How Reading Instruction and Reading Interventions Can Improve Student Outcomes

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There are research-based principles and practices that can be found in reading intervention research and applied in the middle grades to improve student outcomes. School leaders and teachers of all disciplines can consider using these strategies to provide effective reading instruction school-wide, as well as more intensive interventions for those students who struggle to learn to read and perform below grade level, including students who are English language learners (ELLs).

Middle School Matters' mission is two-fold: to transform the middle grades by promoting research-based tools, practices, and solutions and to drive the development of policies that lead to better student outcomes. Middle School Matters has two primary elements that will help us achieve these goals: 1) Develop practical tools and supports based on solid research for middle grade reform initiatives, school districts, and middle school campuses so they can drive research into their work and 2) Promote middle grades reform through an alliance with individuals who influence decisions made for/in middle grades.

In the middle grades, it is important to establish a school culture that recognizes every teacher is a reading teacher because reading is integral across subject areas. This paper provides several recommendations for supporting middle grade students in achieving success. School leaders can reflect on the instructional practices currently utilized at their middle schools in comparison to the research-based practices described. This reflection may help leaders identify ways to improve instruction and student support structures to increase the success of all students.

There are research-based principles and practices that can be found in reading intervention research and applied in the middle grades to improve student outcomes. School leaders and teachers of all disciplines can consider using these strategies to provide effective reading instruction school-wide, as well as more intensive interventions for those students who struggle to learn to read and perform below grade level, including students who are English language learners (ELLs). These research-based strategies will enable middle grades students to have the reading skills they need not only for high school success but also for post-secondary education and/or future careers. What follows are a few questions that school leaders might ask while providing instructional leadership, conducting classroom observations, and working with teachers, and Dr. Vaughn's response based on her knowledge of research in reading instruction and reading interventions.

QUESTION:
How can we establish school-wide practices for enhancing reading for understanding within content area instruction?

School leaders should promote the idea that providing appropriate and adequate reading instruction for middle grade students is the responsibility of all content area teachers, including those who teach English language arts, science, social studies, and math. Content area teachers have available several instructional practices that enhance reading comprehension without detracting from content instruction. One such practice is for teachers to identify high priority and/or high utility vocabulary words, provide explicit instruction of these words, and continually reinforce the mastery of the words through repeated exposures and multiple opportunities for practice. Teachers can use vocabulary maps that use the key word, show pictures of it, provide words that relate to the key word along with a student-friendly definition of it, and give examples of how the word can be used in context. It is also effective to teach key words through the use of mnemonic word associations or within the context of a structured discussion where students are expected to use the key words in their written and oral arguments.

By the time they reach the middle grades, however, students often have serious deficits in their vocabulary that cannot be remediated solely through individual word learning. Students also need to develop strategies that enable them to independently determine the meaning of unfamiliar words they encounter. Students can be taught to recognize the component morphemes (prefixes, roots, and suffixes) and how these contribute to the meaning of words. In this way students can learn to break words down into their constituent parts and infer meaning.

Another effective school-wide instructional practice is to have students ask questions while they are reading or when listening to the teacher read. The practice of asking self-generated questions requires students to be actively engaged in text, making it more likely they will understand and remember what was read. Teachers can prompt support students in developing their own questions by providing them with sample question stems:

· How did what happened at the end differ from _____?
· How would you compare _____ and _____?
· What do you think would happen if _____?
· Why do you think the author _____?

QUESTION:
How can teachers activate and build appropriate background knowledge to help students understand text content better?

Research suggests that background knowledge is second only to vocabulary in enhancing reading comprehension outcomes with secondary readers. By asking students to take a position on an important issue in the text, teachers can require students to consider whether text-based evidence is available to support that position. This technique requires that students identify related background knowledge in their memories, link the background knowledge to their statements, and provide adequate justification for their responses. Teachers can also prompt students with an anticipatory statement based on key concepts from upcoming text and ask students to look for evidence as they read to support or refute the statement. In particular, activating students' thinking about key concepts prior to reading helps ELLs and students with learning disabilities focus on what is most important in the text.

QUESTION:
How can teachers better help students use comprehension strategies while grappling with complex text?

Too often, adolescents move through text unaware that their comprehension has faltered. Teaching students to be more strategic in their reading increases comprehension while enabling them to better recognize when comprehension has broken down so that they can more successfully get themselves back on track. Content area teachers can instruct students to generate different levels of questions as they read to help them think about how key information is being communicated and how this information progresses across multiple paragraphs of text. Level 1 questions are the most literal, based on factual information located within a single area of the text, while Level 2 questions combine information found in two or more parts of the text. Level 3 questions are inferential, relating information in the text to something the reader has experienced or learned previously.

Content area teachers can also instruct students to generate main idea statements at regular intervals while reading text. An efficient method to help students recognize main idea is to ask them to identify the key "who" or "what" that is the focus in a given paragraph, and then to determine what was the most important information provided about that key who or what. Once students are able to identify this crucial information, teachers can ask that students succinctly state it in a single sentence representing the main idea of the text.

QUESTION:
How can we provide effective intensive reading interventions for students with reading problems?

Ideally, students enter the middle grades able to read grade-level text with comprehension; however, in reality this is often not the case. For students with demonstrated reading difficulties, providing interventions in the middle grades that directly address their vocabulary, comprehension, and word-reading challenges results in significant improvements in reading. Included in this group are ELLs whose difficulties go beyond what can be attributed to language proficiency levels.

Students who are two or more grade levels behind in reading need to be identified and then provided approximately 50 minutes per day of supplemental reading instruction, delivered by a trained professional. Through a diagnostic assessment, the reading instructor needs to determine whether the student's reading comprehension difficulties are related to (a) word reading problems (e.g., decoding unknown words); (b) word meaning problems (e.g., vocabulary); (c) insufficient background knowledge; (d) unusually slow text reading (e.g., fluency); and/or (e) inadequate use of reading comprehension strategies. Instruction should be based on student needs identified through this diagnostic assessment.

QUESTION:
How can teachers more effectively organize students into collaborative groups for reading tasks?

Well-structured collaborative groups can be an effective means for enhancing student involvement and learning. Collaborative groups should be designed to promote both individual and group accountability and can be used across all disciplines, including English language arts, science, social studies, and math. Research suggests that the use of collaborative grouping two or more times per week improves reading comprehension.

An example of a collaborative group activity that provides opportunities to practice reading comprehension is Collaborative Strategic Reading (CSR). Comprehension strategies in CSR include previewing text prior to reading, monitoring comprehension while reading by identifying challenging words or concepts, generating the main idea in your own words as you read, and summarizing key ideas after reading. Once students are independently proficient at each of the four comprehension strategies, they move into peer-led groups to practice these same strategies.

It is no small task to place students into well-functioning groups, and it requires thoughtful teacher planning. Groups for CSR should be heterogeneous and include approximately four students, one of whom can serve as a group leader. It is important that teachers assign students specific roles within a group and provide explicit instruction to teach students how to perform these roles. Group roles can and should be rotated periodically, with all group members eventually performing the task of every role. It is crucial that ELLs and students with learning disabilities be full participants and not relegated to an easier role every time.

SUMMARY
Extensive research and numerous syntheses have been conducted in the areas of reading instruction and intervention for middle grade students with reading difficulties. This question-and-answer segment provides information from extant research for improving reading achievement for all students as well as those who are experiencing reading difficulties. Providing opportunities for students to read and practice these comprehension strategies in every subject every day will enhance the development of the reading skills they need to become better readers and more accomplished students.

Middle School Matters worked with Dr. Vaughn and other research experts to find principles and practices supported by the best available research evidence to assist schools in reaching their goals. Areas of research have been compiled in a user-friendly Middle School Matters Field Guide (www.middleschoolinstitute.org) to walk school personnel through an assessment of what they are currently doing and whether this current practice is aligned with what research has shown to be effective. Through this iterative process of data collection and reflection, school personnel are able to develop a plan of action for realizing positive change within their school.

REFERENCES

To learn more about these recommendations, we provide a list of a few resources. The complete reference list is available as part of the Middle School Matters Research Platform.

Baumann, J., Edwards, E. C., Boland, E., & Olejnik, S. . (2003). Vocabulary tricks: Effects of instruction in morphology and context on fifth-grade students' ability to derive and infer word meanings. *American Educational Research Journal*, 40, 447–94.

Best, R. M., Floyd, R. G., & McNamara, D. S. (2008). Differential competencies contributing to children's comprehension of narrative and expository texts. *Reading Psychology*, 29, 137–64.

Brown, R. (2002). Straddling two worlds: Self-directed comprehension instruction for middle schoolers. In Block, C. C., & Pressley, M. (Eds.), *Comprehension instruction: Research-based best practices* (pp. 337-350). New York: Guilford.

Cromley, J. G., & Azevedo, R. (2007). Testing and refining the direct and inferential mediation model of reading comprehension. *Journal of Educational Psychology*, 99, 311–25.

Diamond, L., & Gutlohn, L. (2006). *Vocabulary handbook*. Berkeley, CA: Consortium on Reading Excellence.

Edmonds, M. S., Vaughn, S., Wexler, J., Reutebuch, C., Cable, A., Tackett, K. K., & Schnakenberg, J. W. (2009). A synthesis of reading interventions and effects on reading comprehension outcomes for older struggling readers. *Review of Educational Research*, 79, 262-300. doi: 10.3102/0034654308325998.

Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities. *Review of Educational Research*, 71, 279–230.

Guthrie, J. T., & Wigfield, A. (2000). Engagement and motivation in reading. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson, & R. Barr (Eds.), *Reading research handbook* (Vol. 3, pp. 403–424). Mahwah, NJ: Erlbaum.

Hairrell, A., Rupley, W. H., & Simmons, D. (2011). The state of vocabulary research. *Literacy Research and Instruction*, 50, 253-271.

Levin, J. R. (2008). The unmistakable professional promise of a young educational psychology research and scholar. *Educational Psychologist*, 43, 70–85.

Mastropieri, M. A., Scruggs, T. E., Levin, J. R., Gaffney, J., & McLoone, B. (1985). Mnemonic vocabulary instruction for learning disabled students. *Learning Disability Quarterly*, 8, 57–63.

Mastropieri, M. A., Scruggs, T. E., Spencer, V., & Fontana, J. (2003). Promoting success in high school world history: Peer tutoring versus guided notes. *Learning Disabilities Research & Practice*, 18, 52–65.

Riccomini, P. J., Sanders, S., & Jones, J. (2008). The key to enhancing students' mathematical vocabulary knowledge. *Journal on School Educational Technology*, 4, 1–7.

REFERENCES

Scammacca, N., Roberts, G., Vaughn, S., Edmonds, M., Wexler, J., Reutebuch, C. K., & Torgesen, J. K. (2007). *Interventions for adolescent struggling readers: A meta-analysis with implications for practice*. Portsmouth, NH: RMC Research Corporation, Center on Instruction.

Smith, B. L., Holliday, W. G., & Austin, H. W. (2010). Students' comprehension of science textbooks using a question-based reading strategy. *Journal of Research in Science Teaching*, 47, 363–79.

Snow, C. E., Lawrence, J., & White, C. (2009). Generating knowledge of academic language among urban middle school students. *Journal of Research on Educational Effectiveness*, 2, 325–44.

Surber, J.R., & Schroeder, M. (2007). Effect of prior domain knowledge and headings on processing of informative text. *Contemporary Educational Psychology*, 32, 485–98.

Therrien, W. J., Wickstron, K., & Jones, I. K. (2006). Effect of a combined repeated reading and question generation intervention on reading achievement. *Learning Disabilities Research & Practice*, 21, 89–97.

Vaughn, S., Cirino, P. T., Wanzek, J., Wexler, J., Fletcher, J. M., Denton, C. A., . . . Francis, D. J. (2010). Response to intervention for middle school students with reading difficulties: Effects of a primary and secondary intervention. *School Psychology Review*, 39, 3-21.

Vaughn, S., Klingner, J. K., Swanson, E. A., Boardman, A. G., Roberts, G., Mohammed, S. S., & Stillman-Spisak, S. J. (2011). Efficacy of collaborative strategic reading with middle school students. *American Educational Research Journal*, 48, 938-964. doi: 10.3102/0002831211410305.

Vaughn, S., Martinez, L. R., Linan-Thompson, S., Reutebuch, C. K., Carlson, C. D., & Francis, D. J. (2009). Enhancing social studies vocabulary and comprehension for seventh-grade English language learners: Findings from two experimental studies. *Journal of Research on Educational Effectiveness*, 2, 297–324.

Vaughn, S., Wanzek, J., Wexler, J., Barth, A., Cirino, P. T., Fletcher, J., . . . Francis, D. J. (2010). The relative effects of group size on reading progress of older students with reading difficulties. *Reading and Writing: An Interdisciplinary Journal 23*, 931- 956. doi: 10.1007/s11145-009-9183-9.

Vaughn, S., Wexler, J., Leroux, A. J., Roberts, G., Denton, C. A., Barth, A. E., & Fletcher, J. M. (2012). Effects of intensive reading intervention for eighth grade students with persistently inadequate response to intervention. *Journal of Learning Disabilities*, 45, 515-525.

Veit, D. T., Scruggs, T. E., & Mastropieri, M. A. (1986). Extended mnemonic instruction with learning disabled students. *Journal of Educational Psychology*, 78, 300–08.

Wolfe, M. B., & Mienko, J. A. (2007). Learning and memory of factual content from narrative and expository text. *British Journal of Educational Psychology*, 77, 541–64.