SUMMARY OF
Guided Independent Reading
An Examination of the Reading Practice Database
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Introduction

The following is a summary of the 72-page research report, *Guided Independent Reading: An Examination of the Reading Practice Database and the Scientific Research Supporting Guided Independent Reading as Implemented in Reading Renaissance* (Paul, 2003) (GIR). The GIR report summarizes the theoretical and evidence base for Accelerated Reader (AR) Best Practices and builds upon this evidence through statistical examination of Renaissance Learning’s Reading Practice Database (RPD). The RPD contains pre- and posttest STAR Reading scores and Accelerated Reader reading practice records for 50,823 students in grades 1–12 in 24 states who read more than 3 million books during the 2001–2002 school year. The RPD is, we believe, the largest database ever assembled on student independent literature-based reading.¹

Also included in GIR is a history of the development of AR, AR Best Practices, and the scientific research supporting both.

We prepared this summary to make the information and complex statistical analysis more accessible as well as to perhaps whet the appetite of educators to read the full report. The full report is available at no charge online from http://doc.renlearn.com/KMNet/R001541030GD656E.pdf or by request to (800) 338-4204.

¹ As of March 2011, the database contains records for 4,782,912 students who read and tested on 99,069,201 books.
Study Background and Findings

The 2000 National Reading Panel (NRP) report by the National Institute of Child Health and Human Development (NICHD), which greatly influenced the federal No Child Left Behind Act and Reading First legislation, provided substantial scientific support for the practices recommended by Renaissance Learning. These include reading aloud, paired reading, and direct instruction of vocabulary, phonics, phonemic awareness, fluency, and comprehension.

The NRP, however, called into question the practice of “students reading individually on their own with little or no specific feedback.” In other words, the NRP did not find scientific evidence for setting aside classroom time for unguided independent reading of library books, also called “free reading.” Unfortunately, the NRP report did not go on to address “guided” independent reading with feedback, the kind of independent literature-based reading recommended by Renaissance Learning and supported by the Accelerated Reader daily progress-monitoring assessment system.

It is unfortunate the NRP did not investigate guided independent reading, as the scientific research supporting this practice is very strong. One purpose of the Guided Independent Reading study was to fill this gap by reviewing the current research on guided independent reading and by adding to the evidence base through the statistical examination of the Reading Practice Database. The results are quite exciting. We confirmed most of our recommendations for guided independent reading using Accelerated Reader. We also discovered some new, even startling, things. The principal findings include:

1. Guided independent reading practice accelerates reading growth for all students, regardless of level of reading achievement. (Unguided independent reading practice, on the other hand, may not accelerate reading growth for many students.) The key to guiding reading practice is information feedback.

2. To successfully guide independent reading practice using the feedback provided by AR, teachers and students must focus primarily on the average percent correct scored on AR Reading Practice Quizzes. The higher the average percent correct, the higher the reading gains.

3. Increased reading practice time leads to greater reading growth when the reading practice is carefully guided. This is true for students of all achievement levels in all grades. However, the law of diminishing returns applies. Ninety minutes of in-school engaged reading time is only slightly more beneficial than 60 minutes.

Although the GIR report focuses on guided independent reading, AR also provides feedback on books read aloud, paired reading, textbook reading, magazine reading, and student understanding of higher-order thinking skills such as main idea, inference, and characterization.
4. Teachers are the single most important factor in accelerating reading growth. Effective use of the data provided by AR enables teachers to accelerate reading growth for all students, including high- and low-achieving readers.

5. Reading behaviors differ between girls and boys. Lower average percent correct and higher rates of nonfiction reading may partially explain why boys tend to score lower than girls on reading achievement tests.

6. In the primary grades, low-achieving students benefit more from guided independent reading practice than high-achieving students. After fourth grade, however, both low- and high-achieving students benefit equally from guided independent reading.

7. Nonfiction reading is negatively correlated to reading gains and may be more difficult for students than fiction reading. However, many teachers are able to overcome this difficulty and help their students successfully read nonfiction books.

8. High implementation of AR Best Practices, particularly in Renaissance-certified classrooms, leads to the greatest growth for all students.

The following is a discussion of each of these eight points.
1. Guided independent reading practice accelerates reading growth for all students, regardless of level of reading achievement. (Unguided independent reading practice, on the other hand, may not accelerate reading growth for many students.) The key to guiding reading practice is information feedback.

While this finding was not startling, the picture that emerged from examination of the RPD greatly clarified the positive effects of guided independent reading. Shown in Figure 1 is a graph that summarizes one of the more important tables from the full report.

**Figure 1: Impact of Guided Independent Reading and Average Percent Correct**

2001–02 School Year, Grades 2–12 Combined (n = 45,670)

This graph vividly shows that when students are left to “just read” with little or no guidance (as indicated by a low average percent correct on AR quizzes), their reading scores can actually decline. The active guidance, intervention, and instruction provided by teachers is necessary to ensure adequate comprehension and reading gains.
2. To successfully guide independent reading practice using the feedback provided by AR, teachers and students must focus primarily on the average percent correct scored on AR Reading Practice Quizzes. The higher the average percent correct, the higher the reading gains.

Figure 1 also shows the importance of high levels of successful independent reading as defined by high average percent correct on AR quizzes. Renaissance Learning recommends teachers guide and instruct students so they achieve an average of 85% or higher correct on their AR quizzes. The 85% rule was generally confirmed by the GIR study. Figure 2 shows the difference in student achievement above and below 85% correct.

**Figure 2: Average Gain Above and Below 85% Correct**
Students in Grades 2–12 with >20 Minutes Daily Reading Time (n = 30,907)
We also found reading achievement improves steadily as students’ average percent correct on AR quizzes increases (up to approximately 97%). Therefore, the previous recommendation that teachers should guide students to read more difficult books when average percent correct exceeds 92% correct was not confirmed. As a result, we now recommend students average 85% or higher on AR quizzes instead of the previous 85–92% range and stress with teachers that averages of higher than 90% are associated with greater gains (see Figure 3).

**Figure 3: Average Gain Below 85%, 85%–90%, and Above 90% Correct**

Students in Grades 4–12 with >20 Minutes Daily Reading Time (n = 18,051)

<table>
<thead>
<tr>
<th>Average Percent Correct on AR Quizzes</th>
<th>NCE Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 85%</td>
<td>-1.2</td>
</tr>
<tr>
<td>85% to 90%</td>
<td>1.3</td>
</tr>
<tr>
<td>Above 90%</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Analysis of the RPD did confirm the recommended AR book levels (ZPD ranges) and also the predicted shape of the ZPD curve (see Figure 4). (ZPD stands for “zone of proximal development”—the level of practice that is challenging but not frustrating and leads to optimum growth.) Improvement in reading achievement drops when students read too many books above or below their recommended, individualized ZPD ranges. On the other hand, we found the ZPD curve to be fairly flat and, while statistically significant, not highly predictive of gain.
The relatively flat ZPD curve is good news because it shows student achievement can improve by reading a wide range of books of varying levels of difficulty. The data indicate that teachers should allow students a fair amount of freedom to choose a wide range of books and follow their interests. This increases student motivation and makes reading more successful. As has always been recommended by Renaissance Learning, the most important metric for teachers to monitor is average percent correct on AR quizzes, followed by engaged reading time as measured by AR points, and finally, ZPD. In other words, students' guided independent reading should focus first on quality, then quantity, and then level.

Figure 4: Scatter Plot of NCE Change as a Function of Challenge Index

Students in Grades 3–12 With at Least 20 Minutes of Daily Engaged Reading Time

The Challenge Index is equal to (actual average book level) ÷ (predicted average book level from regression by pretest NCE level).
3. Increased reading practice time leads to greater reading growth when the reading practice is carefully guided. This is true for students of all achievement levels in all grades. However, the law of diminishing returns applies. Ninety minutes of in-school engaged reading time is only slightly more beneficial than 60 minutes.

Our recommendation has been for schools to set aside 60 minutes per day for guided independent reading (less in grades K–2 when reading aloud and paired reading is emphasized more than independent reading). The GIR study confirmed that 60 minutes leads to high average reading gains and shows students can make significant gains reading 20–30 minutes when they maintain averages of 90% or higher (see Figure 1, p. 4.) It also showed the law of diminishing returns applies; 90 minutes is only marginally better than 60. The striking graph in Figure 5 is taken directly from the GIR study.

**Figure 5: NCE Change by Engaged Reading Time Range, Grades 2–12 (n = 45,670)**

![Graph showing NCE Change by Engaged Reading Time Range](image)

- NCE Change
- Engaged Reading Time in Minutes
- 10 or Fewer
- 11–20
- 21–30
- 31–40
- 41–50
- 51–60
- 61–70
- 71–80
- More than 80

-1.20
-0.63
1.59
3.06
3.71
3.90
4.29
4.62
4.99
4. Teachers are the single most important factor in accelerating reading growth. Effective use of the data provided by AR enables teachers to accelerate reading growth for all students, including high- and low-achieving readers.

This is perhaps one of our most important findings. The NRP speculated that what explains how much reading practice students do is their initial level of reading achievement. In other words, good readers read more because they were good readers to begin with. What we found in the GIR study, though, is that when teachers are implementing AR according to recommended AR Best Practices, it is the teacher that largely determines how much reading students do—not initial level of reading achievement. On average, the portion of the variance in engaged reading time that is explained by the teacher and classroom the student is assigned to is more than 10 times the portion explained by the student's initial level of reading achievement. In high-implementing classrooms, students with low levels of reading achievement read almost the same amount of time as students with high levels of reading achievement. This means teachers can have a huge impact on motivation to read, thereby leveling the playing field and closing the gap in student achievement.
Reading behaviors differ between girls and boys. Lower average percent correct and higher rates of nonfiction reading may partially explain why boys tend to score lower than girls on reading achievement tests.

We found statistically significant differences ($p \leq 0.001$) in the reading behaviors of boys compared to girls in grades 1–12 combined. Figure 6 shows a bar chart summarizing these differences.

**Figure 6: Gender Differences in Reading Behavior**

Students in Grades 1–12 With Known Gender ($n = 40,932$)

Boys tend to score lower on their AR quizzes, spend less engaged time reading, and read less fiction than girls. Since all three factors are correlated to reading achievement, these differences in behavior could explain, in part, why girls tend to do better on tests of reading achievement than boys. This is important information for teachers who can affect each of these factors and help boys perform better.

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4 For further explanation of the effects of fiction versus nonfiction reading, see p. 12.
6. In the primary grades, low-achieving students benefit more from guided independent reading practice than high-achieving students. After fourth grade, however, both low- and high-achieving students benefit equally from guided independent reading.

We found, overall, in grades 1–12 combined, students of all achievement levels improved at about the same rate for equal amounts of engaged reading time. However, when we disaggregated the data by grade level, we found that while guided independent reading causes improvements in reading achievement at all grade levels, low-achieving students improve faster than high-achieving students in grades 1–4. After fourth grade, however, both low- and high-achieving students gain at about the same rate for equal amounts of guided independent reading. While these effects need to be explored further, we speculate the root cause is the difference in the oral language experiences between low- and high-achieving students. Oral language experience may set the upper limit on our ability to close the gap through guided independent reading.

Interestingly, even though the rate of growth caused by independent reading was highest in the early grades, the actual effect size (the relative impact of guided independent reading practice) was greatest above fourth grade. This shows guided independent reading practice is valuable at all grade levels even though the gap is likely to close faster in the earlier grades.
7. Nonfiction reading is negatively correlated to reading gains and may be more difficult for students than fiction reading. However, many teachers are able to overcome this difficulty and help their students successfully read nonfiction books.

This finding was particularly surprising. GIR is the only research study we are aware of that has investigated the differential effects of fiction versus nonfiction reading on reading achievement. The reading of nonfiction books is highly recommended by virtually all reading experts (Dreher, 1999; Parkes, 2001; Snow, 2002). Most adult reading is of nonfiction material. Also, it is hard to see how students can excel in social studies and science without reading a significant amount of nonfiction. Renaissance Learning’s recommendation prior to GIR was that nonfiction reading account for 20% of AR points. Yet RPD data showed, on average, at all grade levels, that the higher the percent nonfiction reading a student does, the lower the gain in reading achievement. In light of this finding, the recommendation for nonfiction reading has been lowered to 10–15% of AR points.

One possible explanation for the negative effect of nonfiction reading is nonfiction reading is more difficult than (or at least different from) fiction reading. Also, schools often have a smaller selection of nonfiction books. Regardless, one would expect teachers could make a big difference by instructing students on how to approach nonfiction reading and by ensuring an adequate selection of nonfiction books. Indeed, we found many teachers in the RPD database were able to help their students achieve relatively high average percent correct on nonfiction reading along with strong reading gains.
8. High implementation of AR Best Practices, particularly in Renaissance-certified classrooms, leads to the greatest growth for all students.

The RPD contains implementation data on a wide variety of classrooms, from those certified as being good implementers of AR Best Practices to non-certified and non-implementing classrooms. We measure the level of AR implementation through the implementation index, which ranges from 0 to 1. In the RPD, certified classrooms in grades 2–8 implemented at 0.65, non-certified at 0.31, and non-implementing at 0.03.

One of the most common and accepted ways to statistically measure the effectiveness of an educational program is through a statistic called “effect size.” Generally, an effect size of 0.5 represents a moderate impact.

Figure 7 illustrates the large effect sizes for reading gains in grades 2–8 (combined) in certified classrooms versus non-certified and non-implementing classrooms.

Figure 7: Effect Size for Certified Classrooms Versus Non-Certified and Low-Implementing Classrooms
Classrooms in Grades 2–8 with >12 and <30 Students (n = 1,806)

<table>
<thead>
<tr>
<th>Effect Size for NCE</th>
<th>Change Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified vs. Non-Certified</td>
<td>0.49</td>
</tr>
<tr>
<td>Certified vs. Non-Implementing</td>
<td>1.04</td>
</tr>
</tbody>
</table>

5 Renaissance Certification is a professional recognition program for educators implementing Accelerated Reader according to Renaissance Learning’s research-based AR Best Practices.
6 Non-implementing classrooms are those with less than 10 minutes of daily engaged reading time.
Conclusion

The National Reading Panel report (NICHD, 2000) provided much support for the principles behind Accelerated Reader and the recommended AR Best Practices for classroom implementation. However, it failed to specifically examine the practice of guided independent reading. The Guided Independent Reading study was intended to help fill that gap. The full report discusses the scientific research literature (the theoretical foundations) supporting guided independent reading and adds to the evidence base through a statistical examination of Renaissance Learning’s Reading Practice Database. This summary of the complete 72-page study highlights several of the new insights gained.

We found that while letting students “just read” on their own can lower student reading achievement relative to their peers, highly successful independent reading practice is necessary to improve reading achievement. Successful independent reading requires active guidance and instruction from teachers supported by information feedback from AR.

The recommended AR Best Practices were generally supported by the GIR study, including allocating up to 60 minutes per day of classroom time for guided independent reading. We found, however, the law of diminishing returns applies and allocating 90 minutes of in-school time for reading practice will yield only slightly greater gains than 20, 30, or 60 minutes. Additionally, the average percent correct cap of 92% was not supported. Students continue to show reading gains with average percent correct on AR quizzes up to approximately 97%.

We found boys not only read less than girls at all grade levels but also scored lower average percent correct on AR quizzes, suggesting they read less carefully. Boys also tend to read more nonfiction. When combined with our finding that nonfiction reading tends to be correlated with lower reading gains, this may partly explain why boys consistently lag behind girls in reading achievement.

We found when teachers properly implement AR to support guided independent reading, it is a highly effective and powerful method for developing students who read well and are well read. Implementing AR with high integrity—according to AR Best Practices—leads to the greatest growth in reading achievement.

If you are interested in more comprehensive information, the full Guided Independent Reading report is available at no charge online from http://doc.renlearn.com/KMNet/R001541030GD656E.pdf or by request to (800) 338-4204.
References


Full bibliography from the Guided Independent Reading report


The Institute for Academic Excellence. (1993). National study of literature-based reading: How literature-based reading improves both reading and math ability. Wisconsin Rapids, WI: Author. Available by request to research@renlearn.com


About Renaissance Learning

Renaissance Learning, Inc., is a leading provider of technology-based school improvement and student assessment programs for K–12 schools. Adopted by more than 70,000 schools, Renaissance Learning’s tools provide daily formative assessment and periodic progress-monitoring technology to enhance core curriculum, support differentiated instruction, and personalize practice in reading, writing, and math. Renaissance Learning products and school improvement programs help educators make the practice component of their existing curriculum more effective by providing tools to personalize practice and easily manage the daily activities for students of all levels. As a result, teachers using Renaissance Learning products and programs accelerate learning, get more satisfaction from teaching, and help students achieve higher test scores on state and national tests. Renaissance Learning has seven U.S. locations and subsidiaries in Canada and the United Kingdom.