school-wide Literacy Plans in literacy teams from each school. Literacy team meetings within district by Interdisciplinary Literacy Specialists and Literacy STEM Leaders. Topic: Content-specific model of reading	Interdisciplinary Literacy Specialists, Literacy STEM Leaders, participants, Administrators, Librarians, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
	Librarian Literacy PD Topic: Research-based strategies and assessments	
September 2027	Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS Interdisciplinary Literacy Specialists, Literacy STEM Leaders. and Administrators.	Project Director, SREB staff, administrators and teachers, Interdisciplinary Literacy Specialists, Literacy School Leader, University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading

		Initiative, Alabama Regional Literacy Specialist
October 2027	Literacy team meetings within district by Interdisciplinary Literacy Specialists; Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist Topic: 3D Printing for every content classroom.	Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
November 2027	Southern Regional Education Board will lead real-time coaching observations within classrooms with TCS literacy coaches and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Amazing Resources for Educators	
December 2027	Literacy team meetings within district by Interdisciplinary Literacy Specialists; Topic: Building Knowledge and Vocabulary: Reading Complex Text Across the Content Areas	Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist

January 2028	Southern Regional Education Board will lead real-time coaching observations within classrooms with KEDC literacy coaches and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Strategies to Develop Critical Readers	
February 2028	Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders Topic: Growing Scientists: Community Engagement for Preschoolers and Families through STEM	Interdisciplinary Literacy Specialists, Literacy STEM Leaders participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist
March 2028	Southern Regional Education Board will lead real-time coaching observations within classrooms with literacy community coordinators, Literacy STEM Leaders and Administrators.	Project Director, SREB staff, administrators and teachers, Librarians, University of Alabama In-Service Center
	Librarian Literacy PD Topic: Phonics: Systematic and Explicit Instruction	

<p>April 2028</p>	<p>Literacy team meetings within district by Interdisciplinary Literacy Specialists & Literacy STEM Leaders</p> <p>Topic: Get the Picture: Visual Literacy in Content-Area Instruction</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>May 2028</p>	<p>Progress monitoring for Tier 2 and 3 placement of year two implementation</p>	<p>Interdisciplinary Literacy Specialists, participants, Administrators, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist</p>
<p>Summer 2028</p>	<p>A 4-day literacy conference will be held at a central location for participating districts with sessions, but not limited to, Literacy Design Collaborative, Research-based strategies and assessments SREB final Content Areas Literacy Training, Reading Apprenticeship Levels 1 & 2 training and Level 3 coaches training to build sustainability</p>	<p>University of Alabama In-Service Center, Alabama Literacy Leadership Specialist – Alabama Reading Initiative, Alabama Regional Literacy Specialist, National Non-Profits of the Southern Regional Education Board,</p>

		Overdrive, CKLA, Savvas, HMH
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Project Staff Qualifications and Job Descriptions Chart

Position: Project Director * See Resume in Appendix		FTE 1.0
<u>Responsibilities:</u> Direct all program activities and services; interviews and recommends staff; supervises and evaluate project staff at all levels; writes job descriptions for Project; initiates all purchase orders; initiates all contracts; coordinates professional development activities; works with TCS's business and personnel managers budget	<u>Qualifications:</u> Master's degree in Administrative Education; evidence of leadership; experience in providing professional development; strong interpersonal skills, experience with grant budgets; at least five years overall experience	
Position: Interdisciplinary Literacy Specialists -(2) positions-*To be Hired- 2@ 1.0 FTE		
<u>Responsibilities:</u> Coordinates, participates in, and facilitates professional development implementation in increasing access to Literacy and RTI activities/resources; Works with staff on coordination and data collection; assists in managing professional development institutes, workshops, summer academies, other events, and materials development	<u>Qualifications:</u> Minimum of a teaching certificate and administrative duties preferred; evidence of leadership & providing PD; strong theoretical knowledge of academics/pedagogy; at least five years' experience providing PD to teachers or other professionals; ability to lead collaborative professional learning	
Position: Literacy STEM Leaders - (30) positions - Stipend position estimated @0.2 FTE *To be Hired		
<u>Responsibilities:</u> These positions will be the feet on the ground on a daily basis providing	<u>Qualifications:</u> Minimum of a teaching certificate; evidence of leadership &	

<p>strategies and support to other staff members.</p> <p>Duties will include assisting in lesson plan development, providing strategies learned in trainings, observations, book selection and working with the librarians to provide an inclusive, supportive, and identity-safe learning environments for students</p>	<p>providing PD; strong theoretical knowledge of academics/pedagogy; ability to lead collaborative professional learning</p>
<p>Position: Evaluator</p> <p><i>*See Resume for Dr. David Barnett, Thomas Mills</i></p>	<p>Qualifications: Ph.D. or master's in education, 10 years of successful grant evaluation, and members in good standing with American Evaluation Association</p>
<p>Responsibilities: Fidelity in the evaluation of project goals and objectives; disaggregates project GPRA data as outlined in the evaluation design; advises Advisory Committee; quantitative and qualitative data; summative data on lesson plan reviews and professional development evaluations; facilitation of GPRA annual reports related to project objectives.</p>	<p>Qualifications: Doctorate or Master's Degree in Instructional Leadership, experience with grants evaluation and data analytics, expertise in randomized controlled evaluation trials; 30 years of Federal grants evaluation, management; certified grant specialist, members of American Evaluation Association</p>
<p>*Resumes in Appendix</p>	

ANDREW X. MAXEY

EDUCATION

2015-2020	University of Alabama	Doctor of Philosophy, Instructional Leadership
2003-2005	San Diego State University	Master of Arts, Educational Leadership
2001-2004	University of San Diego	Various professional development courses
	University of California San Diego	
	National University	
1995-1999	Indiana Wesleyan University	Bachelor of Science, English Education

CREDENTIALS & CERTIFICATIONS

2015	National Board Certified Teacher (renewed)
	English Language Arts, Early Childhood through Young Adulthood
2017	Alabama Educational Administrator Certificate (Class A)
2017	Alabama Professional Educator Certificate (Class B)

PROFESSIONAL ORGANIZATIONS

Alabama Association of Middle Level Educators (president)
Alabama Association for Supervision and Curriculum Development (board member)
Alabama NBCT Network
Alabama School Library Association
Council of Leaders in Alabama Schools
National Board for Professional Teaching Standards
National and Alabama Association of Secondary School Principals
National Association for Supervision and Curriculum Development

PROFESSIONAL PRESENTATIONS (selected)

Feb 2013	Classroom Assessment – EdCamp Birmingham
June 2013	How We Learned to Stop Worrying and Love the Technology – AETC
Jan 2014	The Case for Social Media; The Leadership Imperative for NBCTs – ALNBCT Conference
April 2014	Making the Case for Grading Reform – UA College of Education Faculty
July 2014	How to Keep Public Education off the Endangered Species List (keynote) – TechMeet Tuscaloosa
Nov 2014	Understanding Classroom Assessment Changes Everything – AMLE national conference
Jan 2015	Advocacy Panel; Assessment Panel – ALNBCT Conference
Nov 2015	Pancake Your Pyramid by Leading from the Middle – AMLE national conference
Jan 2016	When Grades Don't Add Up: Making the Case for Change – ALNBCT Conference
	Sun Tzu, Ender Wiggin and Albus Dumbledore on Leadership
Mar 2016	Pocket PR for Principals – ALSPRA Conference
Jan 2017	Making the Case for Middle School as Priority – ALNBCT Conference
	Standards-based Grading: Ethics, Equity, and Social Justice
June 2017	Shared Leadership for Digital Transformation – ISTE (accepted)
June 2017	Transforming Middle School Practice Through Instructional Technology – AETC
July 2017	Making the Case for Social Media as a Leadership Tool – MEGA Conference
Aug 2017	Making Middle Grades Matter (keynote) – Shelby County Schools Institute Day
Dec 2017	Disrupting the Status Quo – ACTE Career Tech VISION
Jan 2018	Be the One (keynote); Grading Reform 101; Making Libraries the Heart of Literacy and Learning – ALNBCT Conference
June 2018	Making Libraries Matter (keynote) – ASLA Summer Conference

Oct 2018	Social Media for Professionals – invited speaker; four day workshop hosted by West Africa Theological Seminary, Lagos, Nigeria
Nov 2018	Making Libraries the Heart of Learning – AMLE National Conference
Jan 2019	When our Grades Don't Add Up – Alabama ASCD Winter Conference
July 2019	Building Accomplished Middle Level Practice; Help! We Are Ready to Change Our Grading Practices – MEGA Conference (Alabama State Department of Education Summer Conference)
Aug 2019	Making the Case for Grading Reform – invited speaker, Phenix City Schools
Oct 2019	How we made summer learning core to our district strategy – NSLA Annual Conference
Nov 2019	Preventing Achievement Gaps: Summer Learning as A Core Strategy! – AMLE National Conference
Jan 2020	Yeah, but! (Addressing the doubt, objections, and barriers to Standards Based Grading); The School Improvement Cinderella your school already has - ALNBCT Conference
Feb 2020	Summer Learning: New Core Strategy for Closing Our Achievement Gaps – AASA National Conference
June 2020	The Pandemic Wrecked My Grading Practices! – University of Alabama In-Service Center Webinar
Nov 2020	Why Should I be Thinking about Grading During a Pandemic? – NBPTS webinar
Feb 2021	Summer Learning to Extend Opportunities for Students – Doing What Matters for Alabama's Children Conference
June 2021	The Elephant in the Classroom – The Complexity of Teaching; Summer Learning 101; 7 Things Every Middle Level Educator Should Know – MEGA Conference
July 2021	The State of Summer Learning – Nita M. Lowy 21 st Century Community Learning Centers Grant Program 2021 Summer Symposium

PUBLICATIONS

- Barron, L., & Maxey, A. (2019, May/June) Growth is the Goal: Dos and Don'ts of Teacher Observations and Evaluations. *Principal*, 42(3).
- Hancock, E., Kilgore, L., & Maxey, A. (2016, January). Understanding Assessment Changes Everything. *AMLE Magazine*.
- Maxey, A. (2020, Nov). A Bronze Bullet We Already Have: School Libraries. *School Administrator*.
- Maxey, A. (2021). *The Elephant in the Classroom*. Rowman & Littlefield.
- Maxey, A. (2019, April). Middle School Matters! *AMLE Magazine*.
- Maxey, A., Bruinton, L. Summer Learning as a Catalyst for Change (accepted for publication by NAESP).
- Maxey, A. Daria, M. (2018, December). How to speak administrator: An Insider's Guide to Advocating for Libraries. *School Library Journal*.
- Maxey, A., Hancock, E. (2019, February). Transforming Middle School Practice Through Instructional Technology. *AMLE Magazine*, 7(1), pp. 5-9.

ADMINISTRATIVE LEADERSHIP EXPERIENCE

TUSCALOOSA CITY SCHOOLS

2020 – present	Director of Strategic Initiatives	Tuscaloosa, Alabma
2017-2020	Director of Special Programs Lead for community-wide transition to national summer learning model. Coordinate school system planning for all aspects of summer learning Design, lead system National Board initiatives including candidate support systems, planning and strategy: teacher leadership initiatives, human resource strategies, etc System liaison for libraries. Lead initiative for funding to fully restore all library collections System thought-partner and coordinator for middle school planning	Tuscaloosa, Alabama

2015 - 2017 Director, Middle School Education Tuscaloosa, Alabama
 Lead implementation of full middle school structures and best practices including teaming student advocacy programs and developmentally appropriate practices at all schools
 System lead for planning and coordinating Summer Learning
 Design and coordinate system level professional development for middle schools
Lead design and implementation of emphasis on “learning by doing” and hands-on learning
 Support realignment of middle schools including multiple school merges over three years
 Designed, lead system-wide support system for candidates for National Board Certification
 System lead and contact for textbook adoption
 System leadership for digital transformation, rethinking school and other efforts/initiatives

ROCK QUARRY MIDDLE SCHOOL

2011-2015 Principal Tuscaloosa, Alabama
 Led systematic change in all areas of the school including (but not limited to) culture, academic achievement, technology integration, collaboration, service, student services
 Reversed trend of regression on standardized tests; ultimately outperforming magnet program
 Improved community relations; trend of increasing withdrawals for private school reversed
 Created a culture of thoughtful, ubiquitous use of technology as a learning tool
 Focused on teacher recruitment, growth and mentoring

- Two system-wide Teacher of the Year winners
- National Board Certified Teachers increased from two to nine
- Grade level of documented concern restructured; receiving state and national recognition
- Teachers from all contents/grade levels present at state and national conferences

 Lead on-going school-wide professional learning focused on highly effective grading practices
 Nurtured culture of service; school-wide project focused on building a school in Nigeria
 Provided system-level leadership through committee work and collaboration with peers/colleagues
Established school’s identity as a demonstration school; hosted frequent visits from schools/systems
 Developed professional voice and advocacy through state and national presentations, blogging, professional writing, participation in collaborative efforts and advocacy committees

NORTHRIDGE HIGH SCHOOL

2009-2011 Assistant Principal Tuscaloosa, Alabama
 Lead development of practices to build school culture (tardies, passes, focus on relationships)
 Organized PBS committee; leadership contributed to reduction in office referrals/suspensions
 Served as STARS Academy liaison; ensured equitable services for students in alternative program
 Initiated professional learning communities addressing specific needs (i.e. classroom assessment)
 Hands-on administrative liaison in multiple areas (Special Education, state testing, technology, etc.)
 Specialized in human resource/organizational duties (i.e. duties, scheduling, lunch, etc.)

ROCK QUARRY ELEMENTARY

2008-2009 Assistant Principal Tuscaloosa, Alabama
 Spent 10 hours+ in classrooms weekly observing/participating in instruction and learning
 Led process of establishing National Junior Honor Society chapter
Refocused school’s approach to discipline, reducing office referrals by 40%
 Coordinated revamping of school-wide PBS program
 Participated in grade level meetings and data meetings
 Served as LEA and parent liaison for MET/MEDC and special education meetings
 Supported various student- and teacher-led projects and initiatives; Rocket Readers, round-table reading (student-driven book discussion), school-wide recycling efforts, etc.

TEACHER LEADERSHIP EXPERIENCE

PAUL W. BRYANT HIGH SCHOOL Tuscaloosa, Alabama
2007-2008 Tuscaloosa City Schools System Mentoring Leadership Team
Site Mentoring Coordinator
Earth Nerds (CLAS Banner School award-winning environmental club) Sponsor
2006-2008 Alabama High School Graduation Exam Planning Coordinator
Language Arts Department Chair
Faculty School Improvement Plan Liaison
Faculty Advisory Committee
Professional Development Committee
2005-2006 SACS Quality Assurance Visitation Team (Tuscaloosa County High School)
Stampede-to-Read (multi-faceted school-wide reading program) Advisor, Committee Member

SOUTHWEST HIGH SCHOOL San Diego, California
2004-2005 21st Century Community Learning Centers, After School Program Coordinator
2003-2004 English 9 Academic Coach
Faculty Advisory Committee Department Representative
SAT9 (Stanford 9) Site Testing Co-Coordinator
School Modernization Committee
Summer 2003 English 9 Unit Plan Revision Team Leader
2002-2003 English Department Co-chair
Summer 2002 English 10 Unit Plan Writing Team Member
2002-2005 Environmental Club Sponsor
Christian Club Sponsor

PIONEER JR. SR. HIGH SCHOOL Royal Center, Indiana
2000-2001 Soccer Club Founder and Sponsor

TEACHING EXPERIENCE

2005-2008 Paul W. Bryant High School Tuscaloosa, Alabama
English 9 (Advanced and Regular), English 10 (Advanced and Regular), English 12 (Advanced)
2001-2005 Southwest High School San Diego, California
English 9, 10, and 12
Corrective Reading, Writer's Workshop, Dual Immersion English 9
Summer School 2002 and 2003
1999-2001 Pioneer Jr. Sr. High School Royal Center, Indiana
English 9, 11, and 12
Novels, British Literature, Expository Writing, Creative Writing

Interdisciplinary Literacy Leader

Definition

Provides guidance and professional development on topics relevant to interdisciplinary literacy acquisition and school readiness grades K-12; partners and collaborates with local agencies in the common work of promoting interdisciplinary literacy; provides schools and districts technical support in the implementation of curriculum integration; serves as a liaison between all school learning communities regarding issues of interdisciplinary literacy and school improvement.

Distinguishing Characteristics

The successful candidate is skilled in development and presentation of materials to a variety of stakeholder groups; demonstrates a deep understanding of how young children acquire literacy; has a strong understanding of the Interdisciplinary Literacy Standards grades K-12 and topics surrounding school readiness; has exemplary collaboration skills; shows evidence of research-based practices; understands and remains current on legislation and regulations regarding content area literacy programs; demonstrates a sense of humor and love of learning; is a skilled communicator with a variety of stakeholder groups.

Supervision Received and Exercised

General direction is provided by the Project Director or designee.

Examples of Duties and Responsibilities

Duties and responsibilities may include, but are not limited to, the following:

- Collaborate with department content experts to develop examples and resources for the effective instruction of early childhood literacy and school readiness;
- Conduct professional development for teachers of grades K-12 on effective strategies for the development of literacy for all children, including low income and English Learners populations;
- Meet with and partners with community agencies who are dedicated to providing quality preschool programs;
- Represent in community discussions regarding how best to provide effective early childhood programs;
- Participate in District Office staff and director meetings by attending regularly, initiating relevant agenda items, and sharing ideas and opinions as appropriate;
- Develop personal goals and objectives that support and are consistent with the goals of the Superintendent and the District Office;
- Establish and maintain clear communication and cooperative working relationships with clients, staff, other agencies, regional and state administrators through announcements, letters, newsletters, publications, telephone communication, attendance at meetings, and site visits;
- Maintain professional competencies in areas of responsibility, maintain contact with and participate in professional job-related organizations, and serve as a liaison to professional groups;
- Perform related duties as assigned.

Employment Standards

Knowledge of

- Best instructional practices for literacy development for all students preschool – grade 3;
- Topics related to the general field of Early Childhood Education and School Readiness;
- Familiarity with:
 - Standards in English/Language Arts a

- ELD/ELA Framework
- All relevant Curriculum Standards;
- Best practices for Interdisciplinary Literacy strategies
- K-12 learning theory and effective professional development practices, including consensus building, collaboration, and facilitation;

Ability to

- Develop consensus with groups from a variety of organizations;
- Synthesize large amounts of information; including current legislation as it pertains to early childhood education;
- Adjust presentation style, content, level of specificity etc. for varying stakeholder groups;
- Collaborate closely and frequently with department members;
- Communicate effectively and in a timely manner;
- Take direction and adjust performance based on input from supervisor;
- Express ideas and concepts clearly and concisely in both oral and written form; use language and medium appropriate to audience;
- Establish and maintain cooperative and professional working relationships with individuals, groups, public, and private agency personnel;
- Motivate, challenge, and guide others in the improvement of educational programs and county office services;
- Analyze data and situation(s), render judgment, make decisions, and solve problems efficiently and effectively;
- Maintain and improve professional skills and knowledge;
- Be flexible and embracing of change.

Education and Experience

Any combination of education and experience that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Education:

Masters Degree from an accredited college or university with an emphasis in Education or closely related field (preferred)

Credentials:

Appropriate valid Alabama Teaching Credential and valid

Alabama Administrative Services Credential (current or in progress) preferred

Experience:

- Five (5) or more years of directly related teaching and/or coaching experience in K-12 classrooms;
- Two (2) or more years as a program administrator/teacher-leader;
- Experience in leading or participating as a lead or team member on school, district, or regional projects or initiatives;
- Two (2) or more years of teaching experience in preschool classrooms (preferred);
- Bicultural and/or experience working with ethnically and culturally diverse populations is desirable.

School Literacy STEM Leader – JOB DESCRIPTION

Objective

Develop and implement a vision for improving standards of literacy across the school. Through expert coordination, the progress of all students' literacy proficiency will improve across all aspects of the curriculum.

Reporting to Project Director and School Principals

Responsible for Leading, managing and developing literacy across the school

Works with Curriculum Lead, Leadership Team, teaching/support staff, feeder primary schools, LA representatives, external agencies and parents

Main Duties

Operational/Strategic planning:

Develop a strategic vision for interdisciplinary literacy development
Devise a whole school literacy policy in consultation with a range of stakeholders
Ensure that schemes of learning and resources support the development of literacy in subject areas
Lead, develop and enhance the literacy teaching practice of others.
Co-ordinate literacy interventions for students
Liaise and collaborate with subject leaders regarding student literacy difficulties. Create appropriate action plans.
Support colleagues with selecting appropriate resources and techniques to support students with literacy difficulties. Provide training as needed.
Support the Teaching and Learning with evaluation of literacy practice across through lesson observations and learning walks.
Evaluate the effectiveness of the Whole School Literacy Policy and Literacy Development Plan. Revise as needed.
Lead the creation of a structured transition, ensuring all teaching responds to the Literacy needs of the pupils on entry.

Curriculum Provision:

To liaise with the Curriculum Team Leaders to ensure the delivery of an appropriate, comprehensive, high quality and cost-effective curriculum program that complements the school's strategic objectives.

Curriculum Development:

- To support curriculum development
- To keep up to date with national developments in teaching practice and methodology, and ensure they are embedded where appropriate.
- To ensure that Literacy is contextualized against real life scenarios and linked cross curricular.
- To actively monitor and respond to curriculum development and initiatives at national, regional and local levels.

Thomas Glenn Mills

Education

ADMINISTRATOR:

Rank I, ED. Specialist | July 2000 | University of Kentucky | Kentucky certificate for Instructional Leadership Supervision and Administration K-12 Certification

TEACHER:

Masters In Education, M.ED. | June 1998 | Georgetown College | middle school education, area: social studies

Bachelor of Arts | May 1991 | University of Kentucky | Middle School Education, grades 5-9, Specialization Areas Social Studies, Math and Reading

Education Experience

- 2014 to Present – Director of Technology\Chief Information Officer
- 2001 – 2014 – District Technology Resource Teacher\Network Analyst\Grant Writer
- 1991 – May 2001 – Teacher - Bourbon County Middle School, Social Studies & Math

Grant Experience

- Evaluator/Author for Youth Career Connect, Kentucky Ed. Development Corp, 2014 – present
- Evaluator /Author for Congressional/Presidential Academies, Kentucky Ed. Development Corp, 2018 - present
- Evaluator /Author for Academies for American History and Civics, Kentucky Ed. Development Corp, 2018 - present
- Evaluator /Author for Native Youth Community Projects (NYCP), Southeast Island District, Thorne Bay, AK, 2018 - present
- Evaluator/Author for Innovative Approaches to Literacy, Kentucky Ed. Development Corp, 2016 – present

- Evaluator/Author for two (2) Alaska's Native Education Program grants with Office of Elementary and Secondary Office of Indian Education, WorldWide IDEA, 2012 - present
- Evaluator /Author for Congressional/Presidential Academies, Kentucky Ed. Development Corp, 2016 - present
- Evaluator/Author Elementary and Secondary Counseling Grant, Gadsden City Schools, AL 2010, Bourbon County Schools, 2015 to present
- Evaluator/Author Elementary and Secondary Counseling Grant, Arlington Public Schools, Arlington MA, 2013-2017
- Evaluator/Author/Project Director for Emergency Response/Crisis Management, Bourbon County Schools, 2006-08
- Evaluator/Author/Project Director for Kentucky Math/Science Partnership, Bourbon County Schools, 2009-2012
- Evaluator/Author/Project Director for Teaching American History (Bourbon County Schools (2), Central Kentucky Educational Cooperative (2), Wilderness Trail Special Education Cooperative, Arlington Public Schools, MA, Bedford County Schools, TN.)
- Evaluators/Author for grants with Office of Elementary and Secondary Office of Indian Education
- Evaluator/Author for Student Drug Testing, Gadsden City Schools, AL 2009
- Evaluator/Author for Grants to Reduce Alcohol, Gadsden City Schools, AL 2009
- Evaluator/Author/Project Director for Math/Math to Achieve, 2007

Grant Work Experience

- Lead Evaluator and Project Evaluation Manager– National Evaluation Group, LLC, 2015 -present
- Lead Data Analyst and Research Associate– Ed Consulting, LLC, 2009 - present

Special Training

- Certified Grant Specialist 2005 - Research Associates
- Certified Grants Administrator, 2005 - Research Associates
- Kentucky Department of Education: The Kentucky Teacher Internship Program (KTIP)
- Kentucky Department of Education: Professional Growth and Evaluation of Certified Personnel
- Kentucky Department of Education: MUNIS and School Finance

- Kentucky Department of Education: Unit Planner Training

Professional Memberships

- American Evaluation Association
- American Grant Writers Association
- Grant Professional Association

Special Skills

- School and District Curriculum alignment
- Proven ability to develop and maintain working relationships with administrators, teachers, support staff and vendors
- With Director of Technology\Chief Information Officer position, have maintained budgets, filed federal reimbursement requests, maintained contacts with state engineers to secure state funding and purchase through procurement process.
- Have managed multiple grants of over \$3 million dollars during same funding period.
- Certified and Licensed HVAC technician

David Barnett, EdD

EDUCATION:

Educational Doctorate - Administration and Supervision, (August 1986)

Granting University *University of Kentucky, Lexington, KY*
Concentration *Educational Leadership*
Dissertation Title *Performance-Based Pay for Teachers:
Perceptions of Kentucky Principals*

Rank I Instructional Supervisor, (May, 1980)

Granting University *Morehead State University, Morehead, KY*
Concentrations *Educational Supervision, Curriculum and Instruction*

Master of Arts - Secondary Education, (May 1977)

Granting University *Morehead State University, Morehead, KY*
Concentration *Mathematics*

Bachelor of Science (December 1974)

Granting University *Morehead State University, Morehead, KY*
Major *Mathematics*
Minor *Data Processing*

RESEARCH INTERESTS:

- School Finance
- Effective Schools
- Turnaround and Sustainability
- Technology Integration in the Classroom

PROFESSIONAL EXPERIENCE:

Adjunct Professor – August 2017 to Present

Main Responsibilities: Teach doctoral students/candidates who are pursuing an EdD or PhD in Educational leadership.

Educational Consultant – July 2016 to Present

Main Responsibilities: Work with schools and educational cooperatives to provide quality control. Compare practices and policies with best practice research. Lead External Reviews, Diagnostic Reviews, and STEM Reviews for AdvancED

Founding Dean and Professor of Educational Leadership – January 2015 to July 2016

Main Responsibilities: Oversee all programs within the college, explore avenues for possible expansion of those programs
Patton College of Education
University of Pikeville, Pikeville, KY 41501

Professor and Director of EdD Educational Leadership Programs, August 2010 to December 2014

Main Responsibilities: Teach doctoral courses, direct doctoral program
Foundational and Graduate Studies in Education
Morehead State University, Morehead, KY 40351

Department Chair, July 2008 – August 2013

Main Responsibilities: Provide oversight and support for all departmental programs
Department of Foundational and Graduate Studies in Education
Morehead State University, Morehead, KY 40351

Interim Assistant Dean, July 2007 – June 2008

Main Responsibilities: NCATE, assisting with major student issues
College of Education
Morehead State University, Morehead, KY 40351

Associate Professor, July 2008 – August 2012

Main Responsibilities: Teach graduate courses for aspiring school leaders
Morehead State University, Morehead, KY 40351

Assistant Professor, January 2002 – June 2008

Main Responsibilities: Teach graduate courses for aspiring school leaders
Morehead State University, Morehead, KY 40351

Superintendent of Schools, July 2000 – January 2002

Main Responsibilities: Oversee all operations of the district
Bracken County Schools
Brooksville, KY 41004

Assistant Superintendent of Schools, August 1995 – June 2000

Main Responsibilities: Finance Officer, Personnel, and Policy
Rowan County Schools
Morehead, KY 40351

Superintendent of Schools, July 1990 – July 1995

Main Responsibilities: Oversee all operations of the district
Fleming County Schools
Flemingsburg, KY 41041

Assistant Superintendent of Schools, July 1988 – June 1990

Main Responsibilities: Secondary supervisor, vocational coordinator, personnel director,
policy and procedures oversight
Bourbon County Schools
Paris, KY 40361

Instructional Supervisor, July 1982 – June 1988

Main Responsibilities: Gifted Education, Testing Coordinator, Federal Programs
Coordinator, Professional Development, Certified Evaluations, Accreditation Coordinator
Fleming County Schools
Flemingsburg, KY 41041

Teacher, January 1974 – June 1982

Main Responsibilities: Middle School Mathematics Teacher
Fleming County Schools
Flemingsburg, KY 41041

CURRENT PROFESSIONAL MEMBERSHIPS:

Kentucky Association of School Administrators (July 1982 – July 2016)
Mid-south Education Research Association (Spring 2012 – July 2016)
National Council of Professors of Educational Administration (August 2002 – July 2016)

HONORS AND AWARDS:

Honorary Doctorate of Letters, University of Pikeville, 2013
KASA Distinguished Service Award, Kentucky Association of School Administrators 2007
NAACP Educator of the Year, Northern Kentucky NAACP 2001
FCCLA Statewide (Kentucky) Administrator of the Year, 1994

PUBLICATIONS & PRESENTATIONS:

Books

Barnett, D., & Ginter, R. (2014). *Valuing the voiceless: understanding silent students in and out of the classroom*. Lexington, KY CreateSpace Independent Publishing.

Barnett, D., Christian, C., Hughes, R., & Wallace, R. (2010). *Privileged thinking in today's schools: The implications for social justice*. Lanham, MD Rowman & Littlefield Education.

Chapters (peer reviewed)

Barnett, D., & Aagaard, L. (2005). Online vs. face-to-face instruction - Similarities, differences, and efficacy. In C.L. Fulmer and F. Dembowski (Ed.), *Educational Leadership: Crediting the Past, Challenging the Present And Changing the Future*. (pp. 265-271). Lanham, MD Rowman & Littlefield.

Journal Publications (peer reviewed)

Barnett, D., Hurley, J. & Christian, C. (2014). *Morehead State University: Claiming the Education Doctorate*. Manuscript submitted for publication.

Lyons, R., & Barnett, D. (2011). School Audits and School Improvement: Exploring the Variance Point Concept in Kentucky's Elementary, Middle, and High Schools. *International Journal of Education Policy & Leadership*, 6.

Barnett, D., & Aagaard, L. (2007). Developing leadership capacity within the teaching ranks: one district's approach, 11 (9). *IEJLL: International Electronic Journal for Leadership in Learning*, 11.

Barnett, D., & Bowling, L. (2006). High school / KCTCS / University partnership - Where students are the winners. *Kentucky School Leader* 13-16

Barnett, D. (2004). School leadership preparation programs: Are they preparing tomorrow's leaders? *Education*, 125(1) 121-129

Barnett, D. (2003). Some key parts of the proficiency puzzle. *Kentucky School Leader* 5-9

Presentations (peer reviewed)

- Barnett, D., Mallory, B., Farrington, V., & Nektib, T. (2013). Leading the Future: University Perspectives of the New Dissertation in Practice. NCPEA Annual Conference, Rutherford, NJ.
- Barnett, D., & Ginter, R. (2012). Closing the Gap: Breaking through the Silence. Mid-South Educational Research Association Annual Conference. Lexington, KY.
- Barnett, D., & Carol, C. (2012). Privileged Thinking in Today's Schools: The Implications of Social Justice. National Council of Professors of Educational Administration. Kansas City, MO.
- Barnett, D. (2011). The Impact of Providing Voice to All Students. International Conference on Education, Athens, Greece.
- Klecker, B., Barnett, D., & Hayes, K.R. (2009). Defining the construct "teacher leader": A review of the literature. 38th Annual Meeting of the Mid-South Educational Research Association, Baton Rouge, LA.
- Barnett, D., & Lyons, R. (2009). Developing an EdD: The Journey Begins. National Council of Professors of Educational Administration Annual Conference. San Antonio, TX.
- Barnett, D., & Duvall, D. (2009). The Practitioner's Doctorate. Blue Ribbon Schools Blueprint for Excellence Conference. Orlando, FL.
- Barnett, D., & Dale, D. (2009). Universities: Are you LISTENING??. Blue Ribbon Schools Blueprint for Excellence Conference. Orlando, FL.
- Barnett, D., & Lyons, R. (2008). Implications of Kentucky's Scholastic Audit Results. 37th Annual Meeting of the Mid-South Educational Research Association, Knoxville, TN.
- Barnett, D., & Lyons, R. (2008). Intersection of success for Kentucky secondary schools,. 37th Annual Meeting of the Mid-South Educational Research Association, Knoxville, TN.
- Barnett, D., Lyons, R., & Fiene, J. (2008). Kentucky's educational leadership continuum. National Council of Professors of Educational Administration. San Diego, CA.
- Barnett, D. (2007). Instructional leadership: Administrators and teachers join forces. National Council of Professors of Educational Administration. Chicago, IL.
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Other

Visiting Professor

Barnett, D. (2013). Lincoln - Early Years. American Fellows Program, Guangxi University, Nanning, China.

Barnett, D. (2013). Lincoln - Greatest Speeches. American Fellows Program, Guangxi University, Nanning, China.

Barnett, D. (2013). Lincoln on Leadership. American Fellows Program, Guangxi University, Nanning, China.

Key Note

Barnett, D., & Norman, T. (2012). The Educational Leadership Doctoral Programs at Kentucky's Regional Universities: Their Purpose, Progress, and Promise. Mid-South Educational Research Association Annual Meeting.

Program Development

Barnett, D. & Hughes, R. (2014). Superintendent Certification Program.

Barnett, D., Abell, D., & Wallace, R. (2011). Educational Specialist - Instructional Leadership. Kentucky Education Professional Standards Board.

Barnett, D., Abell, D., & Miller, C. (2010). Educational Doctorate - Program Development.

GRANTS:

Barnett, David (CoPI), Radford, Jason (CoPI), Lobianco, Tony (CoPI), Shipley, Jim (CoPI), Foster, Kelly (CoPI) From State Takeover to Continuous Improvement: A Repeatable Model, *US Department of Education* (August 18, 2014 - May 31, 2017), \$1,816,354.00 Fall 2013 (unfunded)

Barnett, David, Gunn, Cathy. Assessing Promising Practices (AP2), *Kentucky Council on Post-secondary Education* (January 2011 – June 2012). \$200,000.00 Fall 2011 (funded)

PROFESSIONAL SERVICE:

Aspiring School Administrator's Scholarship Committee, Kentucky Association of School Administrators Spring 2002 - 2016

Diagnostic Reviews, team member and team lead, AdvancED, 2014 - 2016

Kentucky Specialty Test of Instructional and Administrative Practices, Advisory Committee, Educational Testing Service Fall 2010 - Present

Kentucky Specialty Test of Instructional and Administrative Practices, Test Question Developer, Educational Testing Service Spring 2011 - 2016

Praxis Educational Leadership Standing Committee, Educational Testing Service Spring 2014 - Present

Principal's Redesign Program, Commonwealth Collaborative for School Leadership Programs, EPSB, & KDE Fall 2006 - Fall 2013

Orphan Voice – Mission Trip: Worked in a school for children who live on/near dump in Phnom Penh. Also worked with children in an orphanage about 3 hours north of Phnom Penh. – October 2007.

Scholastic Audit Team Member, Kentucky Department of Education Fall 2003 - Spring 2007

School Leaders Licensure Assessment - Scorer, Educational Testing Service Fall 2002 - 2016

School Superintendents' Assessment, Educational Testing Service Fall 2010 – July 2016

Superintendent Redesign Program, Kentucky Education Professional Standards Board Spring 2012 – December 2015

Texas Superintendent Certification Test, Educational Testing Service, Test Question Developer, Spring 2013 - Spring 2014

Tomorrow's Leader Scholarship Committee, Kentucky Association of School Administrators/Josten's Spring 2010 – 2016

How is the LDC Literacy Framework Different from Traditional Literacy Instruction?

Changes in Classroom Experiences

Instructional Approach	Traditional Classroom	LDC Classroom
Sources for reading	Textbook	Complex informational text to include appropriate non-fiction text at or above grade level Text diversity
Reading instruction	Limited to assigning text readings Some examination of the structure of the textbook	Specific mini-tasks designed to teach the skills of text selection, active reading and note taking
Written products	Short responses Limited essay experience Limited-focus research paper	Focused written products that address literacy standards for prescribed types of writing: argumentative, informational, explanatory, and narrative Written product formats that are content-specific (science, social studies, career/technical) Written products requiring evidence for support
Writing instruction	Minimal, no content specificity	Specific mini-tasks designed to teach the skills of planning, development, revision, and editing Content specific writing modes
Preparing students for reading and writing tasks	Limited task engagement Assignment presented to students	Specific mini-tasks designed to teach the skills of: Task engagement — generate student interest in reading texts and writing assignment in content-related activity Task analysis — design lessons specifically to teach the skills necessary to successfully complete the task
Literacy skills instructional format	Minimal or none Individual teacher choice	Specified list of skills provided that every teacher must address during the unit
Lesson design	School/District-specific format No specific requirement to connect to literacy	Each unit will have a completed "instructional module" that addresses every literacy skill included in the instruction.
Vocabulary development	Content-specific words No specific instruction for learning and using domain-specific vocabulary "Second Tier" vocabulary not addressed	Specific mini-tasks designed to teach the skills of vocabulary with identified student products "Second Tier" vocabulary expected in class discussion and in written tasks

An LDC instructional module is a structure that allows teachers to address four critical questions for rigorous literacy instruction:

Section 1: What task? What tasks set clear, rigorous goals for learning?

A quality teaching task is the beginning point for quality instruction. Teaching tasks set the stage for learning challenging content and literacy skills necessary in academic course work and in the world at large. A quality teaching task is worth teaching because it is relevant to the curriculum or discipline and aligned to learning goals. When you complete a teaching task, you "automatically" create alignment to the Common Core State Standards' learning goals. A quality teaching task is doable in that it is paced for two to three weeks focusing on one or more texts that involve students in addressing an interesting question, issue, or topic as they read and write. Finally, a quality teaching task creates a literate environment for students to engage in critical thinking while employing a range of literacy practices and skills including discussion, speaking, and listening.

Section 2: What skills? What skills do students need to succeed on the teaching task?

For students to be successful on the teaching task, practitioners must be clear on the reading, writing, and other literacy skills students must develop. These skills are identified by "back-mapping" from the requirements of the teaching task. All LDC modules must involve some form of reading and writing skills within clusters. Different lists of skills that emerge from various LDC partners will support researchers in identifying areas of agreement on essential skills.

Section 3: What instruction? How will you teach students to succeed on the teaching task?

Instruction is organized around teacher-ready "mini-tasks" or short classroom assignments that teach the skills necessary to complete the teaching task. These mini-tasks are scored and measurable; as such they create a formative engine for monitoring what students are or are not learning, and they feed into the instructional choices teachers make. They also provide an opportunity for teachers to correct or "repair" any misunderstandings or skill weaknesses students may have.

Section 4: What results? How good is good enough?

Measuring student results is a hallmark of good instruction. It also provides a way for teachers to calibrate rigor levels so that they have common understandings of expectations. By sharing classroom sets of student work, teachers can have robust professional learning opportunities to examine their own practices and how these practices contribute to student results.

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Below are two sample template tasks and an example of how it looks when teachers input their content. The result is a strong combination of using literacy strategies to deepen literacy in the discipline.

Template Task 1:

After researching (informative texts) on (content), write an (essay or substitute) that defines and explains (content). Support your discussion with evidence from research. L2 (Level 2) What conclusions or implications can you draw? (Informational/Definitional)

Example:

Science (Informational/Definitional): After researching your textbook chapters on Newton's Laws of Motion, the essay "The Longest Run Home," and one of the other two articles provided on Newton's laws and the effects on sports, write an article for *Coaching Magazine* that defines Newton's three laws and explains the effects of the laws on sports. Support your discussion with evidence from research. L2 What conclusions or implications can you draw?

Template Task 2:

[Insert essential question.] After reading (literature or informational texts), write (essay or substitute) that addresses the question, and support your position with evidence from the text(s) you read. L2 Be sure to acknowledge competing views. L3 Give examples from past or current events or issues to illustrate and clarify your position. (Argumentative/Analysis L1, L2, L3)

Example:

Social Studies (Argumentative/Analysis L1): Should the state raise the minimum wage? After reading informational texts on the minimum wage debate, write an essay that addresses the question, and support your position, pro or con. L2 Be sure to acknowledge competing views.

Advisory Council | Project INNOVATE

Organizational Chart w/activities

University of Alabama
In-Service Center

Southern Regional
Education Board

Alabama Department of
Education

First Book

Community Engagement

School Librarian Professional
Development

Literacy / Pediatric Services

Whole-Student Supports

Tuscaloosa City Schools
Project INNOVATE

Project Director

Interdisciplinary Literacy Specialists

Literacy STEM Leaders

School Librarians

Innovative Technology Resources

Engineering is Elementary

Reading Apprenticeship

Library STEM Literacy Kits

STEM Literacy Academies

Tuscaloosa City Schools - Alabama

Target Population | Students - 23% Percent Below Poverty (Grades K – 12)

Budget Narrative File(s)

* Mandatory Budget Narrative Filename:

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Budget is reasonable, cost-effective, and adequate to support this Innovative Approaches to Literacy Program. **Proposed project period start date:** 10/01/2023 | **End date:** 09/30/2028.

Budget Narrative (Federal Funds):

An analysis of the cost indicates they are reasonable, effective, and adequate in relation to the stated objectives and outcomes of the project. Tuscaloosa City Schools (TCS), in partnership with the University of Alabama, the Alabama State Department of Education (ALSDE), First Book (FB), University of Alabama In-Service Center (UASC) – State Agency and the Southern Regional Education Board (SREB) (National Non-Profit partner) are committed to Project INNOVATE and will provide the necessary resources to ensure the success of all strategies and support for this Innovative Approaches to Literacy (IAL) program. This budget narrative is a full description of how federal funds will be processed for 20 (K-12) schools within the communities of TCS to support services to address literacy and reading engagement needs for birth through 12th grade. The role of the partnerships shall provide a pipeline of services and resources that include administrative support, technology integrated support, connectivity, website, custodial, fiscal management, office space, phones, equipment, furniture, and professional development facilities for regional trainings. The financial capacity to implement and sustain the project is evidenced by the past successful financial management of multiple federal and state grants. All charges to this project for items such as salaries, fringe benefits, travel, and contractual services are conformed to the written policies and established practices of TCS that operates under their

board policies ([Board Policy Manual](#)) for financial guidance and is approved for allowable charges. Additionally, the TCS Human Resources & Operations maintains open communications with the Tuscaloosa City Board of Education and the Alabama Department of Education on approved provisional rates through state indirect cost agreements, prepares quarterly financial reports, and maintains records for reporting in correlation to their payment management systems. TCS also maintains a yearly audit of all financial statements/reports to the Alabama Auditor of Public Accounts.

Leveraging Resources – Several resources have been identified to support the initiatives of this program. The University of Alabama will provide training locations to the teachers that will participate in Project INNOVATE and allow access to technology, facilities, advising, library, and writing center services. Each TCS school will also provide meeting spaces, materials, library use after hours, and resources to have the opportunity to participate in any professional development and/or training opportunities that TCS and other staff partners may need. TCS will also partner with local businesses and companies within each local community and align resources to help students and teachers reach their educational goals. Other resources include a Literacy Bus that will be implemented in the fall of 2023 along with paid summer programming for teachers that elect to participate in activities to prevent summer learning loss. TCS also ensures all training sites used in this project meet all applicable regulations of safety, accessibility services and health measures for legal and program standards. With the development and dissemination of accessible instructional materials and literacy-based programming any individual will be provided access including all groups (but not limited to) include above in TCS Board Policy. By providing community and national outreach activities all partners at the local, state and national level will also provide equal access. Project

INNOVATE will **only use federal funds to supplement new activities and new resources and will insure not to supplant these funds into current Federal, State, and local programs** that are already available to carry out activities authorized under section 4625 of the ESEA. Thus, INNOVATE is not just school based; it is family and community based as well. INNOVATE has three primary objectives for our libraries: (1) raising academic achievement; (2) fostering a love for reading and learning that extends beyond the school day and school walls, and (3) extending literacy efforts to include parents and the community. Below are the details and an itemized budget that will illustrate the breakdown for each project year and the basis for estimating the costs of personnel, stipends, benefits, travel, supplies, contractual, and indirect cost toward projected expenditures.

Planning – Project INNOVATE will have partnerships in place based on identified needs and organized around a set of mutually defined results and outcomes toward literacy and reading needs. TCS understand that interagency collaborative efforts are highly complex undertakings that require extensive planning and communication among partners and key stakeholders. During the first two quarters of implementation (6 months), our project director, partnership councils and evaluator will work during a planning period to establish baselines in the areas where they are needed and will set annual targets for each performance measure to ensure that we are on track for achieving the objectives by the end of the project period. Baseline data was established using the best available data at the time of the needs assessment.

Personnel – Listed below are the position titles, duties or each position, project personnel salaries, and the percent of time committed to the project for each staff member.

Personnel	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Project Director (1.0 FTE)	██████	██████	██████	██████	██████	██████
Interdisciplinary Literacy Specialist (2.0 FTE)	██████	██████	██████	██████	██████	██████
*Literacy STEM Leaders (Salary Stipends Only) x 40 @ ██████ each	██████	██████	██████	██████	██████	██████
Total						██████

**The ICRA does not include the stipends for the Literacy STEM Leaders*

The importance of each position to the success of the project is described here along with the basis for cost estimates. The primary expenditures under personnel will be needed to oversee all program functions from funding, oversight, implementing new programs, and day to day operations. The Project Director’s position is based on a contract per year of 245 days and their salary is determined through the TCS salary schedule per-daily rate based on years of teaching and administrative experience, with levels of responsibilities. This also includes their administrative supplement for the amount of credit in the total years of administrative service completed. This position will require a minimum of 15 years of educational experience, with at least 10 years of experience in administration for school improvement, data analyst, counseling, literacy, and reading engagement. **This position will be a key part of Project INNOVATE, in leading TCS with their “culture of reading” in promoting reading engagement for birth**

through 12th grade students in our communities. This project director will also be the lead servant leader and coordinator for all librarians in TCS, in promoting library support programs, distribution of free high-quality books, and assisting this IAL grant in the developing and nurturing of community partnerships. Past performances should also include programs managing federal level grants, communication, and budget reporting.

The Interdisciplinary Literacy Specialist positions (2 Full Time Employees) will be based on a contract per year of 245 days and their salary is determined through the TCS salary schedule per-daily rate based on years of teaching experience, administrative experience, and responsibility. The Interdisciplinary Literacy Specialist will require a minimum of 10 years in education with a master's degree. At a minimum, two years should include administrative or responsibility in community engagement, along with 5 years' experience in leading schools with literacy action plans (vertical and horizontal grade alignments). The Interdisciplinary Literacy Specialists will also assist the Program Director with budget reporting, communications, advisory meetings, and planning for long-term sustainability. All personnel have a knowledgeable background to provide academic support and develop Professional Development training to coach school librarians, teachers, administrators, and parents. They will be available to help with project goals and objectives and will network with the other established partners within the state and on a national level to implement key strategies to overcome literacy and reading barriers that are disadvantages concerning our youth. These positions will serve as the lead facilitator for their IAL programs located within each elementary, middle and high school. They will lead activities, professional development, and literacy systems with the selected Literacy STEM Leaders (certified teachers that will be paid salary stipends).

For this program, 40 salary stipends will exist to provide literacy and STEM reading engagement support, school library programs, and pediatric literacy programs for each school community in TCS. Each elementary school (K – 5) will house at least two Literacy STEM Leaders for foundational support in literacy transition programs and services. Each middle and high school will be provided with at least one Literacy STEM Leader to help build continuous improvement for Project INNOVATE. The remaining positions for Literacy STEM Leaders will be divided up for school librarian support to assist schools and their communities with library programs in promoting high-quality free books and up-to-date literacy materials. For a project of this size, these positions are necessary to lead and assist each school implementing literacy action plans, literacy design collaboration, phonics, literacy support strategies, reading engagement, differentiation, balance literacy, building effective media centers and building their sustainability plans. All positions are approved by our TCS Board and fall in conjunction with our salary schedule, which is consistent with certified staff (based on rank and years' experience). All TCS staff are evaluated annually using the evaluation process by our administration.

Salary Stipends (Support / Sustainability) – TCS will pay salary stipends for direct teacher support to qualified specialists from their school district. These certified **Literacy STEM Leaders (LSL's)** will demand a substantial amount of time outside of the regular school schedule and commitment to achieve the program goals and objectives. LSL's will serve as school ambassadors for their local community promoting engagement with students, parents, and stakeholders. Project INNOVATE will focus on high-quality literacy, reading engagement, and library activities that will be effective and provide sustainability and opportunities for parental and community engagement for years to come. Listed below are the amounts of stipends that Project INNOVATE will offer with the percentage of activities and training per year.

Salary Stipends per position	Project Personnel per year per school (<i>minimum</i>)	Commitment of Time / Trainings
Literacy STEM Leaders <i>Library & Literacy STEM Focus</i>	2 positions per elementary 1 position per middle 1 position per high @ [REDACTED] each year (x40)	100% of Activities 100% of Trainings

Salary Stipend Cost	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Salary Stipend Cost	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total						[REDACTED]

Fringe Benefits – These benefits were calculated according to the state requirements in Alabama based on the fixed costs for staff salaries, which is calculated at 48% of the salaries. Included in the calculations are: Public Education Employee Health Insurance Program, Southland Insurance, Dental Insurance, Employee Assistance Program (EAP), Teacher Retirement Systems of Alabama (TRS), Employee Leave, Sick Leave, Personal Leave, Professional Leave, and Vacation Days. Below is a breakdown of the amounts and percentages that was calculated for Personnel to Project INNOVATE based on the current salary schedule for the base pay.

Fringe Benefits	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Project Director (1.0 FTE)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Interdisciplinary Literacy Specialist (2.0 FTE)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total						[REDACTED]

Travel – TCS allows travel supplements for the director and coordinators that provide services to multiple schools and their position involves direct activities with students, teachers, administrators, parents, and community stakeholders. The Board of Education authorizes the Superintendent the discretion to allow coordinators, directors, and specialist the use of these travel supplements per year. This cost is annual and is based on the published IRS Standard Mileage Rate and the recommendation of the Alabama State Department of Education without additional Board action. The current rate of these travel supplements is currently set at [REDACTED] each year per position. For this Innovative Approaches to Literacy program, TCS will use Federal funds to provide travel supplements for the Project Director and Interdisciplinary Literacy Specialists (3 positions) for all elementary, middle, and high schools. The amount set for travel will allow equitable Project INNOVATE personnel to drive within the local communities and provide flexible scheduling for weekly educational sessions.

Purpose	Destination	Item	Calculation	Travel Cost Charged to the Award
Travel supplements (3 total)	TCS elementary, middle, and high schools	Travel cost mileage per IRS Mileage Rate	Per TCS Board Policy, each director/coordinator is allowed up to [REDACTED] each year	[REDACTED] per year
National / State Conference	Tuscaloosa, AL to Washington DC Project Director, Coordinators, Literacy School Leaders	Airfare Hotel Per Diem (Travel and incidentals) Car Rental	Cost per staff [REDACTED] (4 total) Includes flight, lodging, travel expenses (misc.), and ground coverage to events	[REDACTED] per year

Purpose: Travel will be necessary for scheduled meetings, attendance of advisory meetings, and coordination of all programs in Project INNOVATE. Each school will coordinate with one Interdisciplinary Literacy Specialist and up to two Literacy STEM Leaders that will engage with this project to review student outcomes, data, and assistance with programs that are being implemented. TCS takes in consideration a mileage rate updated each quarter by the Board of Education or Superintendent that correlates with the state and reimbursement determined by the IRS Standard Mileage Rate. Included in the travel budget is an amount of [REDACTED]0 over 5 years, for conference travel to national and state conferences will allow Project INNOVATE staff (up to three staff per year) to attend necessary trainings for supportive measures to our goals and objectives. Professional travel will be granted to TCS staff that are working directly with this IAL program and have participated in educational and professional growth activities. All professional leave must have prior approval from the Board of Education that requires an overnight stay and is a request of professional development. The activity must be part of their professional growth plan or must be related to the goals of Project INNOVATE. TCS follows the policies and procedures and cost per diem when expenditures are made for traveling.

Travel	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Travel Supplements (Community & School Travel x4)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Conference Travel	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total						[REDACTED]

Supplies – Supplies will also be utilized for correspondence, reporting results, advisory meetings, professional development workshops, and facilitation of Project INNOVATE.

Technology usage is very critical for day-to-day operations and communication with schools and staff from TCS. In this budget, the use of technology is within a reasonable amount to assist program staff with their responsibilities. Technology items may include laptops, tablets, mobile phones, and connectivity when needed for program staff. The table below provides a **breakdown of how supplies cost was determined** through budget software and operational programs from specialists, coordinators, directors, and other administrators from previous projects at TCS. These are based on average outcomes per year, in relation to the size of the project.

Supplies	YR 1	YR 2	YR 3	YR 4	YR 5	Total
General office materials	██████	██████	██████	██████	██████	██████
Reading Materials – STEM Literacy Engagement	██████	██████	██████	██████	██████	██████
Technology Usage	██████	██████	██████	██████	██████	██████
Total						██████

Instructional Materials (Reading Engagement) – To assist TCS with their “culture of reading,” Project INNOVATE will look to actively increase the reading engagement at all grade levels (K – 12), including birth to pre-school in all communities. Materials and software platforms that will be considered for this IAL program include Lexia, Edgenuity, and Imagine Learning. These resources will assist with reading intervention, personalized learning goals, and year-round supports to help schools meet the needs of all students and aimed to reflect a culturally diverse perspective free from bias, reflective of students from all backgrounds, and content that tells a fully and inclusive story from multiple perspectives (including diversity, equity, and inclusion).

Contractual – All costs incurred with Project INNOVATE shall correlate in conjunction with TCS’s **model procurement system** with budget software, creating purchase orders, and fall under the annual audit review of records. This falls in-line with the procedures for procurement under 2 CFR 200.317-200.326. All contractual agreements will meet and satisfy the project’s plan when employing contractors or purchasing programs to assist students in overcoming barriers. Contracts that are year-to-year will be in agreement with TCS Board of Education policies and procedures.

Relation to Project Success – TCS relies on supportive and reliable contractors to assist with programs to provide more services to students. To ensure equal access, all students (birth through 12th grade), specifically students who are scoring below required proficiency levels and not considered college and career ready will be provided access. Project INNOVATE’s instructional and assessment literacy methodologies are designed to accommodate “at risk” students and those with special needs. Considering in our overall population, 97% of our students qualify for free and reduced lunch and 23.5% of the same students live in poverty, there are multiple barriers to learning. All parents and community members will be invited to participate in the **INNOVATE** program. This means that every student, staff, parent and community member, without regard to age, race, color, national origin, gender, financial ability, learning disability or handicap, will have the opportunity to participate in the program. This is also stated in our GEPA plan which will be uploaded with the application. 95% of the students in the schools fit into one of the above categories so equal access for members of groups that traditionally have been under-represented based on age, race, color, national origin, gender, financial ability, learning disability or handicap is assured. To provide assistance with our goals, objectives, and outcomes, funding will be necessary in the following contractual areas. Below,

each contractual focus will be related back to these goals listed in our narrative/management sections.

Goal 1: To develop and implement a Literacy Plan with STEM integration within the TCS schools that makes provisions for literacy at all age/grade levels.
Goal 2: To improve school readiness and success from birth through grade 12 in language and literacy development. (AP1) with emphasis on students with racial, ethnic, cultural, disability, and linguistic differences (AP 2).
Goal 3: To implement a data-based decision-making process to collect & analyze, high quality data in a timely manner (RTI).
Goal 4: To implement high-quality school library projects that increase access to a wide range of literacy resources (print or electronic) and provide reading engagement to students.

Project INNOVATE **will only use federal funds to supplement new activities and new resources** and will insure not to supplant these funds into current Federal, State, and local programs that are already available to carry out activities authorized under section 4625 of the ESEA. Below is a total calculation on contractual funds for all five years, followed by breakdown descriptions on each contractual line item (contractor or services).

Contractual	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Contractor and/or Services to be provided to INNOVATE	████████	████████	████████	████████	████████	████████
Total						████████

Contractor: School Librarian STEM Professional Development	Focus: K – 12 PD for Library Services and Programs
Estimated Federal Funds for TCS Schools: ██████ per year	
Total Amount over 60 months: ██████	
<p>Description and Justification: TCS in partnership with the University of Alabama and the Alabama School Library Association will provide technical assistance through (1) improvement of instruction through media and technology supports, (2) encourage and promote professional growth for student opportunities, (3) advocacy for literacy resources, reading engagement, books, and services (including pediatric) for all local communities, and (4) coaching and ongoing support for campus and school communities to leverage assets to open up new student possibilities to go beyond informing to dynamically engaging communities. Professional Development STEM opportunities will be provided to all school librarians (media specialist), teachers, and administrators working with Project INNOVATE. These opportunities will include ways to increase technology resources and support for schools and families, student engagement for literacy, school and teacher engagement for communities in promoting literacy needs for students. <u>Parental/Community Literacy</u> - Within the library media centers will be a parent resource center. These centers are intended to serve as a source of information and guidance for parents in two key areas: (1) to encourage them to work with their children to foster a love for reading and learning, and (2) to inspire them to become better, more motivated readers themselves. With this in mind, the library media staff will hold parent sessions on how parents can support children’s reading at home that support STEM interactions.</p>	

Amount of time for contractual services devoted to the project: Working with the University of Alabama (UA), professors will assist with the STEM library programs and services at each elementary, middle, and high school for Project INNOVATE. On average, these professors may spend anywhere from 10 to 15 hours a month working with one school. The amount of time will vary on which levels of support for literacy programs are currently operating. TCS plans to contract with UA in providing programs that will be carried out in coordination with school libraries, along with free high-quality book distribution to promote childhood literacy and reading engagement activities and programs to provide a learning environment that is racially, ethnically, culturally, disability status and linguistically responsive and inclusive to support all students. The budget is set up to build up STEM programs for each school to help with sustainability.

Contractor: Literacy / Pediatric Services	Focus: Provide early literacy services and well-child visits
Estimated Federal Funds for TCS Schools: ██████████ per year	
Total Amount over 60 months: ██████████	
<p>Description and Justification: Working with dental clinics, wellness clinics, and healthcare professionals in each community, TCS will created the use of pediatric literacy kits that will include books and motivational materials for well-child visits. Tuscaloosa’s One Place, part of the Alabama Network of Family Resource Centers, will provide early intervention services to ensure a comprehensive literacy service to promote recommendations to parents to encourage them to read aloud starting in infancy to increase motivation, performance, and frequency. Charged with conducting a rigorous and comprehensive review of reading research, the</p>	

National Reading Panel produced a report focused on five essential components of reading instruction: phonological awareness, phonics, fluency, vocabulary, and comprehension of literature and informational text. In addition to these components, Project **INNOVATE** includes effective literacy instruction in alphabet knowledge, print awareness, development of oral language skills, grammar, academic language, irregular word recognition, multisyllabic word recognition, spelling, and writing.

Amount of time for contractual services devoted to the project: Interdisciplinary Literacy Specialists, Literacy STEM Leaders, and Librarians will support this program through multiple pediatric literacy kits and services, to be used in all TCS communities to start a foundation of literacy skills along with reading engagement. Funds are for coverage on kits, material needs, and resources for families in each school community.

Contractor: First Book	Focus: Community and parent resources – Free high-quality books for students
Estimated Federal Funds for TCS Schools: [REDACTED] (average) per year	
Total Amount over 60 months: [REDACTED]	
<p>Description and Justification: Children learn by reading and they must acquire the habit of choosing books that interest them. This does more for reading development and speeds up fluency. Fondness for books start at home and through opportunities to read self-chosen books/magazines at school. Through this program we will purchase 20+ STEM books per student grades K-12. School Libraries will also have the ability to purchase several subscriptions to various magazines. Funding for all years will allow for more opportunities for students to read. Data Collection Systems: To assist with our free high-quality books to</p>	

students, First Book will support Project INNOVATE with brand new STEM books and resources to children in need. First Book is a national nonprofit that addresses the barriers to education faced by children in low-income communities. These books and resources are generously donated by publishing partners to First Book to be provided at a low cost for schools to serve students and families. First Book will also supply digital formats and learning for grades K – 8. In support of literacy through reading engagement and technology, these resources will also support games in learning, which were originally funded from the National Science Foundation.

Amount of time for contractual services devoted to the project: Project INNOVATE staff will provide the necessary time from their annual contracts each year in providing the resources, kits and books to students and families. Literacy STEM Leaders and Librarians will also contribute to this activity each summer to promote summer reading to give students a better chance for success in school and beyond.

Contractor: School Library Programs / STEM Literacy Kits	Focus: School and Community resources
Estimated Federal Funds for TCS Schools: [REDACTED] average) per year	
Total Amount over 60 months: [REDACTED]	
Description and Justification: To keep our focus on STEM programs, literacy, and reading engagement, Project INNOVATE will focus on 1) RTI (MTSS) support structures on supplemental instruction in reading; 2) the five components of reading – phonemic awareness, phonics, fluency, vocabulary, and comprehension; 3) focus on nonfiction literacy to align reading, writing, and content area learning skills articulated in the new Alabama Reading	

Initiative; 4) oral and written language and academic vocabulary development. Through an enhanced library media center collection, students, teachers, and parents will have the needed print and non-print resources to complement classroom instruction, extend learning beyond the classroom, and provide the means to educate parents on their role in helping their children achieve in reading. Children learn by reading and they must acquire the habit of choosing books that interest them. This does more for reading development and speeds up fluency. Fondness for books start at home and through opportunities to read self-chosen books/magazines at school. Programs and resources to promote literacy and reading engagement across all platforms and for all students will include: (Lower Elementary) Audible Stories, Storyline Online, Unite for Literacy, and JLG Digital. (Upper Elementary) Epic!, Scholastic Learn At Home, National Geographic Kids, Big Timber Media, Oxford Owl, SORA, and myON. (Middle/High School) Audiofile Sync, Alabama Virtual Library, JSTOR Open, and Online Writing Lab. School Libraries will also have the ability to purchase several subscriptions to various magazines. Funding for all 5 years will allow schools to choose which programs to integrate first and within phases for sustainability. TCS will also plan to provide partnerships with businesses in the community to do a media campaign to inform all parents about the resources available through Project INNOVATE. Literacy Kits will also be provided to families to help contribute to kindergarten readiness through services such as Reading Rockets, Imagination Library, and Scholastic.

Contractor: Southern Regional Education Board (SREB)	Focus: Literacy, Reading Engagement, and School Library services for training
Estimated Federal Funds for TCS Schools: ██████████ per year	
Total Amount over 60 months: ██████████	
<p>Description and Justification: SREB will lead all elementary, middle, and high schools on Action Steps to support a school-wide STEM Literacy Plans, provide coaching sessions, and provide assistance and training for professional development each year of Project INNOVATE. SREB will lead and assist each school in implementing RTI/MTSS academic plans, literacy design collaboration, phonics, literacy support strategies, differentiation, balanced literacy, building effective media centers, and building their sustainability plans. SREB will employ 3 to 5 consultants to conduct training sessions, coach coordinators and leaders in professional development events related to literacy & reading engagement activities, do virtual checks, and provide ongoing feedback to the Project Director and administrators of each school. Walk-in visits and data collection will also provide feedback to the evaluation and advisory teams to analyze next steps and success strategies.</p> <p>Amount of time for contractual services devoted to the project: SREB will provide up to 32 total sessions toward PD and data analysis in the arena of literacy structures, reading engagement, and their Literacy Design Collaborative (LDC's). Total time directed toward Project INNOVATE – 320 hours per year.</p>	

Contractor: Reading Apprenticeship	Focus: Reading Engagement Program / Middle and High School
Estimated Federal Funds for TCS Schools: [REDACTED] per year	
Total Amount over 60 months: [REDACTED]	
<p>Description and Justification: To assist with a range of demographics and educational settings, Project INNOVATE will look to Reading Apprenticeship for professional learning and services to support teaching and learning with middle high school students. Several decades of research demonstrates that the Reading Apprenticeship approach results in more engaging and effective teacher assignments with significant impact on student literacy and overall test scores. TCS will provide teachers with a suite of flexible services to start implementing the Reading Apprenticeship approach and sustain ongoing success through in-person professional development and facilitated online courses. This design will include three phases over the course of the first three years. Phase one will provide the essentials to introduce teachers to the Reading Apprenticeship Framework on four dimensions of learning that include social, personal, cognitive, and knowledge-building to assist with the development of metacognitive conversation. Phase two will help build support for TCS with Small Group Coaching for middle and high school teachers and instructional leaders who have previously participated in Reading Apprenticeship professional learning and have begun implementing. Each coaching session provides an opportunity for teachers to share and assess student work, design responsive instruction, practice instructional routines, reflect on implementation, and set new goals. In addition to receiving small group support & feedback, the session concludes with planning around a specific text from their classroom. Phase three (Leadership Coaching) is designed for schools & districts to build teacher leader capacity and sustain Reading</p>	

Apprenticeship. Participants will acquire tools to lead school-based meetings, as well as a deeper understanding of Reading Apprenticeship.

Amount of time for contractual services devoted to the project: Reading Apprenticeship, will assist in developing plans that will include key elements of school improvement, such as teacher training, administrator training, coaching, implementation monitoring, and assessment. In addition, they will work with each community school to build internal capacity to help reading engagement become part of the school culture. Their staff will be invested in 200 days (8,000 hours) over the five years working with the TCS Leadership Team and each community school.

Contractor: Engineering is Elementary	Focus: Elementary STEM Kits with Literacy Focus
Estimated Federal Funds for TCS Schools: ██████████ per year	
Total Amount over 60 months: ██████████	
<p>Description and Justification: EIE contains 20 hands-on engineering design challenges. Each unit fully complements the science topics that schools will cover. An EIE consultant will train TCS staff and librarians each year in the areas of Life Science, Earth and Space Science, and Physical Science. This is a hands-on STEM engineering education approach that can be repeated every year with reusable parts and materials. All challenges also involve literacy concepts promoting reading and conceptualizing information.</p> <p>Amount of time for contractual services devoted to the project: Librarians, Interdisciplinary Literacy Specialists, and Literacy STEM Leaders will be trained and support this application through professional learning, to be used with students. EIE professional</p>	

development workshops, webinars, on-demand course, and train-the-trainer workshops will give TCS staff skills and confidence to teach hands-on, minds-on, interactive STEM curricula. Using this model on site, TCS will engage with a set of EIE units to train other teachers.

Contractor: STEM Literacy Academies (All Schools K-12)	Focus: Engagement camps for students, teachers, and parents
Estimated Federal Funds for TCS Schools: ██████████ per year	
Total Amount over 60 months: ██████████	
<p>Description and Justification: Project INNOVATE will provide a family and community engagement activity called INNOVATE Academies. Each summer, TCS will offer a centralized location to create the opportunity to engage parents, students, and teachers. These academies will promote literacy and STEM for ongoing engagement with academics. Activities will also include project-based learning. STEM education helps to prepare students to live and work in the modern world. Many problems faced by our rural communities today have solutions that can be found in the STEM fields. While STEM can offer some solutions, critical thinking, problem-solving, and socially conscious approaches make these solutions a reality. Teachers and students will also engage with modules for advancement with leadership activities to progress toward leadership qualities. The INNOVATE Academies will span over several weeks each summer and shall encourage local community leaders to help advocate literacy and STEM engagement toward career readiness. TCS will partner with the University of Alabama to collaborate with each community school on activities, lessons, and promotions to achieve literacy connections over the summer breaks. Transition opportunities will be provided to graduating 8th and 5th graders and readiness camps for incoming Kindergarten</p>	

students. Parents and teachers will also be provided with training modules in literacy, phonics, and STEM readiness with books and literacy kits. Funding will be promoted each summer and open to all students from each community school, grades P-12. All students should have equal access to high-quality educational resources. The cost of each Academy per year will be estimated at [REDACTED], based on estimates with resources and the number of student participants.

Amount of time for contractual services devoted to the project: Project INNOVATE staff will provide the necessary time from their annual contracts. Literacy STEM Leaders will assist with the INNOVATE Academies as part of their training stipends.

Contractor: National Evaluation Group	Focus: Evaluations Services for TCS
Estimated Federal Funds for TCS Schools: [REDACTED] per year	
Total Amount over 60 months: [REDACTED]	
<p>Description and Justification: TCS will conduct an annual evaluation for Project INNOVATE to measure progress in meeting the purpose of this Innovative Approaches to Literacy program. These evaluations will refine and improve activities carried out under this grant and show progress with our annual measurable performance objectives and outcomes. TCS will partner with the National Evaluation Group (NEG) who has worked with the TCS staff in previous proposals and will be responsible for all data collection and reporting. NEG has over 30 years' experience in evaluations and have certified/qualified members on staff. NEG is well known in the arena of programs associated with educational needs in communities and will provide expertise in all areas for this project. NEG brings proficiency in research, evaluations, data collection, annual reporting, and networking with professional</p>	

experts to help grantees achieve their goals and outcomes. NEG maintains a positive track record in past performances in demonstrating success with national programs and organizations. The impact they provide to program staff is always well-intended with positive feedback for improvement and overall success.

Amount of time for contractual services devoted to the project: For this IAL program NEG will be providing three staff members, who will provide 70+ hours of services per month with TCS, Project INNOVATE staff, and contractors for program success.

Total Direct Cost – The total direct cost for Project INNOVATE is [REDACTED] for 5 years.

Total Direct Cost	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Direct Cost	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total						[REDACTED]

Indirect Cost – 2.1% of the Total Direct Cost for the budget is allocated for TCS. Currently, TCS is approved for 2.1% by our Indirect Cost Rate Agreement (ICRA). Total Indirect Cost is

[REDACTED]. ***For this calculation, TCS did not charge 2.1% toward the Professional Development Stipends listed under Personnel. In past applications, this has been the practice of Uniform Guidance and Regulations when working with Federal and State programs.**

Indirect Cost	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Indirect Cost	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total						[REDACTED]

**The ICRA does not include the stipends for the Literacy STEM Leaders*

Total Cost – The Total cost of Project INNOVATE is [REDACTED]

Total Cost	YR 1	YR 2	YR 3	YR 4	YR 5	Total
Cost per Year	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total						[REDACTED]

Adequacy of Resources – An analysis of the cost indicates they are reasonable in relation to the number of potential students (10,999) to be served, who as a district has an average of **23% of their students from families with incomes below the poverty line**. At the cost of [REDACTED] per participant per day for a 180-day school year (over 5 years), the return on investment will advance high-need students in Tuscaloosa, Alabama and assist them to be proactive with literacy education, giving them an opportunity out of poverty. Project INNOVATE anticipates positive results from the goals and objectives that will engage students, teachers, parents, and the community at large with several innovative instructional resources blended with STEM, literacy, reading engagement, and library strategies for school learners and parents. The costs are reasonable in relation to the number of people to be served and to the anticipated results and benefits. The last table in this budget narrative will show the total budget breakdown for all 5 years. Project INNOVATE anticipates positive results from the goals and objectives that will engage students, teachers, parents, and the community at large with several blended educational opportunities with new strategies for educators. The applicant (TCS) demonstrates that it has the resources to operate the project beyond the length of the grant. The applicant (TCS) identifies existing neighborhood assets and programs supported by Federal, State, local, and private funds that will be used to implement a continuum of solutions.

Project BUDGET Breakdown

Tuscaloosa City Schools	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Personnel	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	
Project Director (1.0 FTE)						
Interdisciplinary Literacy Specialist (2.0 FTE)						
*Professional Development Stipends (x40)						
Fringe Benefits						
Project Director (1.0 FTE)						
Interdisciplinary Literacy Specialist (2.0 FTE)						
Travel						
Travel Supplements (School Travel x3)						
Conference Travel						
Supplies						
General Materials						
Reading Materials - STEM Literacy Engagement						
Technology Usage						
Contractual						
School Librarian STEM PD						
Literacy / Pediatric Services						
STEM High-Quality Books - First Book						
School Library Programs						
SREB - Literacy Consultants RTI						
Reading Apprentichship						
Engineering is Elementary						
STEM Literacy Academies						
Evaluator (NEG)						
*Total Direct Cost						
*Indirect Cost Rate Agreement (2.1%)						
Total Cost						