

RESULTS FROM A
THREE-YEAR STATEWIDE
IMPLEMENTATION OF
READING RENAISSANCE
IN IDAHO

**Including a review of the first two years of
Reading Renaissance Implementation**



A Renaissance Learning Monograph

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Renaissance Learning
PO Box 45016
Madison, WI 53744-5016
(800) 200-4848

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Executive Summary

Reading education in Idaho changed significantly in 1998 when the J.A. and Kathryn Albertson Foundation generously provided \$27 million to improve the reading performance of Idaho students through a major three-year *Reading Initiative*. The foundation's grant provided funds for reading programs in Idaho schools during the 1998–1999, 1999–2000, and 2000–2001 school years. The grant enabled many schools to implement Reading Renaissance, a component of the Renaissance school improvement process.

To fulfill the foundation's requirement for vendor evaluations and to meet internal research and product development needs, Renaissance Learning evaluated the success of Reading Renaissance in Idaho during each year of the grant.

The first-year evaluation (1998–1999) included data from 12,984 students in grades 1 through 9 from 50 schools. Using normal curve equivalents (NCEs) from the STAR Reading standardized, norm-referenced reading test to measure student progress, the study found that despite less than full implementation of Reading Renaissance, students gained a statistically significant ($p < .001$) 1.84 NCEs, on average.

The 1998–1999 evaluation also highlighted the importance of the quality and level of Reading Renaissance implementation: Students in schools with greater levels of Reading Renaissance implementation experienced more reading skill improvement. Students in schools ($n=4,855$) using Accelerated Reader (a software component of Reading Renaissance), but where no teachers attended Reading Renaissance training gained an average of 1.33 NCEs. Students ($n=6,755$) in schools where teachers attended training gained 2.08 NCEs, and students ($n=1,374$) in schools with at least one Renaissance-certified Model Classroom¹ gained 2.46 NCEs.

The 1999–2000 evaluation included 7,876 students in grades 1 through 9 from 37 schools. The demographic characteristics of these schools closely matched the characteristics of schools across the state. On average, students in the study gained three percentiles between STAR Reading pretests and post-tests.

The importance of implementation was evident in the second-year evaluation. Students ($n=1,077$) in schools with less than five Reading Renaissance-trained teachers gained one percentile, while students ($n=6,550$) in schools with more than five Reading Renaissance-trained teachers gained three percentiles. An average of nine percentiles were gained by students ($n=249$) who attended the sole school in the second-year study which had Renaissance-certified Model Classrooms. Longitudinal results from 1,053 students in 10 schools indicate that gains were sustained over two school years. Overall, students gained six percentiles between a STAR Reading pretest during the 1998–1999 school year and a post-test during the 1999–2000 school year.

The third-year evaluation (2000–2001) included 21,534 students in grades 1 through 9 from 76 schools. The sample included students from schools that participated in the previous two studies, students from districts that were part of a special foundation-sponsored focus group, and students from 10 randomly selected districts. Over 70% of schools in the sample provided data. The demographic characteristics of participating schools closely matched those of schools across Idaho.

¹ The Renaissance Certification program provides professional recognition to educators who have met clear, objective Renaissance implementation standards. Model Classroom Certification acknowledges classrooms on the path to full Reading Renaissance implementation.

Key results from the third evaluation include:

- Students experienced accelerated growth in reading achievement. On average, students gained four percentiles between STAR Reading pretests and post-tests. Grades one through four had the highest growth (29, 9, 4, and 5 percentiles, respectively). Grades five through nine had less growth (0, -2, 2, 1, and 2 percentiles, respectively).
- Growth in reading achievement varied by level of implementation. Students in schools with Renaissance-certified Model Classrooms gained 7 percentiles. Students in schools with more than 10 Renaissance-trained educators gained 5 percentiles. And students with 10 or fewer Renaissance-trained educators gained 2 percentiles.
- Growth in reading achievement varied by the *quality* of students' reading practice. Students maintaining a high Accelerated Reader (AR) quiz percent correct gained more than other students. This was especially true of students with low pretest scores (below the 50th percentile).
- Growth in reading achievement varied by the *quantity* students' reading practice. Students with low pretest scores who earned more than the median number of AR points for their grade gained 16 percentiles. Those earning fewer than the median gained 8 percentiles.
- Gains in student achievement were sustained over multiple school years. Longitudinal analysis tracked a subset of students over two and three school years. From the 1998–1999 school year to the 2000–2001 school year students (n=401) gained, on average, 7 percentiles. From the 1999–2000 school year to the 2000–2001 school year students (n=1,168) gained, on average, 7 percentiles.
- On average students read 127% more than a national sample of students.
- Level of implementation had a substantial effect on student reading quantity and quality. Students in schools with Renaissance-certified Model Classrooms read for an average of 34 minutes each day. Students in schools with more than 10

Renaissance-trained teachers read for an average of 20 minutes each day. And, students in schools with 10 or fewer Renaissance-trained teachers read for an average of 17 minutes each day.

- The percentage of students maintaining a high AR quiz percent correct score (at or above 85%) differed among groups of students. Sixty-nine percent of students in schools with Model Classrooms maintained a high percent correct average on AR quizzes. This amount dropped to 53% of students in schools with more than 10 Renaissance-trained educators, and to 47% of students in schools with 10 or fewer Renaissance-trained educators.

Introduction

In 1998, as part of a major three-year *Reading Initiative*, the J.A. and Kathryn Albertson Foundation generously provided \$27 million to improve the reading performance of all Idaho elementary, middle, and junior high school students. The foundation's grant provided funds for reading programs in Idaho schools during the 1998–1999, 1999–2000, and 2000–2001 school years. The grant enabled many schools to train their educators in Renaissance techniques and subsequently implement Reading Renaissance, a component of the Renaissance school improvement process (see Appendix A).

The Renaissance school improvement process is based on seven principles:

- *Increased practice time.* Renaissance products and strategies help educators give students more time to practice essential skills—especially reading, math, and writing.
- *Appropriate level.* Renaissance focuses practice in each student's zone of proximal development—the level that is challenging and enjoyable and leads to optimum growth.
- *Information feedback.* Renaissance gives teachers and students immediate, accurate information to help them manage practice and target instruction.

- *Personalized goal setting.* Renaissance products make it easy for teachers and students to set and monitor progress toward challenging but achievable goals.
- *Best use of technology.* In Renaissance, computers do what computers do best—store and report information—giving students more time to learn and teachers more time to teach.
- *Research-proven effectiveness.* Renaissance Learning develops and releases only products that have been shown by research to help educators accelerate learning.
- *Universal success.* Renaissance ensures that every teacher and every student can achieve measurable success with all curricula and standards.

Reading Renaissance incorporates these principles into a program combining motivation strategies, effective teaching techniques, and learning information systems software to help educators monitor and guide reading practice. Students spend 60 minutes a day being read to, reading with a peer or adult tutor, or reading books independently. Then they use Accelerated Reader reading management software to take a 5-, 10-, or 20-question selected response quiz that assesses their comprehension of the book. Quizzes are designed to follow the story grammar and assess literal comprehension. A student who has read the book will pass the quiz. Teachers guide student book selection and ensure they are reading in their zone of proximal development (ZPD), the range of book difficulty that will be neither too easy nor too difficult. For optimal reading improvement, research has shown that students should maintain an average of 85 percent correct on Accelerated Reader Reading Practice Quizzes. Teachers monitor and guide student reading, intervene when students struggle, and provide brief, focused lessons on pertinent skills (Power Lessons).

To fulfill the foundation’s requirements for vendor evaluations and to meet internal research and product development needs, Renaissance Learning conducted three annual studies to assess the reading progress achieved by schools that implemented

Reading Renaissance. This report summarizes previous research on the effectiveness of reading practice and Reading Renaissance followed by results from the annual evaluations.

Previous Studies of Reading Practice and Reading Renaissance

One of the largest studies of reading ever conducted collected reading performance data from 659,214 K–12 students during the 1994–1995 school year (Paul, 1996; Topping & Paul, 1999). This study found that, on average, K–12 students spent only seven minutes per day practicing reading. In addition, it revealed that reading practice declines markedly after fifth grade. For example, high school students spend about as much time practicing reading as kindergarten students—only three minutes per day. Furthermore, when ranked according to the amount of reading they do, students in the top five percent read 144 times more than students in the bottom five percent. The study also found that students in states in the top quartile on the National Assessment of Educational Progress reading test engaged in 59% more reading practice than those in states in the bottom quartile.

The value of reading practice and general exposure to lexically rich print media for the development of reading skills and other cognitive abilities is outlined in an article by Cunningham & Stanovich (1998). Their findings from several longitudinal studies show that children’s books and popular magazines offer nearly three times as many opportunities for vocabulary development as does television or adult conversation. They cite a study by Anderson, Wilson, & Fielding (1998) that shows children who score at the 90th percentile on standardized tests read 228 times more words per year outside of school than children who score at the 10th percentile. Two crucial messages emerge: 1) the importance of early development of decoding and word recognition, and 2) all children, regardless of their achievement levels, should be provided with as many reading experiences as

possible. Guthrie, Wigfield, Metsala, & Cox (1999) further support these findings by showing that students' reading volume and motivation to read are significant predictors of text comprehension.

The National Research Council examined factors that put children at risk of poor reading and identified effective instruction methods for pre-school and early grades to reduce the risk (Snow, Burns, & Griffin, 1998). The council summarized the work of several renowned researchers who emphasize the importance of practicing reading through daily reading of a variety of texts at a level that is challenging but beneath the student's frustration level. The council's own recommendations for early literacy programs include attention to the development of comprehension and fluency through daily reading, either independently, in pairs, in groups, or by being read aloud to.

A more recent report from the National Reading Panel (2000) summarizes the panel's review of hundreds of studies in the areas of alphabets, fluency, comprehension, and the impact of teacher education and computer technology on reading instruction. The panel found that guided, repeated oral reading procedures that include guidance from teachers, peers, or parents have a significant and positive impact on word recognition, fluency, and comprehension. This finding supports the use of Duolog Reading, or paired reading, a guided reading technique used in Reading Renaissance. The panel also reviewed research on the effect of independent silent reading on reading fluency. Although it found the research on *unguided* independent reading inconclusive, they did not directly address the concept of *guided* reading practice. However, other research has found that when teachers monitor and guide reading practice, higher levels of reading practice can lead to higher reading achievement (Topping & Sanders, 2000).

In addition to more general research about reading practice that supports Reading Renaissance, there is a large and growing body of research specifically demonstrating the effectiveness of Reading

Renaissance. Students in classrooms that adopt Accelerated Reader do better in reading and other subjects, including math, science, social studies, and writing (Institute for Academic Excellence, 1996, 1997; Volland, Topping, & Evans, 1999). Attendance is also better at schools using Accelerated Reader.

Several additional independent evaluations and theses have documented the positive effects of Reading Renaissance on student achievement and attitudes. For example, a five-year longitudinal study tracked the progress of 50 ninth-grade Accelerated Reader students who used the program since third grade (Peak & Dewalt, 1994). The Accelerated Reader students showed more improvement in reading attitudes and higher reading scores on the California Achievement Test (CAT) than a control group of 50 students. In addition, an evaluation of the use of Accelerated Reader with 755 students in grades 3 through 5 in a southeastern Virginia school district found that students with high levels of Accelerated Reader usage gained 2.24 grade equivalent points on the Gates-MacGinitie Test while students with average and low usage gained 1.52 and 0.73 respectively (Howard, 1999).

An evaluation of Reading Renaissance implementation during the 2000–2001 school year in a large Texas school district found that 3,649 students in the district's elementary schools gained, on average, seven percentiles on STAR Reading tests during the school year (Smith & Clark, 2001). Students in grades four and five exhibited accelerated growth on the Texas Assessment of Academic Skills with gains on the Texas Learning Index (TLI) from spring 1999 to spring 2000 of 4.1 and 3.0 points respectively. Schools in the district also compared favorably to similar schools around the state. The Texas Education Agency defines a comparable improvement group for each school in the state. The group consists of 40 schools that are demographically most similar to the target school. Each comparable improvement group is then ranked by amount of improvement in TLI over the previous year's scores. Among the 10 schools from this

district included in the comparable improvement analysis, seven ranked in the top quartile for growth and three ranked in the next highest quartile.

Sanders & Topping (1999) collected 1996–1997 Accelerated Reader and Tennessee Value-Added Assessment System (TVAAS) data from nearly 63,000 Tennessee students in grades 2 through 8. The study found that student reading volume and percent correct on Accelerated Reader quizzes have a positive impact on test score improvement. In addition, the study found that students whose teachers carefully monitored and guided their reading practice experienced more growth in reading achievement than students whose teachers did not monitor their reading practice. Teachers completing Reading Renaissance training were significantly more effective than teachers who had not completed training. Reading Renaissance Model-certified classrooms also showed higher effectiveness than non-model classrooms in fourth and fifth grades. The study also confirmed the value of maintaining at least 85 percent correct on Accelerated Reader Reading Practice Quizzes as recommended by Reading Renaissance (based on Vygotsky’s zone of proximal development principles—see Institute for Academic Excellence, 1999 for more detail).

Previous Evaluations of Reading Renaissance in Idaho

To evaluate the effect of Reading Renaissance on reading achievement during the 1998–1999 and 1999–2000 school years, all Idaho elementary, middle, and junior high schools were asked to voluntarily share their students’ reading practice and reading achievement data. Only a small proportion of Idaho schools submitted complete data for their students for these studies.

The 1998–1999 school year evaluation included data from 12,984 students in grades 1 through 9 in 50 schools. Using normal curve equivalents (NCEs) from STAR Reading to measure student progress,

the study found that despite less than full implementation of Reading Renaissance, students gained a statistically significant ($p < .001$) 1.84 NCEs on average. NCEs, like percentile scores, compares a student’s performance on a test to that of a national sample of students in the same grade. When students experience an increase in NCEs it means they are advancing more than that national peer group.

This evaluation also highlighted the importance of the quality and level of Reading Renaissance implementation: Students in schools with greater levels of Reading Renaissance implementation experienced more reading skill improvement. Students ($n=4,855$) in schools using Accelerated Reader, but where no teachers had attended Reading Renaissance training gained 1.33 NCEs, on average, while students ($n=6,755$) in schools where teachers attended training gained 2.08 NCEs, and students ($n=1,374$) in schools with at least one Renaissance-certified Model Classroom gained 2.46 NCEs. These differences were statistically significant ($p < .001$).

The 1999–2000 school year evaluation tracked progress using STAR Reading percentile scores. The study included 7,876 students in grades 1 through 9 from 37 schools. The demographic characteristics of schools included in the study closely matched the characteristics of elementary, middle, and junior high schools across the state.

Overall, students in the study gained an average of three percentiles between STAR Reading tests. Again, this is indicative of accelerated growth in reading achievement. The second year evaluation also showed the importance of implementation: Students ($n=1,077$) in schools with less than five Reading Renaissance-trained teachers gained one percentile, while students ($n=6,550$) in schools with more than five Reading Renaissance-trained teachers gained three percentiles. Students ($n=249$) in the single school in the study with educators achieving Renaissance Certification gained an average of nine percentiles. Longitudinal results

from 1,053 students in 10 schools indicate that gains were sustained over two school years. Overall, students gained an average of six percentiles between a pretest during the 1998–1999 school year and a post-test during the 1999–2000 school year.

2000–2001 School Year Evaluation Design

For the 2000–2001 (third year) evaluation, only a subset of schools in Idaho were invited to participate. These included: 1) Schools that were members of the eight districts that the foundation specifically examined in their evaluation (hereafter called focus group schools); 2) Schools that submitted data for the previous two evaluations; and 3) Schools that were members of 10 other districts that were randomly selected from the state of Idaho. Intensive follow-up helped ensure a high response rate from schools. School principals were contacted by letter and by phone during April and May 2001. District superintendents were notified by letter. Out of the schools invited to participate in the evaluation 71%, 75%, and 77% respectively, submitted usable data.

Part of this sample was selected at random from schools in Idaho and was demographically similar

to the state as a whole. Results of this study, therefore, are likely to be representative of results throughout the state. Table 1 compares the demographic characteristics of schools included in this study to schools in Idaho statewide.

Table 2 shows the number of students and schools at each grade level included in the evaluation. To be included in the study, students must have both Accelerated Reader and STAR Reading data and have taken two STAR Reading tests at least 90 days apart.

Table 2. Study Participation by Grade

Grade	All Districts		Focus Group Districts	
	Students	Schools	Students	Schools
1	1,167	44	710	24
2	2,818	54	1,689	31
3	3,171	52	1,906	30
4	3,225	53	2,057	30
5	3,107	52	2,138	32
6	2,842	43	1,884	23
7	2,686	15	1,795	10
8	1,912	14	1,518	9
9	606	6	297	2
All Grades	21,534	76	13,994	45

Table 1. Demographic Characteristics of Idaho Schools

	State of Idaho	All Schools in Study	Focus Group Schools
Poverty Rate			
% of Schools with 0–5.9% Poverty Rate	1.3%	0.0%	0.0%
% of Schools with 6–15.9% Poverty Rate	51.4%	53.4%	39.4%
% of Schools with 16–29.9% Poverty Rate	40.5%	42.5%	57.6%
% of Schools with 30% or More Poverty Rate	2.3%	0.0%	0.0%
Unclassified	4.6%	4.1%	3.0%
Race/Ethnicity²			
Asian American/Pacific Islander	0.5%	1.1%	0.8%
Black/African American	0.2%	0.5%	0.0%
Hispanic American/Latino	4.6%	5.7%	6.2%
Native American/American Indian	1.4%	1.7%	2.3%
White	93.2%	92.4%	93.0%

Source: Market Data Retrieval (2001)

² Race/ethnicity categories do not sum to 100% because some students are classified in more than one category or are not classified at all.

2000–2001 Evaluation Results

The effect of Reading Renaissance implementation on Idaho students' reading practice and reading achievement was evaluated. The data collected from schools in this study show that Reading Renaissance had a positive effect on reading practice and achievement especially where Reading Renaissance was more fully and carefully implemented.

Reading Practice Results

Table 3 shows various measures of access to and use of books by students in this study³. Students in grades one through four read the most books—more than 40 books per student, on average, in seven months. However, the number of books does not take into account the increasing length of books at higher reading levels. Accelerated Reader points earned is a measure of reading quantity that incorporates both the length (in number of words) and the reading difficulty level of the book⁴. Students earn a fraction of the point value of the book based on their percent correct on the quiz. Table 3 shows that the median number of points earned increases steadily through grade six. However, students at all grades are reading below the number of points

expected based on the goal-setting chart (see Appendix B).

The goal-setting chart provides estimates of points expected based on 60 minutes of reading practice each day. These estimates are based on extensive research conducted by Renaissance Learning (Institute for Academic Excellence, 1999). The amount of time students spent engaged in reading practice between their pretests and post-tests can be estimated using the information from the goal-setting chart, the actual median number of points earned, and the average grade equivalent level from STAR Reading tests (see Table 5). Table 3 shows estimated daily reading practice time by grade level. On average, students are getting less than the recommended one hour of reading practice a day. While average daily reading time is less than the level recommended by Reading Renaissance, it is still much higher than the typical amount of time spent reading in American classrooms⁵. This indicates that while students in this study are reading less than Reading Renaissance recommends they are reading more than might be expected based on national averages.

Table 3. Reading Practice Quantity, Quality, and Challenge

Grade	Number of Students	Average Number of Books Read	Median AR Points Earned	Estimated Minutes Spent Reading Daily	Percent Above Typical Time Spent Reading	Average AR Quiz Percent Correct	Percent of Students Averaging At Least 85% Correct	Average Book Level
1	1,167	43	14	17	240%	87%	73%	1.8
2	2,818	67	27	23	191%	85%	66%	2.6
3	3,171	56	33	24	140%	84%	57%	3.3
4	3,225	54	48	29	127%	83%	52%	4.0
5	3,107	39	52	24	88%	82%	52%	4.7
6	2,842	18	53	22	108%	81%	50%	5.1
7	2,686	13	47	16	93%	81%	49%	5.7
8	1,912	12	41	14	84%	78%	45%	5.8
9	606	8	24	8	122%	78%	44%	6.0
All	21,534	38	41	22	127%	82%	54%	4.3

³ Table 3 shows results for all schools in the study. Results for the focus group schools are very similar and can be found in Appendix C. The similarity is not surprising given that students in focus group schools make up 65% of the entire sample.

⁴ AR Points = (10 + reading level) x (words in book/100,000).

⁵ A study of 659,214 students in grades K through 12 during the 1994–1995 school year, in 2,193 schools across the nation, found that students, on average, read for 7.1 minutes a day. Averages by grade range from 5 minutes or less in grades 1, 2, and 9 through 12 to almost 13 minutes in grades 4 and 5 (Paul, 1996). See Appendix D for the complete table.

Amount of daily reading time means little if students are not engaging in high-quality, or successful, reading practice. That is, students should be carefully reading books in the appropriate range of difficulty or ZPD. Reading books at the appropriate level is vital for student motivation and reading success. Research has found that students who maintain an average Accelerated Reader quiz percent correct of 85 or better experience the most improvement in reading skills (Topping & Sanders, 2000). Table 3 shows that many students are not maintaining the recommended average percent correct. In fact, just over half of all students are in this range. At the same time, average book level is below what would be expected based on average grade equivalent and the goal-setting chart.

Another way to examine levels of student reading in Idaho is to compare the results of students in schools where teachers have exhibited different levels of involvement with Reading Renaissance. For example, schools differ on the number of educators that have attended Reading Renaissance professional development seminars and whether or not educators have attained Renaissance Master or Model Certification in Reading⁶. Since nearly all schools have sent at least one educator to training, the following three categories are used to describe levels of implementation: 1) schools with Model Classroom Certification; 2) schools that sent more than 10 educators to training, but do not have any Model Classroom Certifications and; 3) schools that sent 10 or fewer educators to training and do not have any Model Classroom Certifications.

As Table 4 shows, students in schools with Model Classroom Certifications in Reading spend more time reading and have higher average AR quiz scores than students in other schools. Similarly, students in schools with more Reading Renaissance-trained educators are engaged in more reading practice and are more successful in their reading practice than students in schools with fewer trained educators.

Table 4. Quantity and Quality of Reading Practice by Level of Implementation

Level of Implementation	Number of Students	Estimated Daily Reading Time in Minutes	Percent of Students Averaging At Least 85% Correct
Schools with Model Classrooms	3,385	34	69%
Schools with more than 10 Reading Renaissance-trained educators	13,399	20	53%
Schools with 10 or fewer Reading Renaissance-trained educators	4,750	17	47%

Reading Achievement Results

Change in reading achievement was measured using STAR Reading, a computer-adaptive, norm referenced reading assessment that provides an accurate measure of students' reading comprehension in less than 10 minutes. STAR Reading includes a bank of over 1,100 vocabulary-in-context items and more than 260 authentic text passage items. When students take a test, they begin with an item at the low end of their ability level. As students answer questions correctly, the program presents more difficult items. When a student makes an error, the program presents a less difficult item. This Adaptive Branching testing method is both efficient and powerful because it produces valid and reliable results. In addition, the program can create five or six unique "forms" so the same student can be tested often without encountering the same items (Renaissance Learning, 2000).

STAR Reading provides several measures of student test results including percentile score. When students experience growth in achievement over time

⁶ Since only one school in the study had any Master Classroom Certifications, only Model Classroom Certification was used to distinguish levels of implementation.

that is consistent with the improvement of a national sample of students in their grade, their percentile score will remain the same from one STAR Reading administration to a later one. When students improve their reading skills at a faster rate than their peers, their percentile score increases over the school year, indicating that these students are experiencing accelerated growth.

Table 5 shows the change in STAR Reading test scores across the 2000–2001 school year for all students included in the study. Among these students there is moderately accelerated growth in reading achievement in grades one through four. Grades five through nine show little change in percentile score, which means they experienced typical improvement in reading scores. That is, they progressed no faster or slower than the national sample of their peers.

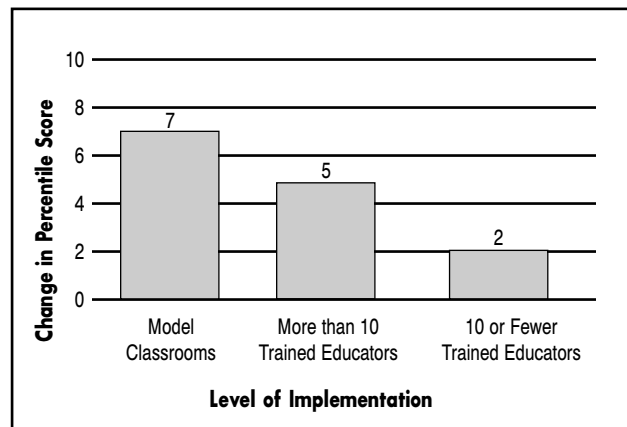
The previous section showed that students in schools with different levels of involvement with Reading Renaissance differed in their reading quantity and quality (daily reading time and percent correct). Differences in reading achievement gains by these categories again highlight the importance of the quality and level of Reading Renaissance implementation. More dramatic gains are seen in schools with Model Classrooms and schools that have sent more educators to training. Graph 1 shows that, on average, students in schools with Model Classrooms show accelerated improvement on their STAR Reading tests. Scores increased by seven percentile points for students in schools with Model Classrooms, five percentile points for students in schools with more than 10 Renaissance-trained educators, and two percentile points in schools with 10 or fewer trained educators. These overall differences between each group are statistically significant ($p < .01$). Appendix E contains the complete achievement data by grade for each category.

Research has shown that implementation integrity—the degree to which an educational intervention is executed as intended by its designer—varies

Table 5. 2000–2001 Reading Achievement Growth

Grade	Number of Students	Months Between Tests	Average Pretest Score	Average Post-Test Score	Change
1	1,167	5.2	38	67	29
2	2,818	7.0	50	59	9
3	3,171	7.0	49	53	4
4	3,225	7.2	50	55	5
5	3,107	7.0	54	54	0
6	2,842	7.3	50	48	-2
7	2,686	7.4	49	51	2
8	1,912	7.5	49	50	1
9	606	6.4	44	46	2
All	21,534	7.0	49	54	5

Graph 1. Change in Percentile Score by Levels of Renaissance Implementation



positively with measured change (Gresham et al., 1993). That is, level of implementation can affect the likelihood of successfully attaining the intended outcomes. Reading Renaissance recommends 60 minutes of high-quality, or successful (as evidenced by AR quiz percent correct), daily reading practice. The importance of following these Renaissance recommendations becomes even more evident when the sample of students is divided into groups based on quality and quantity of reading practice.

Research has shown that students who engage in highly successful reading practice (shown by maintaining an average AR quiz percent correct of 85 or better) experience the most improvement in reading skills (Topping & Sanders, 2000). Those

Table 6. Reading Achievement Growth by AR Quiz Percent Correct

% correct on quizzes	Number of Students	Pretest Score	Post-Test Score	Change
<60	1,336	27	27	0
60–68	1,315	34	36	2
69–77	2,559	36	39	3
78–84	4,329	42	46	4
85–92	8,209	54	60	6
93–100	3,786	69	74	5

Table 7. Reading Achievement Growth by AR Quiz Percent Correct for Students With Low Pretest Scores

% correct on quizzes	Number of Students	Pretest Score	Post-Test Score	Change
<60	999	16	19	3
60–68	907	20	25	5
69–77	1,652	20	26	6
78–84	2,480	21	30	9
85–92	3,520	23	38	15
93–100	981	22	43	21

Table 8. Reading Achievement Growth by Number of Points Earned

Points Earned	Number of Students	Pretest Score	Post-Test Score	Change
At or Above Study Median	10,752	62	66	4
Below Study Median	10,782	37	41	4

Table 9. Reading Achievement Growth by Number of Points Earned for Students with Low Pretest Scores

Points Earned	Number of Students	Pretest Score	Post-Test Score	Change
At or Above Study Median	3,772	24	40	16
Below Study Median	6,767	19	27	8

results are corroborated in Table 6. It shows change in percentile score for students who maintained a higher average AR quiz percent correct compared to students with a lower average AR quiz percent correct. Growth in reading scores steadily increases as average AR quiz percent correct increases. The highest growth occurs among students with an average AR percent correct at or above 85. This pattern is accentuated when the analysis is limited to students with low (below the 50th percentile) pretest scores (refer to Table 7). Students with low pretest scores who read successfully in their zone of proximal development (as evidenced by AR quiz percent correct) experience greatly accelerated growth in their reading achievement. The increase in their percentile score from pretest to post-test indicates they are advancing faster than a comparable group of their peers.

Tables 8 and 9 show change in STAR Reading percentile score for students engaged in different amounts of reading practice—students earning above and below the median number of AR points earned by students in the study. Among all students, there is little difference in the amount of achievement gain between students earning more and fewer points. However, among students with low pretest scores, students who read more (as measured by AR points) gained 16 percentile points while students who read less gained 8 percentile points. These comparisons show that students who were fully engaged with successful reading practice experienced greater gains in reading achievement than students less engaged in reading practice.

Three-Year Comparative Study

An important aspect of any program evaluation is sustainability. That is, do students maintain and continue their improvements in the quantity and quality of their reading practice and in their reading achievement?

To address this issue schools were invited to participate in each year of a three-year comparative study so individual students could be tracked. Unfortunately, student mobility, normal school transitions, and the many demands placed on schools made it difficult to collect data from a sufficient number of schools each year in order to have a large longitudinal sample of students. Data from all three years is available for 401 students. Results for these students are included, but are of limited generalizability. Data from the 1999–2000 and 2000–2001 school years is available for 1,168 students.

Reading Practice Results

A comparison of students' reading practice data from the first three years of the *Reading Initiative* shows that among students in grades one through four during the 1998–1999 school year, students' access to and use of books increased with each year that they were exposed to Reading Renaissance. Tables 10 and 11 show that the number of books read, the number of points earned, the estimated daily reading time, and the percent above typical daily reading time, generally increased from 1998 through 2001 for students in grades one through four. The data for students in grade five during the 1998–1999 school year show that reading tended to drop off as the students progressed through grade seven.

Table 10. Average Number of Books Read and Median AR Points Earned 1998–2001

Grade 1998–1999	Number of Students	Average Number of Books Read 1998–1999	Average Number of Books Read 1999–2000	Average Number of Books Read 2000–2001	Median AR Points Earned 1998–1999	Median AR Points Earned 1999–2000	Median AR Points Earned 2000–2001
1	84	18	53	67	6	25	37
2	107	58	52	58	23	33	80
3	91	23	25	21	12	53	59
4	94	17	17	24	19	36	88
5	25	10	14	12	13	65	42
All	401	29	36	41	15	39	66

Table 11. Estimated Daily Reading Time 1998–2001

Grade 1998–1999	Number of Students	Estimated Minutes Spent Reading Daily 1998–1999	Estimated Minutes Spent Reading Daily 1999–2000	Estimated Minutes Spent Reading Daily 2000–2001	% Above Typical Time Spent Reading 1998–1999	% Above Typical Time Spent Reading 1999–2000	% Above Typical Time Spent Reading 2000–2001
1	84	7	20	29	72%	149%	192%
2	107	22	24	43	180%	137%	235%
3	91	11	30	26	5%	131%	99%
4	94	13	17	33	-1%	29%	210%
5	25	6	22	18	-57%	104%	41%
All	401	13	23	32	60%	111%	177%

Table 12. Accelerated Reader Quiz Percent Correct 1998–2001

Grade 1998-1999	Number of Students	Average AR Quiz Percent Correct 1998-1999	Average AR Quiz Percent Correct 1999-2000	Average AR Quiz Percent Correct 2000-2001	% of Students Averaging At Least 85% Correct 1998-1999	% of Students Averaging At Least 85% Correct 1999-2000	% of Students Averaging At Least 85% Correct 2000-2001
1	84	83%	87%	87%	58%	65%	67%
2	107	80%	86%	84%	46%	64%	56%
3	91	86%	87%	85%	64%	62%	59%
4	94	83%	80%	85%	52%	39%	64%
5	25	79%	82%	82%	36%	56%	60%
All	401	83%	85%	85%	53%	57%	61%

While students’ quantity of reading practice increased steadily, changes in students’ quality of reading practice were less consistent (Table 12). Overall, the percentage of students with an average AR quiz percent correct of at least 85 increased from 53% during the 1998–1999 school year to 61% during the 2000–2001 school year. Year-to-year increases for individual grades were less consistent. In addition, in every grade at least one-third of students had an average percent correct below 85. This means a large proportion of students were averaging below the level recommended by Reading Renaissance, which is shown by research to positively relate to high levels of achievement gains.

Finally, the average level of books read by students increased each year for students in grades one through four during the 1998–1999 school year (Table 13). These results indicate that students generally progressed to reading more, and harder, books during subsequent years of the program, but need to maintain a focus on reading carefully.

Reading Achievement Results

Three-year results show that students who were in grades one through three during the 1998–1999 school year experienced accelerated growth in reading achievement from 1998 to 2001 (Table 14). Fourth- and fifth-grade students experienced essentially no change. This does not mean that

Table 13. Average Book Reading Level 1998–2001

Grade 1998-1999	Number of Students	Average Book Level 1998-1999	Average Book Level 1999-2000	Average Book Level 2000-2001
1	84	1.8	2.7	3.6
2	107	2.6	3.3	4.1
3	91	3.5	4.4	5.0
4	94	4.2	4.9	5.0
5	25	4.6	5.6	5.7
All	401	3.1	4.0	4.5

the students’ reading skills weren’t improving. It simply means that they weren’t improving faster than a national peer group. These students started off with a high percentile score and maintained their advanced reading skills over three years.

Test score data from just the 1999–2000 and 2000–2001 school years is available for a larger group of students and again indicates accelerated growth for most grades over the two years (Table 15). Grades two and five show no change in percentile score, which again means they kept up with their peers on reading improvement, but did not improve any faster. Students in other grades, including grades six through eight experienced accelerated reading improvement over the two-year period.

This two- and three-year growth occurred despite less than full implementation of Reading Renaissance. Implementation improved in some

Table 14. Reading Achievement Growth 1998–2001

Grade 1998-1999	Number of Students	Average Pretest Score 1998-1999	Average Post-Test Score 1998-1999	Average Pretest Score 1999-2000	Average Post-Test Score 1999-2000	Average Pretest Score 2000-2001	Average Post-Test Score 2000-2001	1998-2001 Percentile Change
1	84	55	73	67	65	69	67	12
2	107	49	58	54	52	58	58	9
3	91	63	70	68	70	72	72	9
4	94	62	59	61	61	63	61	-1
5	25	63	66	59	63	60	63	0
All	401	57	65	62	62	65	64	7

Table 15. Reading Achievement Growth 1999–2001

Grade 1999-2000	Number of Students	Average Pretest Score 1999-2000	Average Post-Test Score 1999-2000	Average Pretest Score 2000-2001	Average Post-Test Score 2000-2001	1999-2001 Percentile Change
1	196	45	66	62	67	22
2	158	59	59	60	60	1
3	187	46	46	52	54	8
4	174	61	65	64	64	3
5	128	59	58	61	58	-1
6	33	54	58	58	59	5
7	177	47	46	51	51	4
8	115	51	49	54	55	4
All	1,168	52	56	58	59	7

areas and became less satisfactory in others. For example, more students maintained an average AR quiz percent correct of 85 or better during the 2000–2001 school year than during previous years, but 40% of students were still below this recommended level. For students starting off in grades one through four, average daily reading time increased, but was still well below the recommended 60 minutes a day. This indicates that given full implementation of Reading Renaissance, students would maintain even larger gains over two- and three-year periods.

Conclusions

Overall, implementation of Reading Renaissance in Idaho has positively affected the quantity and quality of students' reading practice and the rate of student reading achievement gains. Data from Accelerated Reader on students' reading practice show that students participating in Reading Renaissance are reading more than the national average. In addition, over the three years of the study, students starting out in grades one through four increased their daily reading time each year.

Reading Renaissance also had a positive effect on achievement. Students participating in Reading Renaissance during the 2000–2001 school year, on average, gained five percentiles, while students in grades one through four gained substantially more. This represents accelerated growth: Students are improving more rapidly than a national sample of their peers. In addition, longitudinal results show that gains are maintained across three years. On average, students gained seven percentiles between their 1998 pretest and their 2001 post-test. Students in grades one through three during the 1998–1999 school year experienced even larger gains across the three years. The two-year longitudinal results also show accelerated growth for students in grades six through eight during the 1999–2000 school year.

Improvements in student achievement varied by level of Reading Renaissance implementation. Students in schools with Model Classrooms in Reading experienced the most gain during the 2000–2001 school year. And, students in schools with more than 10 Reading Renaissance-trained teachers showed more improvement than students in schools with fewer trained teachers. These classifications of schools are indicators of successful classroom practices. The data showed that students in schools with Model Classrooms and Renaissance-trained educators engaged in more reading practice and more successful reading practice. These students also showed the most gains in their reading achievement.

Additional analysis confirmed the importance of getting enough reading practice in a range that ensures success. Students who read more and experienced success in their reading practice showed more improvement on reading achievement scores. Students who maintained an average AR percent correct of 85 or higher experienced the most reading achievement growth. The benefits were even more pronounced among students with low pretest scores. Also, among students with low pretest scores, students who read more, as measured by points earned, experienced more growth in reading achievement.

While Idaho students experienced great gains in reading practice and achievement, the data show that continued improvements in Reading Renaissance implementation would result in even greater gains. Sixty minutes of daily reading practice, monitoring student reading to ensure they are reading at the appropriate level, and striving for Model and Master Classroom Certification can improve student reading achievement beyond the levels seen during the three years of the *Reading Initiative*.

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APPENDIX A

During the 1999–2000 and 2000–2001 school years, the foundation sponsored 28 seminars Idaho (in addition to funding software purchases). Below is a breakdown of the number of seminars held and the number of educators trained.

Participation in Foundation-Sponsored Renaissance Professional Development Seminars

Seminar Description	Number of Seminars	Number of Educators
501: Introduction to Reading Renaissance	15	1,990
601: Advanced Reading Renaissance	10	1,337
505: The Reading Renaissance Librarian	3	359

APPENDIX B

Goal-Setting Chart

Grade Equivalent Score	ZPD		Point Values Expected from 60 minutes per day of reading practice			
	Average	Range	Week	6 Weeks	9 Weeks	Year
1.0	1.5	1.0–2.0	1.7	10	15	60
1.5	2.0	1.5–2.5	1.9	11	17	68
2.0	2.5	2.0–3.0	2.1	13	19	75
2.5	2.8	2.3–3.3	2.3	14	21	84
3.0	3.1	2.6–3.6	2.5	15	23	90
3.5	3.4	2.8–4.0	2.7	16	24	97
4.0	3.7	3.1–4.3	2.8	17	25	100
4.5	4.1	3.4–4.7	3.2	19	29	116
5.0	4.4	3.7–5.1	3.5	21	32	125
5.5	4.8	4.0–5.5	3.9	23	35	140
6.0	5.1	4.3–5.9	4.2	25	39	150
6.5	5.5	4.6–6.3	4.6	28	41	164
7.0	5.8	4.9–6.7	4.9	29	44	175
7.5	6.1	5.1–7.1	5.3	32	48	192
8.0	6.3	5.2–7.5	5.6	34	50	200
9.0	6.6	5.3–8.3	6.3	38	57	225
10.0	6.9	5.4–9.1	6.9	41	62	250
11.0	7.2	5.5–9.9	7.6	46	68	275
12.0	7.5	5.6–10.7	8.3	50	75	300

This chart is a guideline only. Both grade-equivalent scores and book-readability levels are approximations. Use your professional judgment to adjust ZPD ranges to match individual students, taking into account such factors as a student’s prior knowledge, appetite for challenge, interest, and need for variety. When moving students to higher levels, consider suggesting shorter books.

APPENDIX C

Reading Practice Quantity, Quality, and Challenge for Focus Group Schools

Grade	Number of Students	Average Number of Books Read	Median AR Points Earned	Estimated Minutes Spent Reading Daily	% Above Typical Time Spent Reading	Average AR Quiz Percent Correct	% of Students Averaging At Least 85% Correct	Average Book Level
1	710	50	16.9	20	300%	87%	73%	1.8
2	1,689	67	24.3	21	166%	85%	64%	2.6
3	1,906	57	33.4	24	140%	83%	54%	3.3
4	2,057	60	50.5	31	142%	82%	50%	4.1
5	2,138	45	55.6	26	103%	82%	52%	4.7
6	1,884	18	57.2	23	117%	80%	49%	5.2
7	1,795	14	52.3	17	105%	81%	50%	5.8
8	1,518	13	50.4	16	111%	79%	48%	5.8
9	297	6	23.6	9	150%	80%	50%	6.0
All	13,994	40	44.6	23	135%	82%	53%	4.4

APPENDIX D

Reading Practice by Grade—Minutes per Student

Grade	Reading Practice (Minutes per Student)
K	3.0
1	5.0
2	7.9
3	10.0
4	12.8
5	12.7
6	10.6
7	8.3
8	7.6
9	3.6
10	4.1
11	2.9
12	3.3

Source: Paul, 1996

APPENDIX E

2000–2001 Reading Achievement Growth by Level of Implementation

2000–2001 Reading Achievement Growth for Students in Schools with Model Classrooms

Grade	Number of Students	Months Between Tests	Average Pretest PR	Average Post-Test PR	PR Change
1	254	4.9	36	65	29
2	569	7.2	54	63	9
3	459	7.3	51	57	6
4	440	7.4	55	60	5
5	473	7.6	56	58	2
6	361	7.6	55	55	0
7	516	7.6	40	46	6
8	313	7.8	40	45	5
All	3,385	7.3	49	56	7

2000–2001 Reading Achievement Growth for Students in Schools with More Than 10 Reading Renaissance-Trained Educators

Grade	Number of Students	Months Between Tests	Average Pretest PR	Average Post-Test PR	PR Change
1	654	5.4	35	67	32
2	1,640	7.1	46	58	12
3	2,154	7.0	47	52	5
4	2,189	7.3	48	54	6
5	2,032	7.0	52	52	0
6	1,7731	7.1	47	44	-3
7	1,566	7.1	49	50	1
8	977	7.2	48	49	1
9	414	6.2	43	45	2
All	13,399	7.0	47	52	5

2000–2001 Reading Achievement Growth for Students in Schools with 10 or Fewer Reading Renaissance-Trained Educators

Grade	Number of Students	Months Between Tests	Average Pretest PR	Average Post-Test PR	PR Change
1	259	5.1	48	71	23
2	609	6.9	56	61	5
3	558	6.5	54	52	-2
4	596	6.6	55	57	2
5	602	6.6	57	58	1
6	708	7.7	57	53	-4
7	604	8.3	56	58	2
8	622	7.9	54	55	1
9	192	6.8	46	48	2
All	4,750	7.1	55	57	2



PO Box 45016 • Madison, WI 53744-5016
(800) 200-4848
