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Evidence for the Effectiveness of Great Books K–12 Programs and Inquiry-Based Learning

Table of Contents

Overview	2
Measuring the Impact of Junior Great Books Programs	3
Measuring the Impact of Key Components of Inquiry-Based Learning	12
Measuring the Impact of Professional Learning on Developing Teacher Proficiency in Inquiry-Based Instruction	28
Direct Endorsements of Great Books Professional Learning.....	32

Overview

The Shared Inquiry™ Method of Learning

The Shared Inquiry method is a distinctive, inquiry-based approach to the reading and discussion of literature. Teachers serve as partners in inquiry with students, working together to question and interpret what they read. At the heart of the program is Shared Inquiry discussion, where students think and talk about open-ended questions of meaning in a text while the teacher, as discussion leader, encourages them to develop their ideas, support those ideas with evidence, and listen and respond to their classmates. Through the use of Great Books programs, students develop the habits and strategies of good readers and critical thinkers in a vibrant, collaborative learning environment.

Effectiveness of the Shared Inquiry Method

- In a carefully designed meta-analysis of nine discussion-based methods, Shared Inquiry was one of only three approaches that increased literal or basic comprehension and high-level comprehension (i.e., critical thinking and reasoning about or around text) (Murphy et al., 2009).
- Several key aspects of Shared Inquiry have proven essential for productive discussion including structure, focus, high ratio of student-to-teacher talk, open-ended questions, and high degree of uptake (questions that follow from a previous statement) (Soter et al., 2008).

Shared Inquiry has been shown to improve:

- » Critical thinking and higher-level reasoning (Dudley-Marling & Michaels, 2012; Waters, 2010; Murphy et al., 2009)
- » Literal and abstract reading comprehension (Dudley-Marling & Michaels, 2012; Murphy et al., 2009; Gasser, Smith, & Chapman, 1997; Kelly, 1996)
- » Expository writing in response to literature (Sondel, 2009)
- » Self-esteem (Feiertag & Chernoff, 1987)

Great Books programs have been shown to be effective with students at a wide range of ability levels, including:

- » Below-average ability (Waters, 2010; Gasser, Smith, & Chapman, 1997)
- » High ability (Parks, 2009; Wood, 2008)

These programs have also been found to be effective with:

- » Urban students (Waters, 2010; Sondel, 2009; Wheelock, 1999)
- » Students with low socioeconomic status (Dudley-Marling, 2014; Dudley-Marling & Michaels, 2012)

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Part I

Measuring the Impact of Junior Great Books Programs

Dudley-Marling, C. (2014)
Insisting on Class(room) Equality in Schools

Dudley-Marling, C. & Michaels, S. (2012)
Shared Inquiry: Making Students Smart

Focus

Both chapters draw on data collected during a study of Shared Inquiry in a fourth-grade classroom at a high-poverty, underperforming school in New York City. This classroom served a high proportion of poor students of color, many of whom were second-language learners or had special needs. Those students with a history of educational failure learned to engage in high-level literacy discussions and construct the kinds of arguments that are the hallmark of academic discourse when given challenging texts and supportive “talk moves” by their teachers and peers.

Methods

Data was gathered from observations and video recordings of Shared Inquiry discussions in two fourth-grade classrooms at Lexington Elementary in New York City. Quantitative analysis focused on the effect of Shared Inquiry practice on students’ learning identities.

Key Findings

- After the implementation of Shared Inquiry, **over 50% of Lexington students met or exceeded standards on the district reading assessments.** Unexpectedly, there was also a **modest increase in test scores in math and science. Quantitative analysis showed that students did approximately two-thirds of the talking in discussion** in comparison with teachers—a “complete reversal” of the pattern in typical classroom discussions. High levels of student participation suggest increased student engagement, which is linked to success in school.
- **Quantitative analysis of a 54-minute discussion showed the quality of student engagement,** as students constructed sophisticated arguments including claims, textual evidence, and evidentiary warrants while discussing a challenging text.
- The researchers concluded that **Shared Inquiry discussions created “affordances that enabled Lexington Elementary students to display a high level of academic competence.”** This gives support for the possibilities of implementing high-expectation Junior Great Books curriculum in high-poverty, low-achieving classrooms.

Where to Obtain These Studies

Dudley-Marling, C. (2014). *Insisting on class(room) equality in schools.* In P.C. Gorski & J. Landsman (Eds.), *The poverty and education reader: A call for equity in many voices* (pp. 230–240). Sterling, VA: Stylus Publishing.

Dudley-Marling, C. & Michaels, S. (2012). *Shared Inquiry: Making students smart.* In C. Dudley-Marling & S. Michaels (Eds.), *High-expectation curricula: Helping all students succeed with powerful learning* (pp. 99–110). NY: Teachers College.

Waters, K. C. (2010)

Literacy Initiatives in the Urban Setting That Promote Higher-Level Thinking

Focus

Describes efforts to improve the literacy curriculum of a large, culturally diverse urban school district. A pedagogical overhaul of traditional practices ultimately led to a curriculum “embedded with activities emphasizing higher-level thinking, data-driven decision-making, learning walks focusing on rigorous thinking within standards-based lessons, and a heightened sense of community awareness of the interdisciplinary nature of literacy.”

Methods

Approximately 200 teachers (a representative sample) were given a teacher-efficacy survey and asked to rate their comfort level with the delivery of various types of literacy instruction. High comfort ratings on the survey contrasted with low student achievement data. Teachers acknowledged a need to deepen their knowledge in the teaching of reading. National and local experts worked with the district’s 55 literacy coaches on the integration of literacy content and the process of coaching. As part of the initiative, teachers in grades 1–8 were offered professional development in the Shared Inquiry method and given Junior Great Books materials to use with their students.

Key Findings

- **Students acquired higher-order thinking skills**—negotiating meaning while practicing new vocabulary, generating ideas, and persisting in a line of inquiry about an idea.
- **The Junior Great Books program pushed students’ thinking** by asking them to interpret characters’ actions and engage in self-reflection of personal ideas and beliefs rather than merely summarizing or reporting at the literal level.
- Teachers “realized that **talk was the medium by which students became better comprehenders**,” and that “**more talk led to more writing**.”
- Teachers reported that “**Shared Inquiry procedures were generalized into the disciplines of science and social studies** and used with text other than the program materials.”

Where to Obtain This Study

Waters, K. C. (2010). Literacy initiatives in the urban setting that promote higher-level thinking. In J. L. Collins & T. G. Gunning (Eds.), *Building struggling students’ higher level literacy: Practical ideas, powerful solutions* (pp. 263–284). Newark, DE: International Reading Association.

Murphy, P. K., Wilkinson, I. A. G., Soter, A. O.,

Hennessey, M. N., & Alexander, J. F. (2009)

Examining the Effects of Classroom Discussion on Students' Comprehension of Text: A Meta-analysis

Focus

This comprehensive meta-analysis of empirical studies examines evidence of the effects of classroom discussion on measures of duration of teacher and student talk and on individual student comprehension, critical thinking, and reasoning outcomes.

Methods

Effects were moderated by study design, the nature of the outcome measure, and student academic ability. While the range of ages of participants in the reviewed studies was large, a majority of studies were conducted with students in grades 4–6. The nine approaches identified for inclusion were Collaborative Reasoning, Paideia Seminar, Philosophy for Children, Instructional Conversations, Junior Great Books Shared Inquiry, Questioning the Author, Book Club, Grand Conversations, and Literature Circles.

Key Findings

- The Junior Great Books Shared Inquiry approach exhibited **moderate to strong effects on text-explicit and text-implicit comprehension as well as critical thinking and reasoning.**
- Junior Great Books Shared Inquiry was **particularly effective at promoting students' critical thinking, reasoning, and argumentation about and around text** in multiple-group and single-group design studies.
- Junior Great Books Shared Inquiry was **one of only three approaches that increased literal or basic comprehension and high-level comprehension** (i.e., critical thinking and reasoning about or around text) in multiple-group design studies.

Where to Obtain This Study

Murphy, P. K., Wilkinson, I. A. G., Soter, A. O., Hennessey, M. N., & Alexander, J. F. (2009). Examining the effects of classroom discussion on students' comprehension of text: A meta-analysis. *Journal of Educational Psychology*, 101(3), 740–764.

Parks, S. (2009)*Materials and Methods for Teaching Analytical and Critical Thinking Skills in Gifted Education***Focus**

The significant trait that differentiates gifted students from their age peers is their exceptional capacity to process information and use it productively. Thinking process instruction extends the usual cognitive abilities of gifted students in all talent areas and promotes types of thinking that talented young people need for success and satisfaction in their fields. The methods, materials, and programs described in this chapter reflect current best practices in analytical and critical thinking, decision-making, and problem-solving instruction.

Methods

This chapter draws on prior research of Swartz and Parks to identify elements of effective critical-thinking instruction.

Key Findings

- Because few teacher education programs offer courses on teaching critical thinking, **once students are placed in gifted programs, their teachers are challenged to organize and implement higher-order thinking instruction.**
- **Successful critical-thinking instructional approaches** involve:
 - » Teaching thinking processes directly in a structured course of study
 - » Infusing analytical and critical thinking into content instruction
 - » Using methods that promote thinking about content learning
- Junior Great Books is **highly recommended as an instructional approach that stimulates gifted students' thinking** about content learning.
- While Junior Great Books is often employed in single-language advanced academic programs, it has also been **effective in gifted programs with large numbers of second-language learners.**

Where to Obtain This Study

Parks, S. (2009). Materials and methods for teaching analytical and critical thinking skills in gifted education. In F. A. Karnes & S. M. Bean (Eds.), *Methods and materials for teaching the gifted* (3rd ed., pp. 261–300). Waco, TX: Prufrock Press.

Sondel, H. B. (2009)

The Effects of Curricular Programs on Aspects of Critical Thinking as Applied to Writing

Focus

The purpose of this study was to determine if there were differences in the effects of curricular interventions on the critical thinking skills of fourth-grade students (as expressed in writing).

Methods

An experimental group participated in Junior Great Books, which emphasized explicit instructional techniques and expectations. A comparison group participated in a critical thinking program that emphasized infused instructional techniques. Post-test scores in three critical thinking areas (Ideas and Development; Organization, Unity, and Coherence; and Word Choice) were measured by the Stanford Writing Assessment Program and assessed by trained scorers. Participants were fourth-grade students in heterogeneously grouped classrooms, representing a cross-section of a large urban school district and its varied socioeconomic and academic backgrounds.

Key Findings

- **The Junior Great Books group had higher means in all three areas of critical thinking** compared to the group that received critical thinking instruction infused through content area curriculum.
- **Method of instruction was an important factor in the determination of students' critical thinking.** The large differences in achievement indicate that students' scores increased considerably by changing the way that a teacher and students approached classroom instruction. The content was similar, but large gains were attributed to Junior Great Books' challenging but manageable, easy-to-implement activities.
- **Curriculum, professional development for teachers, and the means of assessment were more influential on critical thinking than traditional factors** previously thought to influence critical thinking (such as participation in a gifted and talented program and prior student achievement).
- Results suggest that **critical thinking instruction and programs such as Junior Great Books should be a part of the general curriculum for all students.** The "contextualized, problem-oriented, and engaging" curriculum usually thought of as appropriate for highest-achieving students is the most promising kind of curriculum for children struggling with traditional school learning.

Where to Obtain This Study

Sondel, H. B. (2009). *The effects of curricular programs on aspects of critical thinking as applied to writing*. (Ed.D. dissertation). Retrieved from Proquest Dissertations and Theses. (UMI No. 3364889)

Soter, A. O., Wilkinson, I. A., Murphy, P. K.,
Rudge, L., Reninger, K., & Edwards, M. (2008)

What the Discourse Tells Us: Talk and Indicators of High-Level Comprehension

Focus

The purpose of this study was to validate and extend the findings of an exhaustive literature search in Year 1 and a meta-analysis in Year 2 of a three-year project involving nine small-group discussion approaches. Having identified parameters of discussion present in these nine approaches, researchers evaluated the approaches on a common set of discourse features known to characterize “quality” discussions.

Methods

Discussion approaches were grouped according to stance toward the text: expressive, which gives prominence to an affective response to the text; efferent, which gives prominence to acquiring information from the text; and critical-analytic, which gives prominence to querying or interrogating the text in search of underlying arguments, assumptions, worldviews, or beliefs. Researchers identified features of classroom discourse to serve as proximal indices of students’ learning and comprehension, and employed each of these proximal indices in analyzing and evaluating discourse samples solicited from proponents of the discussion approaches.

Key Findings

- The most productive discussions:
 - » Are **structured and focused**
 - » Occur when **students hold the floor for extended periods of time**
 - » Occur when **students discuss open-ended or authentic questions**
 - » Occur when discussion incorporates a **high degree of uptake**—questions that follow along from a previous statement
- **Junior Great Books was classified as an efferent approach** because of its focus on acquiring information and offering evidence from the text.
- **Many aspects of Junior Great Books Shared Inquiry meet productive discussion criteria**, including structure, focus, a high ratio of student-to-teacher talk, open-ended questions, and high degree of uptake.
- **Researchers found a larger percentage of authentic teacher and student questions in Junior Great Books discussions** than inauthentic (“test”) questions.
- Critical-analytic and expressive approaches seemed to offer the greatest opportunities for students to engage in high-level thinking and reasoning. However, **Junior Great Books findings were anomalous when compared to other efferent stances and tended to better resemble critical-analytic approaches** in terms of high ratios of student-to-teacher talk, number of authentic questions, high degree of uptake, and number of opportunities for elaborated explanations.

Where to Obtain This Study

Soter, A. O., Wilkinson, I. A., Murphy, P. K., Rudge, L., Reninger, K., & Edwards, M. (2008). What the discourse tells us: Talk and indicators of high-level comprehension. *International Journal of Educational Research*, 47, 372–391.

Wood, P.F. (2008)

*Reading Instruction with Gifted and Talented Readers:
A Series of Unfortunate Events or a Sequence of Auspicious Results?*

Focus

This article explores a discouraging and very real tragedy for many gifted and talented readers: the unfortunate and unnecessary disparity between what they need from a reading instructional program and what classroom instruction typically provides. It also includes a description of the key components of a gifted and talented reading program.

Methods

Summarizes the research of a number of gifted education experts, including Reis, Renzulli, VanTassel-Baska, and Collins, as well as reports issued by the US Department of Education, the National Reading Panel, and the National Research Center on the Gifted and Talented (at the University of Connecticut).

Key Findings

- Key components of a reading program for gifted and talented students include:
 - » **Assessment:** Use of inventories, checklists, and other instruments to assess reading level and student reading interests
 - » **Grouping:** Flexible grouping based on reading level and student interests
 - » **Acceleration:** Advanced reading materials, often faster paced, based on student assessment data; accomplished through flexible grouping
 - » **Enrichment:** Interest-based reading that extends and broadens reading opportunities
 - » **Opportunities for discussion:** Formal or informal discussion of texts (e.g., literature or Socratic circles, Junior Great Books, book clubs)
 - » **Challenging literature:** Advanced vocabulary, sophisticated themes, and abstract or metaphorical concepts
 - » **Critical reading:** Inferential and interpretive reading involving a deeper understanding of texts
 - » **Creative reading:** Inventive response to texts through writing, performance, or divergent thought
 - » **Inquiry reading:** Self-selected independent projects in which students research real problems and present findings to an authentic audience
- **Junior Great Books is highly recommended** as a discussion-based program “designed to develop critical thinking and reading skills through the use of authentic literature. Its shared inquiry [sic] approach stimulates lively text discussion vis-à-vis open-ended questioning that challenges students to think critically about the reading assignment, develop their own interpretations, and support their ideas with evidence from the text.”

Where to Obtain This Study

Wood, P.F. (2008). Reading instruction with gifted and talented readers: A series of unfortunate events or a sequence of auspicious results? *Gifted Child Today*, 31(3), 16–25.

Additional Citations

Wheelock, A. (1999). Junior Great Books: Reading for meaning in urban schools. *Educational Leadership*, 57(2), 47–50.

- Three Chicago schools serving low-income minority students participated in a successful five-year project giving urban schools access to Junior Great Books.
- The researcher identified four factors for success in implementing the program:
 - » Commitment to literature-based reading and higher-order thinking
 - » Close cooperation among teachers and leadership on new methods
 - » Extensive professional development, including summer institutes and classroom coaching
 - » A multiyear plan to develop teachers' trust and skill, and accustom students to higher expectations

Gasser, J., Smith, B., & Chapman, A. (1997). A Texas dilemma: Literature-based reading instruction or teach to the TAAS. *Journal of the Texas State Reading Association*, 3(2), 21–29.

- Fifth-grade students in a large multiethnic suburban district made significant improvement on the Texas Assessment of Academic Skills (TAAS; the state reading test) as a result of using Junior Great Books.
- The students' reading scores improved significantly over their gains in their previous school year, in both percentile rank and standards referenced, and more than half the class received Academic Recognition for reading scores, many of them for the first time in their school career.

Kelly, J. (1996). Junior Great Books summary of program implementation and evaluation, 1995–1996. River Oaks, TX: Castleberry Independent School District.

- In 1995, the Castleberry Independent School District in River Oaks, Texas, implemented Junior Great Books as a pilot program in seven classrooms, grades 3–5. In the 1995–1996 school year, a total of 27 classrooms, grades 2–6, implemented the program.
- Critical thinking, critical reading, and literal and abstract comprehension skills appeared to be strengthened as students interacted at a greater depth of meaning and used support from the text to document personal opinions.
- An initial review of TAAS data for students who participated in the program for grades 4–6 for one or more years appeared to support these findings.

Feiertag, J. & Chernoff, L. (1987). Inferential thinking and self-esteem: Through the Junior Great Books program. *Childhood Education*, 63(4), 252–254.

- At an independent Chicago school, fourth-grade students' inferential-thinking skills and self-esteem grew with Junior Great Books. Students were more willing to take learning risks and interact collaboratively and respectfully.
- Students also appeared to develop “increased self-awareness of intellectual processes” and “a genuine love of reading.”
- In initial discussions, students borrowed ideas from others who spoke first. Researchers soon realized that borrowing ideas actually enabled students to begin developing their own meanings.

Evidence for the Effectiveness of Great Books K–12 Programs and Inquiry-Based Learning

Part II

Measuring the Impact of Key Components of Inquiry-Based Learning

**Abrami, P. C., Bernard, R. M., Borokhovski, E.,
Waddington, D. I., Wade, C. A., & Persson, T. (2015)**
Strategies for Teaching Students to Think Critically: A Meta-analysis

Focus

Critical thinking is purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanations of the considerations on which that judgment is based. This article summarizes the available empirical evidence on the impact of instruction on the development and enhancement of critical thinking skills and dispositions as well as student achievement.

Methods

The review includes 341 effects sizes drawn from quasi- or true-experimental studies that used standardized measures of critical thinking as outcome variables. A set of four major categories was developed for classifying and describing instructional interventions: 1) individual study, 2) dialogue, 3) authentic or anchored instruction, and 4) mentoring. A rating scale (0–3) described the extent to which each category was represented in a given study.

Key Findings

- Two types of instructional strategies are particularly helpful in developing students' critical thinking skills and dispositions at all educational levels:
 - » **Opportunity for dialogue (e.g., discussion)**—particularly teacher-led whole-class and group discussions where the teacher poses questions
 - » **Exposure of students to authentic or situated problems and examples**, particularly when applied problem-solving and role-playing methods are used
- **Dialogue and authentic instruction are effective in combination, particularly when mentorship is added** to the mix (including one-on-one teacher-student interaction, peer-led dyads, and internships).

Relevance to Shared Inquiry Programs

- In all Shared Inquiry programs, participants engage in interpretive discussion of literature and nonfiction. Higher-level thinking strategies are practiced through response to open-ended, authentic questions about the text's meaning. The teacher's role in discussion is to ask follow-up questions to extend student thinking and encourage respectful interaction with peers.
- In Shared Inquiry programs for grades K–12, one-on-one teacher-student interactions are encouraged and scaffolded. Peer mentorship begins in the middle grades, where tools for peer review of written work are provided.

Where to Obtain This Study

Abrami, P. C., Bernard, R. M., Borokhovski, E., Waddington, D. I., Wade, C. A., & Persson, T. (2015). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research*, 85(2), 275–314.

Reznitskaya, A. & Gregory, M. (2013)
*Student Thought and Classroom Language: Examining the
Mechanisms of Change in Dialogic Teaching*

Focus

This article argues that although monologic classroom structures still dominate, a dialogic classroom is theoretically preferable and more helpful to students. A dialogic approach to classroom instruction, where inquiry dialogue is deployed, empowers students to be independent, active thinkers who collaborate to understand and create new meaning.

Methods

The researchers present a comprehensive theoretical model that clarifies the relationships between dialogue, teaching, and learning. The theory draws from diverse academic fields, including the literatures in philosophy of education, cognitive science, educational psychology, epistemology, and the study of argumentation (e.g., Burbules, 1993; Flavell, 1985; Freire, 1993; Keefer, Zeitz, & Resnick, 2000; Kuhn, 1991; Nystrand et al., 2003; Vygotsky, 1968; Walton, 1998).

Key Findings

- In dialogic classrooms, students learn to:
 - » **Critically evaluate and analyze, and support their claims with evidence**
 - » **Collaborate constructively to create meaning**
 - » **Clarify their own claims, and identify and understand counterarguments**
- Research on the dialogic classroom suggests that **students show improved reasoning, inferential comprehension, and argumentative writing, and perform better on academic tasks.**
- Students develop “mature epistemologies” and therefore **perform better on academic tasks** and show greater comfort with ambiguity.

Relevance to Shared Inquiry Programs

- All Shared Inquiry programs, from kindergarten to college level and beyond, help teachers and students construct a classroom environment that is inherently dialogic.
- In all K-12 Shared Inquiry programs, students engage in inquiry dialogue, giving students the opportunity to develop metacognitive skills that are transferable to other disciplines and that will allow them to perform better at academic tasks.

Where to Obtain This Study

Reznitskaya, A. & Gregory, M. (2013). Student thought and classroom language: Examining the mechanisms of change in dialogic teaching. *Educational Psychologist*, 48(2), 114–133.

Fisher, D., Frey, N., & Lapp, D. (2012)
Text Complexity: Raising Rigor in Reading

Focus

The Common Core State Standards have renewed the demand for students to read more complex texts. In order to help students, teachers need to understand how to assess the difficulty of a text, then provide proper instruction and scaffolding that will help students read challenging texts. This chapter challenges the “Goldilocks rule”—the thought that teachers should aim to match students with texts that are neither too easy nor too difficult—and instead encourages them to find challenging texts that students can learn from with the proper instruction.

Methods

This chapter draws upon the rationale behind the construction of the Common Core State Standards and synthesizes research from the fields of cognition, psychology, and linguistics to reassess and reformulate the meaning of text complexity.

Key Findings

- **Deep comprehension** should be the goal of reading.
- **Reading should trigger automaticity**—“the systematic and automatic deployment of cognitive behaviors to make meaning of the text.”
- **Teachers should provide opportunities for “productive failure”** (where students struggle, but learn from the mistakes they make).
- **Students should be interpreting texts and reading multiple texts of different genres** on the same topic.
- **Students should read a text multiple times** to gain further insight.

Relevance to Shared Inquiry Programs

- Challenging, complex texts form the core of all Shared Inquiry programs, from kindergarten to college level and beyond.
- All K–12 Shared Inquiry programs require that students interpret the text and read multiple times in order to glean deeper meaning.

Where to Obtain This Study

Fisher, D., Frey, N., & Lapp, D. (2012). *Text complexity: Raising rigor in reading*. Newark, DE: International Reading Association.

Shanahan, T., Fisher, D., & Frey, N. (2012)
The Challenge of Challenging Text

Focus

This article explores the way that the Common Core State Standards have charged teachers with the task of helping students read and understand complex texts. The practitioner authors endeavor to help teachers understand that although text complexity was historically largely determined by vocabulary and sentence length, other factors such as coherence, organization, and background knowledge can impact a student's ability to unpack a text. Understanding the various ways that a text can be complex allows teachers to create literacy instruction that can better help students' reading comprehension.

Key Findings

- There are three key components to good literacy instruction:
 - » **Building skills:** Teachers can help students build decoding skills and develop fluency by having them read a text multiple times, emphasizing sentence structure and meaning during instruction. Students should pause to discuss the meaning of text and answer questions that require close reading.
 - » **Establishing purpose:** Teachers should help students understand what they are expected to learn and will encounter by reading the text.
 - » **Fostering motivation and persistence:** Teachers must be motivators and encourage students to keep trying, combining complex texts with effective instruction. As a result, students will begin close reading independently and deepen their subject knowledge.

Relevance to Shared Inquiry Programs

- The rationale behind the building-skills prong of this literacy instruction approach both echoes and justifies the significance of the Shared Inquiry core activity sequence, which requires students to read closely multiple times and answer questions with textual evidence.
- The first and second reading activities in the Shared Inquiry sequence in particular mirror the second prong of this instructional approach—establishing a purpose for reading.

Where to Obtain This Study

Shanahan, T., Fisher, D., & Frey, N. (2012). The challenge of challenging text. *Educational Leadership*, 69(6), 58–62.

Graham, S. & Hebert, M. (2011)

Writing to Read: A Meta-analysis of the Impact of Writing and Writing Instruction on Reading

Focus

Reading is critical to students' success in and out of school. One potential means for improving students' reading is writing. In this meta-analysis, the authors present evidence that writing about read material improves students' comprehension of it; that teaching students how to write improves their reading comprehension, reading fluency, and word reading; and that increasing how much students write enhances their reading comprehension.

Methods

Researchers reviewed 95 true and quasi-experiments that fit their criteria. They found and analyzed studies where a group of students who had written meaningfully about a text was compared to a control group of students who had only read—and possibly reread—a text.

Key Findings

- Overall, **students in grades 2–12 who wrote about a text showed better reading comprehension** than those who had only read the text.
- **Students who struggled with reading showed improvements in comprehension** when they wrote about what they had read.
- **Writing instruction** was shown to enhance student reading skills, including fluency and word reading.
- For students in grades 1–6, an **increase in writing instruction and opportunities to write about texts they had read** helped their reading comprehension.

Relevance to Shared Inquiry Programs

All Shared Inquiry programs, from kindergarten to college level and beyond, give students the opportunity to write in response to texts they have read multiple times. Students practice multiple forms of writing, including short-answer response to open-ended questions, expository and persuasive essays, and narratives.

Where to Obtain This Study

Graham, S. & Hebert, M. (2011). Writing to read: A meta-analysis of the impact of writing and writing instruction on reading. *Harvard Educational Review*, 81(4), 710–744.

Graham, S. & Hebert, M. (2010)

Writing to Read: Evidence for How Writing Can Improve Reading

Focus

This report presents findings on the impact of writing on reading comprehension. The authors hypothesize that writing about a text can help students with reading comprehension, presenting the various ways students can write about a text and highlighting how those ways impact reading skills and comprehension. The authors also present findings from previous studies on the topic and offer suggestions for implementing writing in classroom curricula.

Methods

Researchers summarized nearly 100 research texts centered on the impact of writing on reading comprehension. Researchers used these texts to delineate classroom writing practices known to substantially improve reading comprehension.

Key Findings

- In general, **comprehension of a text improved** when students wrote about it.
- When students were **taught how to compose a text**, their reading skills and comprehension improved.
- **The more often students wrote about a text**, the better they understood it.
- **Summarizing a text** increased reading comprehension of students in grades 3–12.
- **Taking notes based on a prompt** had a consistently positive impact on reading comprehension.
- **Answering a question about a text in writing** helped students remember their answers.

Relevance to Shared Inquiry Programs

All Shared Inquiry programs, both fiction and nonfiction, from kindergarten to college-level and beyond, give students regular opportunities to summarize, write about, and take notes on texts they have read multiple times.

Where to Obtain This Study

Graham, S. & Hebert, M. (2010). *Writing to read: Evidence for how writing can improve reading*. Washington, DC: Alliance for Excellent Education.

McIntyre, E. (2007)

Story Discussion in the Primary Grades: Balancing Authenticity and Explicit Teaching

Focus

This article posits that despite the fact that literature discussion groups have become a popular instructional alternative to traditional reading groups, teachers often have difficulty engaging students in discussion in ways that feel authentic. The author presents a method for incorporating discussion techniques that encourage authentic dialogue while not entirely abandoning traditional teaching techniques.

Methods

Two seasoned teachers were provided with scaffolding to help them incorporate “story discussions” in their classrooms. Both teachers received training, and their classroom interactions were videotaped several times over the course of the study.

Key Findings

- The teachers **emphasized telling, defining, and modeling at the beginnings of their lessons**—moves that appeared to be critical to students’ eventual participation.
- Gradually, the **teachers lessened their scaffolding, allowing students to lead** more of the discussion.
- **Eventually, students became more independent**, and the classroom became a more democratic space.
- The **respect, trust, critical thinking, and other positive behaviors** students learned in discussion were eventually fostered in the entire classroom.

Relevance to Shared Inquiry Programs

- Great Books professional learning offerings—including in-person training, webinars, and coaching, and classroom materials—give teachers comprehensive tools and materials to conduct successful literature discussions where engagement is authentic, respectful, and beneficial to students.
- Modeling and release of responsibility are integrated into all core Shared Inquiry activities, as are strategies for increasing critical thinking, open exchange of ideas, and respect for peers.

Where to Obtain This Study

McIntyre, E. (2007). Story discussion in the primary grades: Balancing authenticity and explicit teaching. *The Reading Teacher*, 60(7), 610–620.

Nystrand, M. (2006)*Research on the Role of Classroom Discourse as It Affects Reading Comprehension***Focus**

This article considers studies of classroom discussion in schools and offers insight on the effect of discussion on student learning. The authors contextualize the role of discussion in classrooms, highlighting that for over a century, US educators have primarily used a recitation model. Despite this, language arts instructors in particular value the discussion model and understand how it can facilitate student learning.

Methods

The authors culled and analyzed 49 studies that examined classroom discussion in schools and its impact on student learning.

Key Findings

- The most productive classroom discussion models were those where the teacher controlled the text and topic of discussion, yet **allowed students ample opportunity to respond to the text by interpreting it and expounding upon their own ideas**. This approach was especially helpful for low-performing students.
- **Whole-class discussion was found to promote reading comprehension when problematic and difficult passages were the focus of sustained interaction**. This was especially helpful for ELL students, who scored higher on comprehension assessments as a result of discussing texts.
- Eighth- and ninth-grade students who participated in class discussion **understood and remembered their readings and were better able to respond to the aesthetic aspects of a text**.
- As a result of participating in discussion, eighth- and ninth-grade students' **literacy skills were enhanced**, and their reading comprehension improved.

Relevance to Shared Inquiry Programs

- At the core of all Shared Inquiry programs, both fiction and nonfiction, is a Shared Inquiry discussion, which requires students to read, interpret, and collaboratively discuss their ideas about complicated texts.
- While the teacher most often selects the questions for discussion, students drive the conversation by sharing their answers, giving evidence for their ideas, and responding to the ideas of their peers. The teacher's role in Shared Inquiry discussion is to ask follow-up questions to extend student thinking and help them directly engage with one another.

Where to Obtain This Study

Nystrand, M. (2006). Research on the role of classroom discourse as it affects reading comprehension. *Research in the Teaching of English*, 40(4), 392–412.

Wenglinsky, H. (2004)*Facts or Critical Thinking Skills? What NAEP Results Say***Focus**

This article uses analyses of National Assessment of Educational Progress (NAEP) data to compare the effectiveness of teaching for meaning and teaching for basic skills on student performance.

Methods

The researcher took representative samples of NAEP data (from students in grades 4, 8, and 12), including multiple-choice answers and written responses that “assess both basic skills and critical thinking skills.” NAEP data that included background information about students, teachers, and instructional practices was also used. Using advanced statistical techniques, researchers were able to isolate instructional methods and compare them to student test scores.

Key Findings

- **Students who are taught advanced reasoning skills performed higher** on NAEP assessments.
- Initially, a linear approach to reading, where students learn basic skills, is important. However, once those skills have been established, **instruction should be focused on teaching for meaning** to help support the development of reading comprehension skills.
- **Fourth-grade students who had read and written about “real” books and stories** (as opposed to passages and basal readers) showed higher comprehension.
- **All students should have the chance to interpret and write about texts** they read.

Relevance to Shared Inquiry Programs

- Research shows that a model like Shared Inquiry, where students regularly interpret the meaning of authentic texts, will help students perform better on assessments and improve reading comprehension.
- Interpretive writing is integrated across the Shared Inquiry sequence. Students regularly respond to the text in writing during or after core activities.

Where to Obtain This Study

Wenglinsky, H. (2004). Facts or critical thinking skills? What NAEP results say. *Educational Leadership*, 62(1), 32–35.

Applebee, A.N., Langer, J.A., Nystrand, M., & Gamoran, A. (2003)
*Discussion-Based Approaches to Developing Understanding: Classroom Instruction
and Student Performance in Middle and High School English*

Focus

This article aims to elucidate the relationship between classroom discussion and student achievement. The authors explore whether students who experience classroom discussion learn to internalize the knowledge and skills necessary to engage in challenging literacy tasks on their own.

Methods

Researchers chose 19 schools in five states to observe. Four classes—one basic remedial class, two regular, and one honors class—were chosen in each school. Just over 1,100 students in grades 7, 8, 10, and 11 participated in the year-long study. The control group did not participate in classroom discussion, while the other group did. Researchers performed an assessment at the beginning of the school year and again at the end of the year, using the CLASS program to record classroom activities and interactions, and administering teacher and student questionnaires.

Key Findings

- **Students in the discussion-based classroom performed better on assessments** than those who did not.
- **Both high- and low-performing students benefited from classroom discussion** and its high academic expectations.
- **Students of different racial and ethnic backgrounds responded positively** to discussion-based instruction (especially Asian students).

Relevance to Shared Inquiry Programs

Discussion is the core activity in all Shared Inquiry programs, from kindergarten to college level and beyond. Great Books professional learning and classroom materials provide ample scaffolding for teachers and students to create and maintain a classroom culture of inquiry and discussion.

Where to Obtain This Study

Applebee, A.N., Langer, J.A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing understanding: Classroom instruction and student performance in middle and high school English. *American Educational Research Journal*, 40(3), 685–730.

Clark, A., Anderson, R. C., Kuo, L., Kim, I., Archodidou, A., & Nguyen-Jahiel, K. (2003)
Collaborative Reasoning: Expanding Ways for Children to Talk and Think in School

Focus

This article presents a framework called Collaborative Reasoning as a way to help teachers facilitate small-group classroom discussion. Collaborative reasoning is based upon Vygotskian theory; students participate in discussions where they learn and subsequently internalize the core aspects of argumentation.

Methods

Researchers conducted a three-year study in four fourth-grade classrooms that included students of varying ability. Two classes participated in Collaborative Reasoning discussions, where students used evidence and their personal experience to support their ideas. The other two classes received traditional instruction.

Key Findings

- In classrooms where Collaborative Reasoning discussion occurred:
 - » **Class participation increased**
 - » **Students stated and expanded their ideas**
 - » Students **learned to defend their positions, change their minds, and persuade others**, and later used these skills independently
 - » Students **used the argumentation skills they learned in discussion in their writing**
 - » Students developed **greater vocabulary and a greater interest in reading**
 - » **Disruptive behavior decreased**, and student leadership became more common
 - » **Students showed empathy** and appreciation for other points of view

Relevance to Shared Inquiry Programs

The hallmark of all Shared Inquiry programs is a collaborative discussion activity, based in part on the social learning theories of Dewey (1938) and Vygotsky (1986). Students both learn and hone the skills that the researcher found particularly effective (see above).

Where to Obtain This Study

Clark, A., Anderson, R. C., Kuo, L., Kim, I., Archodidou, A., & Nguyen-Jahiel, K. (2003). Collaborative reasoning: Expanding ways for children to talk and think in school. *Educational Psychology Review*, 15(2), 181-198.

Gambrell, L. B., Morrow, L. M., & Pennington, C. (2000)
*Early Childhood and Elementary Literature-Based Instruction:
Current Perspectives and Special Issues*

Focus

To support young children in developing literacy, high-quality works—both narrative and expository—are the core materials used during literature-based instruction. This type of instruction provides authentic learning experiences and activities by using literature to teach and foster literacy. This article reviews pertinent research about literature-based instruction and its importance in early literacy development.

Methods

Summarizes the findings of several studies that address the effectiveness of using high-quality literature as the core of literacy instruction in the early grades.

Key Findings

- **A literature-based literacy program in grades K–12 is appropriate for second-language learners and students from economically disadvantaged backgrounds.** Students who participated in such programs performed better on basic skills assessed via state-mandated tests.
- Engagement with literature in the classroom positively affects:
 - » **Development of oral and written language** in kindergarten students
 - » **Decoding and comprehension**
 - » **Development of reading strategies**
- **Second-grade students who experience literature in the classroom are better at “story retelling, story rewriting, and writing original stories”** than second-grade students who used only basal readers.
- Second-grade students who received literature-based instruction “demonstrated **high levels of engagement with books; developed skills in word identification, fluency, and comprehension; and grew in written-composition abilities.**”
- **Use and enjoyment of literature “increased dramatically”** when students engaged in daily literature activities.

Relevance to Shared Inquiry Programs

High-quality literary texts form the core of all Shared Inquiry fiction programs, from kindergarten to college level and beyond. Students engage in a variety of activities that are centered on interpreting these texts.

Where to Obtain This Study

Gambrell, L. B., Morrow, L. M., & Pennington, C. (2000). Early childhood and elementary literature-based instruction: Current perspectives and special issues. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Handbook of reading research: Volume III*. Mahwah, NJ: Erlbaum.

Sweeton, K. (2016)**The Impact of Inquiry-Based Learning at Two Arizona High Schools****Institutions**

Humanities and Sciences High School: Phoenix, Arizona; International Commerce High School: Phoenix, Arizona

Focus

The mission of the International Commerce High School and Humanities and Sciences High School is to academically prepare high school students (16–21 years of age) for occupational education, postsecondary education, social responsibility, employability, and lifelong learning.

Background

The International Commerce High School and the Humanities and Sciences High School, located in Phoenix, Arizona, were established as charter schools in 1997. The main tenet of the schools is the use of the Shared Inquiry™ methodology of instruction in all subjects. The majority of students enrolled in the International Commerce High school are seniors and fifth-, sixth-, and seventh-year seniors between 18 and 19 years old. Most students enrolled in the Humanities and Sciences High School are 16 to 18 years old.

Many of the students are returning to school after having left their previous high schools for a variety of reasons. They tend to be highly motivated to earn a high school diploma and embark on the next academic or occupational endeavor.

Curriculum

Both the International Commerce High School and the Humanities and Sciences High School provide a rigorous, accelerated academic program in language arts, literature, social studies, mathematics, natural sciences, and world languages. Inquiry-based teaching and learning is the primary method employed at the high schools. It provides a way for students to express ideas, listen to perspectives presented by others, and synthesize different viewpoints in order to reach a deeper understanding of all subjects across the curriculum.

The high schools prepare students for postsecondary education and occupational education through content standards that define the knowledge students should possess upon graduation. The standards also promote the more general, abstract goals of education by specifying what thinking and performance capabilities students should master. The high schools ensure that individual students have developed the ability to be independent, self-directed learners, and that students have the tools necessary to become lifelong learners.

Course of Study: Overview

The course of study for each student is driven by the high school graduation requirements outlined by the State Board of Education and the prerequisite requirements of the student's career objective as outlined in the community college certificate of completion program or associate's degree.

Students must complete courses in a prescribed order. Within each course students are required to demonstrate mastery of the section/unit/course objectives prior to moving on. Students may take as many versions of quizzes, examinations, and written assignments as necessary to achieve the minimum established requirements. Course instruction takes place in small groups and one-to-one with an instructor. Each course consists of six structurally similar units. Unit activities include: answering a prereading question; reading a passage, selection, or primary source document; taking notes; analyzing the text; completing written assignment(s); and finally, participating in a discussion about the selection based on interpretive questions. State graduation requirements in core courses must be completed prior to taking vocational and humanities elective courses.

The prereading question is designed to focus the student and prepare them to think about ideas or new information they are about to encounter. Next, students read the assigned course material twice and take notes. The second reading helps students reinforce or reevaluate opinions formed on first reading. New details may come to light during a second reading as well. Textual analysis adds depth to understanding and ensures that the students give full consideration to a selection's major interpretive issues.

Shared Inquiry discussion is the culmination of work in all sections/units in all courses. Discussion gives students the opportunity to express ideas, listen to perspectives presented by others, and synthesize different viewpoints to reach a deeper, more informed understanding of the text. Students learn to arrange details in logical order, support their ideas with evidence, listen thoughtfully, and respect the opinions of others.

After all coursework is completed, students take a competency examination and a grade of A, B, or C is given. (For more information about courses of study at the high schools, visit www.humsci.org.)

Assessment System

Both the International Commerce High School and the Humanities and Sciences High School use the American Council on Education's General Education Development (GED) Official Practice Tests (OPT) as competency examinations. Upon completion of language arts courses, students complete the Language Arts Reading Subtest which includes: fiction, nonfiction, poetry, and drama. They also take the Language Arts Writing Subtest which includes: grammar and usage, spelling, punctuation and capitalization, and essay construction. Upon completion of mathematics courses, students take the Mathematics Subtest which includes: number operations, number sense, measurement, geometry, data analysis, statistics, probability, and algebra. Upon completion of the science courses, students take the Science Subtest which includes: life science, earth and space science, and physical science. Upon completion of social studies courses, students take the Social Studies Subtest which includes: United States history, world history, geography, civics, and government.

The schools also use individual student portfolios to measure academic achievement. Portfolios include students' written work, as well as documentation of their oral work. All language arts, science, and social studies courses have writing assignments that include narrative, expository, and persuasive essays along with research assignments. All language arts, science, social studies, and mathematics

courses have oral assignments in the form of Shared Inquiry discussions. Students demonstrate mastery of course content through the discussions. Completed discussions are documented in the student portfolio. As preparation for assessing the discussions, faculty practice the Shared Inquiry process for two hours each Friday afternoon during the school year.

In addition to the assessments above, the Humanities and Sciences High School students also complete the ACCUPLACER test in order to assess college readiness as well as Advanced Placement examinations, the ACT (formerly the American College Testing program), the Scholastic Aptitude Test (SAT), and the College Level Examination Program.

All assessment results are documented in the student management system and in students' permanent files. (For more information about assessment at the high schools visit www.humsci.org.)

Key Findings

Data from the American Council on Education's General Education Development (GED) Official Practice Tests used upon entry and exit of the school show that students graduating in FY13 had an average entrance score of 404 and an average exit score of 475—an increase of 71 points. For students graduating in FY14 the average entrance score was 395 and the average exit score was 467—an increase of 72 points. And in FY15 the average entrance score was 387 and the average exit score was 486—an increase of 71 points. These increases indicate that the majority of students would pass the official General Education Development (GED) test.

**Evidence for the Effectiveness of Great Books
K–12 Programs and Inquiry-Based Learning**

Part III

**Measuring the Impact of Professional Learning
on Developing Teacher Proficiency in
Inquiry-Based Learning**

Gulamhussein, A. (2013)
*Teaching the Teachers: Effective Professional
Development in an Era of High Stakes Accountability*

Focus

This Center for Public Education report aims to provide a research-based answer to how districts can structure professional development so that teachers change their teaching practices, leading to increased student learning. It addresses the many facets of developing an effective professional development program, starting with an assessment of the strengths and weaknesses of current practice in light of new reform demands. Next, it reviews research about the structure of professional development to examine what truly changes teachers' work and student learning. Lastly, it explores what funding effective professional development might look like in a district.

Key Findings

- **The Common Core State Standards focus on teaching for critical thinking, but research shows that most classroom instruction is weak in this area.** Therefore, professional development needs to emphasize practices that will turn students into critical thinkers and problem solvers.
- **Effective professional development** abides by the following principles:
 - » **Duration of professional development must be significant and ongoing** to allow time for teachers to learn new strategies and grapple with implementation.
 - » **There must be support for a teacher during the implementation stage** that addresses the specific challenges of changing classroom practice.
 - » **Teachers' initial exposure to a concept should not be passive**, but rather should engage teachers through varied approaches so they can participate actively in making sense of a new practice.
 - » **Modeling has been found to be highly effective** when introducing a new concept and helping teachers understand a new practice.
 - » **Content presented to teachers should not be generic**, but instead should be grounded in the teacher's discipline (middle and high school teachers) or grade level (elementary school teachers).

Relevance to Shared Inquiry Programs

All Great Books professional learning is focused on structured, effective classroom instruction in critical thinking. Ongoing support in the form of face-to-face consultation and video coaching helps teachers master Shared Inquiry strategies and tailor the program to their students' needs. All Great Books professional learning features modeling, hands-on practice, and discipline- and grade-level-specific content.

Where to Obtain This Study

Gulamhussein, A. (2013). *Teaching the teachers: Effective professional development in an era of high stakes accountability*. Alexandria, VA: Center for Public Education.

DeMonte, J. (2013)

*High-Quality Professional Development for Teachers:
Supporting Teacher Training to Support Student Learning*

Focus

In this paper the Center for American Progress looks at what states and districts are doing that is working, and what policies are in place to support effective teacher-training activities. It attempts to map the current professional learning landscape to prompt ideas that can grow from the foundation—albeit small—that is already in place around professional learning.

Key Findings

- The most common problems with current professional development:
 - » **It is usually disconnected from everyday teaching practice.**
 - » **It is generic and unrelated to the curriculum** or to the specific instructional problems teachers face.
 - » **It is infrequent**—implemented as a one-shot event or led by an outside consultant who never returns after a single workshop.
- High-quality professional-learning opportunities include the following:
 - » **Alignment with school goals, state and district standards and assessments**, and other professional-learning activities
 - » **Focus on core content and modeling** of teaching strategies
 - » **Opportunities for active learning** of new teaching strategies
 - » **Opportunities for collaboration** between teachers
- Structures and features of professional development that researchers have found to be related to instructional improvement:
 - » **Sustained and regular activities**
 - » **“Job-embedded”**—grounded in and connected to daily teaching practice, designed to enhance teachers’ instructional practices and student learning, integrated into the workday, and part of a continuous improvement cycle
 - » **Involvement of collaboration and feedback from colleagues**
 - » **Inclusion of expert coaching**
 - » **Appropriate use of technology**

Relevance to Shared Inquiry Programs

Great Books professional learning and classroom materials align closely with school, state, and district standards and goals. Video coaching and face-to-face consultation opportunities allow for ongoing content- and skill-focused learning. Active, collaborative learning techniques and delivery systems let teachers interact with one another and practice the same inquiry skills they ask their students to practice.

Where to Obtain This Study

DeMonte, J. (2013). *High-quality professional development for teachers: Supporting teacher training to support student learning*. Washington, DC: Center for American Progress.

Cotton, K. (2001)

School Improvement Research Series Close-Up #5: Classroom Questioning

Focus

This research review focuses on the relationship between teachers' classroom questioning behaviors and a variety of student outcomes, including achievement, retention, and level of student participation.

Methods

The findings reported in this summary are drawn from 37 research documents on the subject of classroom questioning. One reports the results of both a review and a study, 2 are meta-analyses, 13 are reviews, and 21 are the reports of experimental or correlational studies. The student populations studied range from kindergarten through grade 12, with a large concentration in the upper elementary grades.

Key Findings

- **Preservice teachers are given inadequate training in developing questioning strategies** and some receive no training at all.
- **Better preservice training in the art of posing classroom questions, together with in-service training to sharpen teachers' questioning skills**, have potential for increasing students' classroom participation and achievement.
- Training teachers in the following questioning strategies is positively related to student achievement:
 - » **Asking "higher-cognitive" questions** (those which ask the student to mentally manipulate previously learned information to create an answer or to support an answer with logically-reasoned evidence)
 - » **Increasing teacher wait time** before and after students answer questions
 - » **Varying questioning behaviors and using approaches other than questioning during classroom discussions** (e.g., silence, making statements)

Relevance to Shared Inquiry Programs

All Great Books professional learning includes an intensive focus on teacher questioning strategies. Teachers learn how to both identify and pose effective questions, with an emphasis on those the researcher labels "higher-cognitive." They learn strategies for asking follow-up questions that prompt students to develop and clarify ideas, to provide textual evidence in support of their ideas, and to respond to their classmates. They also learn more about the value of wait time, patience, and focus in Shared Inquiry discussions.

Where to Obtain This Study

Cotton, K. (2001). *School improvement research series close-up #5: Classroom questioning*. Portland, OR: Northwest Regional Educational Laboratory.

Direct Endorsements of Great Books Professional Learning

Learning Forward reviewed evaluation results from school programs involving teacher development in order to identify programs in which teacher development led to significant, measurable student achievement.

Key Findings

Junior Great Books is cited as an effective content-specific staff development program that increases student achievement. Only 16 literacy programs were cited for elementary grades, and only 5 literacy programs were cited for all three school levels—elementary, middle, and high school. Students in a variety of settings made significant gains in reading as measured by achievement tests and documented in studies by independent researchers, district evaluators, and the Great Books Foundation.

Where to Obtain These Studies

Killion, J. (2003). Use these 6 keys to open doors to literacy. *Journal of Staff Development*, 24(2), 10–16.

Killion, J. (2002). *What works in the elementary grades: Results-based staff development*. Oxford, OH: National Staff Development Council.

Killion, J. (2002). *What works in the high school: Results-based staff development*. Oxford, OH: National Staff Development Council.

Killion, J. (1999). *What works in the middle: Results-based staff development*. Oxford, OH: National Staff Development Council.

Killion, J. (1998). Scaling the elusive summit. *Journal of Staff Development*, 19(4), 12–16.