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ABSTRACT

In 1998, as part of a major 3-year Reading Initiative, the Albertson Foundation provided $24.5 million to improve the reading performance of all Idaho elementary, middle, and junior high students. The reading components of School Renaissance (SR), a comprehensive school improvement program, include Accelerated Reader (AR) learning information system for reading and literacy skills, STAR Reading computer-adaptive norm-referenced reading test, and Reading Renaissance (RR) Professional Development seminars. The SR school improvement model incorporates the use of computerized learning information systems along with the implementation of proven classroom motivational strategies and techniques. A study evaluated the results of the first school year of Idaho's statewide adoption of AR and STAR reading software, and RR programs. Data were collected from 12,984 students enrolled in grades 1-9 at 50 schools across Idaho. With less than a full year, and in most cases less than one-half year, of AR and RR implementation, an encouraging amount of growth in reading skills has already been measured. Through the use of AR and implementation of RR techniques, the students have achieved nearly 2 NCEs of growth in reading skills on an annualized basis. More growth was evidenced in grades 1, 2, and 3--the key primary grades where the formation of good lifelong reading habits is most important. Schools without RR implementation exhibited less growth. (Contains 7 tables of data and 19 works cited. Appendixes contain a data chart, the certification program, and a longitudinal case study.) (NKA)

Idaho Statewide Implementation of Reading Renaissance: Summary of First Year's Results.

Monograph

IDAHO STATEWIDE IMPLEMENTATION OF READING RENAISSANCE®

Summary of First Year's Results

THE INSTITUTE for ACADEMIC EXCELLENCE™

An Institute for Academic Excellence Monograph

IDAHO STATEWIDE IMPLEMENTATION OF READING RENAISSANCE®

Summary of First Year's Results

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This study analyzes the 1998–99 reading practice and achievement data for 12,984 students, grades 1 through 9, from 50 Idaho elementary, middle, and junior high schools. With less than a full year of Reading Renaissance® implementation, the results indicate that the Idaho students obtained a statistically significant increase in reading achievement. In addition, Reading Renaissance professional development training was found to increase the amount of reading growth obtained, compared to schools where no teachers were trained.

Introduction

In 1998, as part of a major three-year Reading Initiative, the J.A. and Kathryn Albertson Foundation generously provided $24.5 million to improve the reading performance of all Idaho elementary, middle, and junior high students. The reading components of School Renaissance™, the nation's leading comprehensive school improvement program, were approved for purchase with the Foundation's grants. Funding for the math and writing components of School Renaissance were not part of the initial grant. The reading components of School Renaissance include Accelerated Reader® (AR™) learning information system for reading and literacy skills, STAR Reading™ computer-adaptive norm-referenced reading test, and Reading Renaissance® (RR) Professional Development seminars—all products from Advantage Learning Systems, Inc. and the Institute for Academic Excellence, Inc. In conjunction with the Foundation's requirements for program evaluations and the Institute's research and product development needs, the Institute for Academic Excellence conducted a study to assess the initial reading progress achieved by participating Idaho schools that had implemented AR and RR during the 1998–99 school year.

The School Renaissance Model (SR) for comprehensive school improvement incorporates the use of computerized learning information systems along with the implementation of proven classroom motivational strategies and techniques. SR is based on four fundamental concepts:

1) ***Professional, trained teachers are the keys to any significant long-term improvement in schools.*** While technology works, technology works best when used by teachers as a tool; it doesn't replace teachers. Because teachers are key, their professional development training is essential.
2) ***Reading and math are the core subjects in K–12 schools.*** Reading and math are the fundamental skills for problem-solving and higher-order thinking in all subjects. Improvement of reading and math abilities are necessary for increasing test scores and meeting demanding state standards.
3) ***Schools need to significantly increase time spent on key tasks.*** For reading, the key task is students reading books matched to their individual reading level for 60 minutes a day (30 minutes for pre–K and K). For math, the key task is students solving math problems matched to their individual math level for 30 minutes a day.
4) ***The curriculum is not the problem—information is the problem.*** Schools at all levels are not providing the information needed by teachers, librarians,

principals, and districts. When information is lacking, accountability is lacking. Teachers, particularly, are burdened with outdated paper record-keeping systems and don't have sufficient information to effectively manage reading and math. Computerized learning information systems, such as Accelerated Reader and STAR Reading, which continuously monitor learning tasks and assess student progress, close the information gap.

Purpose of the Study

This study evaluates the results of the first school year of Idaho's statewide adoption of Accelerated Reader and STAR Reading software, and Reading Renaissance programs. Since many schools did not acquire the AR and STAR Reading software until late fall 1998 and did not implement Reading Renaissance techniques until mid-spring 1999, the Institute plans to continue this evaluation for the 1999–00 and 2000–01 school years—the same years covered by the Foundation's Reading Initiative. The results from this report will thus serve as a baseline measure of reading progress for each of the participating Idaho schools. Based on the results achieved to date, prescriptive recommendations for how schools can continue to improve their reading performance during the next two years of the Reading Initiative are offered in the conclusion of this report.

Data from Accelerated Reader and STAR Reading were used to assess amounts of reading practice, growth in reading performance, and effects of RR training on students' reading development. Because Idaho administers the Iowa Test of Basic Skills (ITBS) each year in the fall, measuring reading growth for the 1998–99 academic year with this instrument was not feasible. The 50 schools that participated in the study submitted their AR and STAR Reading data to the Institute's educational research department on a voluntary basis.

Description of the Reading Components of the School Renaissance Model:

Accelerated Reader

Accelerated Reader is computerized reading management software that is used in more than 40,000 schools nationwide. AR Reading Practice™ quizzes are now available on almost 27,000 children's books. The AR system assigns a point value (AR Points) to each book based on the number of words in the book and its reading level, using the Flesch-Kincaid reading index. After reading a book, the student goes to the computer and takes a Reading Practice quiz corresponding to the book he just read. Reading Practice quizzes are carefully designed assessments that are intended to determine whether or not the student read a book. Questions are presented in an order that matches the chronology of the book and typically focus on the book's significant events, characters, and literary features. These quizzes are encouraging and motivating, focusing on literal comprehension. If a student has read the book, he

should be able to pass the AR Reading Practice quiz (Institute, *Design of reading practice and literacy skills assessments,* 1999). Students must score at least 60 percent on five- and ten-question quizzes and 70 percent on 20-question quizzes to earn any points. The AR program scores the quiz, assigns a proportion of points according to how well the student performed on the quiz, adds the result to its database, and generates a report for the teacher and student. AR has the capability to generate up to 24 separate reports that monitor the quantity, quality, and challenge levels of students' reading practice.

STAR Reading

STAR Reading is a computer-adaptive norm-referenced reading assessment that provides an accurate measure of students' reading comprehension in less than ten minutes. STAR Reading serves two purposes. First, it provides teachers with quick and accurate estimates of students' reading levels. This allows teachers to match students with the appropriate-level books and maximize their reading growth. Second, STAR Reading offers sound estimates of students' reading levels relative to a nationally representative norming sample of 60,000 K–12 students. The results of STAR Reading are highly correlated with traditional standardized tests. Unlike lengthy, high-stakes assessments, STAR Reading can be administered several times per year to identify students' reading levels and to predict the student's performance on a high-stakes test (Advantage Learning Systems, 1998).

STAR Reading includes a bank of 50 to 60 reading test items at each level. When students take a test, they begin with an item at the low end of their ability level. As students answer questions correctly, the computer presents more difficult items. When a student makes an error, the computer presents a less difficult item. This Adaptive Branching™ testing method is both efficient and powerful because it produces valid and reliable results in one-fifth the time of a traditional standardized test. Moreover, the program can create five or six unique "forms" so the same student can be tested often without encountering the same item twice (Institute, *The design of reading practice and literacy skills assessments,* 1999).

Reading Renaissance

Reading Renaissance refers to a program of motivation strategies and effective teaching techniques that help educators monitor and guide students' reading practice. Based on the principle that "practice makes perfect," RR combines the power of computer technology (learning information systems) with sound teaching strategies, resulting in continuous growth of students' reading skills and the development of lifelong readers. The following activities are incorporated in successful Reading Renaissance classrooms:

- At least 60 minutes are set aside each day for reading practice with trade books selected by the students themselves.

- While students are reading, the teacher visits briefly with each of them to monitor progress, provide encouragement and praise, integrate skills taught previously in lessons, and intervene if problems arise.
- After finishing a book, a student takes an Accelerated Reader Reading Practice quiz, which is a brief check of reading comprehension. Both the student and the teacher receive immediate feedback.
- The teacher employs motivational strategies that get children excited about books.

The Institute for Academic Excellence *(Teacher's handbook, 3-5, 1999)* developed a formula that serves as a shorthand for describing Reading Renaissance:

TWI + LIS + RMS + MIMI = Reading Renaissance

- TWI stands for Reading To, Reading With, and Reading Independently. TWI is the reading practice that forms the foundation of the program.
- LIS stands for Learning Information System, the computer software—Accelerated Reader—that monitors and manages student reading practice.
- RMS stands for Reading Motivation System, the techniques that encourage students to read.
- MIMI stands for Motivate, Instruct, Monitor, and Intervene, and describes the teacher's role, which is essential to ensuring success for every student.

Previous Studies of Reading Practice, Accelerated Reader, and Reading Renaissance

There is a large and growing body of research demonstrating the effectiveness of the Accelerated Reader LIS for reading and literacy skills and Reading Renaissance techniques. Students in classrooms that adopt Accelerated Reader do better in reading as well as other subjects, including math, science, social studies, and writing. Attendance is also better at AR schools. Likewise, many Reading Renaissance classroom teachers and schools report growth in reading achievement of up to two years' growth in only one year. The following outlines some of the independent and Institute research studies demonstrating the importance of reading practice and the effectiveness of Reading Renaissance and Accelerated Reader:

A landmark study by Topping and Paul (1999) appeared in a recent issue of *Reading & Writing Quarterly* and is one of the largest studies of reading ever conducted, collecting reading performance data for 659,214 K–12 students during the 1994–95 school year. Some of the key findings show that students in K–12 schools spend only seven minutes per day practicing reading. Reading practice declines markedly after fifth grade: High school students spend about as much time practicing reading as kindergarten students—only three minutes per day. Also, 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. Finally, students in the highest-performing states on the NAEP Reading Study engaged in 59 percent 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 and 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, and Fielding (1998) showing that children who score at the 90th percentile on standardized tests read 228 times more words per year outside of school than do children who score at the 10th percentile. Two crucial messages appear from the Cunningham and Stanovich work: 1) the importance of early development of children's decoding and word recognition abilities cannot be overstated, and 2) all children, regardless of their achievement levels, should be provided with as many reading experiences as possible. Research from Guthrie, Wigfield, Metsala, and Cox (1999) further supports the findings from Cunningham and Stanovich, in that students' reading volume and motivation to read are significant predictors of text comprehension.

Several other independently published articles and theses appear about AR and RR, including one from Peak and Dewalt (1994). This five-year longitudinal study tracked the progress of 50 ninth-grade Accelerated Reader students who had used the program since third grade. The AR students showed improved reading attitudes and higher reading scores on the California Achievement Test (CAT) than a control group of 50 students. AR students experienced an average of 15.3 and 13.2 scale score points per year in reading growth from grades 3 through 6 and 6 through 8, respectively, as opposed to 10.2 and 5.5 points per year for the control students. Likewise, in McKnight's doctoral thesis (1992), more than one-half of a fifth-grade class whose students lacked motivation to read showed greatly improved reading habits and attitudes after using Accelerated Reader for 11 weeks.

Finally, a new study from Sanders and Topping (1999) collected Accelerated Reader and Tennessee Value Added Assessment System (TVAAS) data from nearly 63,000 Tennessee students, grades 2 through 8, during the 1996–97 school year. Analysis showed that both student reading volume and percent correct on AR quizzes have a positive impact on teacher effectiveness as measured by TVAAS. In particular, the recommended level of 85 percent correct on AR Reading Practice quizzes, prescribed by Vygotsky's zone of proximal development principles (Institute, *ZPD guidelines,* 1998) taught in Reading Renaissance, was confirmed in this study. Furthermore, teachers completing RR training were significantly more effective than control teachers who had not completed training. Reading Renaissance model classrooms also showed higher effectiveness than non-model classrooms in fourth and fifth grades.

Methods

This study is based on electronic data from STAR Reading and AR records for the 1998–99 school year supplied voluntarily by schools across Idaho. This study uses data from 12,984 students enrolled in grades 1 through 9 at 50 elementary, middle, and junior high schools. To be included in the analysis, each student must have had

both AR and STAR Reading records available and must have results from two STAR Reading tests taken at least 100 days apart. Of the 130 schools that initially agreed (through a mailing campaign in September 1998) to share their student data with us, we received data from 66. Only 55 of the schools sent both AR and STAR Reading records for their students. Five schools had to be eliminated from the analysis because none of their students had results from two STAR Reading tests at least 100 days apart.

The data for this study consists of two parts: growth in reading achievement from STAR Reading data and measurement of reading practice from AR data. We measure growth in reading achievement using Normal Curve Equivalents (NCEs) from STAR Reading test results. Unlike typical grade-equivalent (GE) or percentile ranking (PR) scores used to represent changes in reading growth, NCEs express reading achievement data on an equal-interval scale and can therefore be arithmetically averaged across all students in all grades. When students experience growth in achievement that is consistent with a national sample of students in their grade, their NCE measures will remain unchanged from one STAR Reading administration to a later STAR Reading administration. When students' NCEs increase over the school year, these students are improving in reading achievement at a more accelerated rate than their peers.

Data from AR provides measures of the **quantity, quality** and **challenge** of students' reading practice. Since we use the STAR Reading tests as our measure of change in reading achievement over time, we examine only reading practice that occurs between the earliest and latest STAR Reading testing dates for each student.

The *quantity* of reading practice can be measured by the number of books students read, the points earned, and the amount of time spent reading. Prior research (Institute for Academic Excellence, 1998) examined reading practice data from approximately 80,000 students to establish the link between tested reading level, number of points earned, and time spent reading. This analysis was used to develop the Goal-Setting Chart (see **Appendix A**), enabling us to estimate the time spent reading per day from the number of AR points students earned. Since full Reading Renaissance implementation is marked by at least 60 minutes of reading practice per day, we measure progress towards this goal by calculating the average percent of an hour students spend reading.

The *quality* of reading practice is indicated by how well students score on Accelerated Reader Reading Practice quizzes. Prior research (Sanders and Topping, 1999) found that students gain the most from their reading practice when they obtain at least 85 percent correct on the AR quizzes. We can measure progress towards this quality goal by examining the proportions of students averaging at least 85 percent correct on their AR quizzes.

Finally, the level of *challenge* students experience in their reading practice arises from the relationship between the difficulty of the books read and the students' tested reading ability. The Institute has established guidelines for the recommended ranges

of book difficulty levels that maximize students' reading growth (see **Appendix A**). These guidelines are borrowed from Russian child-development psychologist Lev Vygotsky's (1978) theory of the zone of proximal development (ZPD), recommending that students read books at levels that challenge them without frustrating them. Challenging literature experiences help students expand vocabulary and develop new language skills, while literature that is too difficult may cause frustration and loss of motivation. Reading Renaissance shows educators how to establish ZPD ranges for their students, based upon the students' tested reading levels. Educators are then encouraged to help students select and read books within their ZPD ranges to maximize reading growth. We measure progress towards appropriate challenge levels by comparing the average level of books read by students to the mid-point of their ZPD ranges. When students are reading at an appropriate level of challenge, the ratio of the average levels of books read to the mid-point of their ZPD ranges will be close to 100 percent. The ratio will be less than 100 percent when students are reading books below their ZPD mid-point and greater than 100 percent when students are reading books above their ZPD mid-point.

When teachers provide evidence that quantity, quality, and challenge goals have been met, the Institute for Academic Excellence recognizes these educators through the Reading Renaissance Model Certification Program. This program was designed to acknowledge educators who have achieved full implementation of Reading Renaissance principles into their daily classroom and library practices. **Appendix B** outlines the criteria for Model Classroom, Library, and School certification. Idaho schools that have at least one Model Classroom have been identified in our data set. For the purposes of assessing full Reading Renaissance implementation, Renaissance Model Certification will serve as the benchmark in our analysis.

Results

The first set of results for the 12,984 Idaho students are reported according to the different levels of Reading Renaissance implementation. Typically, when schools first purchase Accelerated Reader, they have not yet sent staff members to Reading Renaissance training. AR is used in the classrooms and libraries, but students are more interested in reading as many lower-level books as possible to get points than in reading more challenging literature in their ZPD ranges. As our data will show, many Idaho educators are still at this first "reading for points" stage of implementation.

The second stage is when staff members have attended RR training and incorporate Renaissance practices into their reading programs. Students are reading in their ZPD ranges, mini-lessons are more readily used, and reading practice is more carefully managed. Similarly, these staff members share with other educators at the school much of the knowledge they gathered during the training session, encouraging them to use RR techniques with their students as well.

The final stage of Reading Renaissance implementation culminates in Renaissance Model Certification. Teachers provide evidence of students' time on task, percent of

reading goals reached by students, and students reading books of appropriate challenge levels. Table 1 displays the number of schools by level of RR implementation, the number of students represented in each of the implementation levels, and the estimated yearly reading growth achieved by students in Normal Curve Equivalents (NCEs)[1].

Table 1: Reading Growth Achieved by Level of Reading Renaissance Implementation
1998–99 Results for Idaho Students, Grades 1 through 9

Level of RR Implementation	Number of Schools	Number of Students	Estimated Yearly NCE Growth Per Student
Using AR alone, no RR training	22	4,855	1.33
At least one staff member RR trained*	25	6,755	2.08
At least one certified Model Classroom	3	1,374	2.46
Total	**50**	**12,984**	**1.84**

** RR training had to have occurred before 2/1/99 in order to be included in this category.*

Despite less than a full year of Accelerated Reader or Reading Renaissance implementation at the majority of these schools, the reading growth achieved is statistically significant at less than the 0.05 level and very encouraging, thus providing a "window to the future" of what additional RR training could help accomplish. The students as a whole achieved average growth of 1.84 NCE units—a figure indicating a statistically significant level ($p < .001$) of accelerated improvement in reading skills compared to a national sample of peer groups. Additionally, RR training has a positive impact on helping students achieve more reading growth. Students from schools with at least one RR-trained staff member achieved 56 percent more growth than students from schools where no staff members had been RR-trained. Likewise, students from schools with at least one certified Model Classroom experienced 85 percent more growth than students in schools without RR-trained staff members.

In order to achieve maximum reading growth, it is recommended that schools not only use Accelerated Reader reading management software to monitor daily reading practice, but also implement Reading Renaissance principles into their daily classroom activities. The results achieved by the Idaho students thus far support this recommendation—students in schools that have committed to using AR and RR practices are experiencing more growth in reading skills than those in schools that are using AR alone. These results coincide with the large changes in school reading environments that occur once RR has been introduced and fully implemented. For a

[1]In estimating yearly NCE growth, a reading school year is assumed to equal 240 calendar days for students in grades 2 through 9 and 120 days for students in grade 1. NCE growth per day was computed for all students between their beginning and ending STAR Reading test dates, and these figures were multiplied by the appropriate factor to estimate yearly growth. NCE growth figures were averaged across all students in each grade.

look at the longitudinal reading growth that can be achieved through schoolwide Reading Renaissance implementation, refer to **Appendix C.** This provides a special report on Horizon Elementary School in Jerome, Idaho, a K–6 elementary school that has been a RR certified Model School for two years. Over a three-year period, Horizon's average reading growth totaled 10.84 NCEs (statistically significant at a $p < .01$ level), which exceeds one full year of additional growth above that normally expected. Library circulation also increased fifteen times after achieving RR Model School status.

Table 2 provides a comprehensive look at the reading practice and achievement data summarized by grades. Table 3 incorporates these results into an assessment of the progress made toward the quantity, quality, and challenge goals prescribed by the Reading Renaissance program.

Table 2. Reading Practice and NCE Growth

Grade	Number of Students	Average Number of Books per Student	Average Level of Books	Median Number of Points per Student	Average AR Quiz Percent Correct	Average NCE Growth per Day per Student	Estimated NCE Growth per Year per Student*	Average Number of Days Between Tests
1	614	43	2.0	10	84	0.0762	9.14	156
2	1432	71	2.5	22	83	0.0131	3.14	220
3	1765	62	3.2	33	84	0.0169	4.06	215
4	1926	39	3.9	39	83	0.0012	0.29	224
5	2206	33	4.4	45	80	0.0050	1.20	209
6	1739	21	5.1	43	79	-0.0027	-0.65	208
7	1385	17	5.5	50	77	0.0036	0.86	213
8	1308	9	6.0	36	77	0.0111	2.66	215
9	609	9	6.4	47	78	-0.0008	-0.19	221
Total	**12984**	**36**	**4.3**	**38**	**81**	**0.0095**	**1.84**	**212**

*School year is assumed to equal 240 days. For first graders a school year using AR is assumed equal to 120 days.

Table 3. Measurement of Quantity, Quality and Challenge

Grade	Number of Students	Percent of Students Averaging >= 85% Correct on Quizzes	Average Minutes Spent Reading per Day	Average Percent of an Hour Spent Reading per Day	Average Book Level Read/ ZPD Midpoint
1	614	59	16.7	28	90
2	1432	55	19.4	32	90
3	1765	56	22.3	37	96
4	1926	50	20.3	34	97
5	2206	43	22.4	37	98
6	1739	43	19.4	32	101
7	1385	40	17.7	30	100
8	1308	40	12.0	20	101
9	609	45	12.2	20	99
Total	**12984**	**47**	**19.0**	**32**	**97**

Table 2 reiterates the statistically significant growth of 1.84 NCE units achieved by the Idaho students reported in Table 1. However, the average growth is now reported by grade. Students in grades 1, 2, 3, and 8 have experienced the most growth in reading skills so far. Students in grades 6 and 9 are not yet showing accelerated reading growth compared to their peer groups as measured by STAR Reading. Students in grades 1 through 4 achieved the highest percentages correct on AR quizzes (84 and 83 percent correct) and are reading large quantities of books of lower-point value. The average reading levels of these books (2.0 to 3.9) appears to be appropriate for these students' grade levels.

In terms of quality of reading, results in Table 3 indicate that larger proportions of students in grades 1 through 4 are averaging at least 85 percent correct on AR Reading Practice quizzes, the recommended level in Reading Renaissance. Students in all grades, however, are falling far short of the recommended 60 minutes of reading per day. The average amount of reading being done by students is less than 20 minutes per day, with the most reading (22.4 minutes per day) being done by fifth-graders. Students in grades 6, 7, and 8 are reading the most challenging literature—their average reading level of their books is slightly above the midpoint of their ZPD ranges (100 to 101 percent). However, these middle school students are also maintaining the lowest average percentages correct on their AR Reading Practice quizzes (77 to 79 percent correct from Table 2), indicating that they may be reading more difficult books or are having trouble finding enough interesting books to read at their levels. Maintaining a large selection of high-interest books for middle school students is key to keeping them motivated to read while allowing them to enjoy success in comprehending their reading by scoring higher on AR Reading Practice quizzes. The recent work from Sanders and Topping (1999) confirms the importance of students' maintaining a level of 85 percent correct on AR Reading Practice quizzes in order to maximize reading growth.

Tables 4 and 5 are similar to Tables 2 and 3, but the data are displayed according to whether or not these students represent schools where at least one staff member received Reading Renaissance training. Tables 6 and 7 are set up in a similar fashion with groups identified by whether or not the students represent schools with at least one certified Reading Renaissance Model Classroom. Therefore, Tables 4 and 5 examine the effects of "training vs. no training," and Tables 6 and 7 compare the effects of "Model Certification vs. no Model Certification" on reading performance.

Table 4. Effect of Reading Renaissance Training on Reading Practice and NCE Growth

Reading Renaissance Trained	Grade	Number of Students	Average Number of Books per Student	Average Level of Books	Median Number of Points per Student	Average AR Quiz Percent Correct	Average NCE Growth per Day per Student	Estimated NCE Growth per Year per Student*	Average Number of Days Between Tests
No	1	169	18	1.9	0.03	83	0.0583	7.00	143
Yes	1	445	52	2.0	0.09	84	0.0830	9.96	161
No	2	443	51	2.5	0.10	83	0.0103	2.47	201
Yes	2	989	81	2.5	0.10	83	0.0143	3.43	229
No	3	603	46	3.2	0.13	84	0.0189	4.54	183
Yes	3	1162	70	3.3	0.18	83	0.0159	3.82	231
No	4	557	35	3.8	0.17	83	0.0015	0.36	195
Yes	4	1369	41	3.9	0.17	82	0.0011	0.26	236
No	5	730	22	4.5	0.19	77	0.0036	0.86	180
Yes	5	1476	38	4.4	0.24	81	0.0057	1.37	224
No	6	806	20	5.2	0.25	79	-0.0034	-0.82	193
Yes	6	933	21	5.1	0.20	79	-0.0020	-0.48	221
No	7	797	19	5.5	0.29	80	0.0026	0.62	215
Yes	7	588	14	5.5	0.18	74	0.0050	1.20	210
No	8	408	9	6.0	0.18	80	0.0085	2.04	208
Yes	8	900	10	6.1	0.17	76	0.0122	2.93	219
No	9	342	11	6.4	0.29	80	-0.0004	-0.10	211
Yes	9	267	6	6.4	0.13	77	-0.0014	-0.34	233
No	**Total**	**4855**	**26**	**4.5**	**0.20**	**81**	**0.0066**	**1.33**	**195**
Yes	**Total**	**8129**	**41**	**4.2**	**0.17**	**80**	**0.0112**	**2.15**	**223**

* School year is assumed to equal 240 days. For first graders a school year using AR is assumed equal to 120 days.

Table 5. Effect of Reading Renaissance Training on Quantity, Quality and Challenge

Reading Renaissance Trained	Grade	Number of Students	Percent of Students Averaging >= 85% Correct on Quizzes	Average Minutes Spent Reading per Day	Average Percent of an Hour Spent Reading per Day	Average Book Level Read/ ZPD Midpoint
No	1	169	59	9.2	15	87
Yes	1	445	60	19.6	33	92
No	2	443	53	15.2	25	89
Yes	2	989	56	21.3	35	91
No	3	603	56	18.0	30	94
Yes	3	1162	55	24.5	41	97
No	4	557	55	19.0	32	94
Yes	4	1369	49	20.9	35	98
No	5	730	32	19.6	33	99
Yes	5	1476	48	23.8	40	97
No	6	806	42	21.2	35	100
Yes	6	933	44	17.9	30	102
No	7	797	45	20.6	34	98
Yes	7	588	34	13.9	23	103
No	8	408	48	11.8	20	98
Yes	8	900	37	12.1	20	103
No	9	342	47	15.1	25	100
Yes	9	267	44	8.3	14	98
No	**Total**	**4855**	**47**	**18.0**	**30**	**96**
Yes	**Total**	**8129**	**48**	**19.7**	**33**	**98**

Table 6. Effect of Model Classroom Status on Reading Practice and NCE Growth

Model Classrooms	Grade	Number of Students	Average Number of Books per Student	Average Level of Books	Median Number of Points per Student	Average AR Quiz Percent Correct	Average NCE Growth per Day per Student	Estimated NCE Growth per Year per Student*	Average Number of Days Between Tests
No	1	543	44	1.9	9	83	.0768	9.22	153
Yes	1	71	36	2.1	14	88	0.0715	8.58	176
No	2	1169	57	2.5	18	82	0.0132	3.17	218
Yes	2	263	135	2.6	56	86	0.0127	3.05	232
No	3	1391	50	3.2	25	83	0.0170	4.08	210
Yes	3	374	106	3.3	77	86	0.0166	3.98	233
No	4	1580	36	3.9	32	82	0.0016	0.38	220
Yes	4	346	55	4	73	86	-0.0007	-0.17	244
No	5	1934	29	4.4	38	79	0.0048	1.15	205
Yes	5	272	58	4.7	109	86	0.007	1.68	238
No	6	1691	20	5.1	42	79	-0.0029	-0.7	207
Yes	6	48	40	5.2	99	90	0.0067	1.61	248
No	7	1385	17	5.5	50	77	0.0036	0.86	213
No	8	1308	9	6.0	36	77	0.0111	2.66	215
No	9	609	9	6.4	47	78	-0.0008	-0.19	221
No	**Total**	**11610**	**30**	**4.4**	**35**	**80**	**0.0092**	**1.77**	**210**
Yes	**Total**	**1374**	**83**	**3.6**	**76**	**86**	**0.0121**	**2.46**	**234**

* School year is assumed to equal 240 days. For first graders a school year using AR is assumed equal to 120 days.

Table 7. Effect of Model Classroom Status on Quantity, Quality and Challenge

Model Classroom	Grade	Number of Students	Percent of Students Averaging >= 85% Correct on Quizzes	Average Minutes Spent Reading per Day	Average Percent of an Hour Spent Reading per Day	Average Book Level Read/ ZPD Midpoint
No	1	543	58	17.1	28	90
Yes	1	71	68	14.2	24	92
No	2	1169	53	15.4	26	90
Yes	2	263	66	36.9	61	92
No	3	1391	53	18.0	30	96
Yes	3	374	67	38.3	64	96
No	4	1580	48	17.7	30	97
Yes	4	346	63	32.1	54	97
No	5	1934	40	20.0	33	98
Yes	5	272	65	39.2	65	98
No	6	1691	42	19.1	32	101
Yes	6	48	81	29.3	49	96
No	7	1385	40	17.7	30	100
No	8	1308	40	12.0	20	101
No	9	609	45	12.2	20	99
No	**Total**	**11610**	**45**	**17.1**	**29**	**98**
Yes	**Total**	**1374**	**66**	**35.1**	**59**	**96**

Table 4 shows significant increases in reading growth obtained for students representing schools with at least one RR-trained staff member over students from schools where no staff members had been RR-trained. For all 8,129 students in schools with RR-trained staff members, this growth is 62 percent higher than that for the 4,855 students in schools without RR-trained staff members. These differences in reading growth are consistent in six of the nine grades. Grade three posted high amounts of growth for both groups (4.54 and 3.82 NCEs). The average number of books read per student in RR-trained schools is 58 percent higher than the average number read by the students in the non-RR-trained schools. The two groups obtained similar measurements for the other reading practice variables in Table 4.

The progress toward the quantity, quality, and challenge goals in Table 5 describes a similar story. Overall, RR-trained schools are making more progress toward meeting these goals than non-RR-trained schools. The only exception is in meeting the quality goal—the proportion of students averaging 85 percent correct on AR quizzes is similar for both groups (47 and 48 percent), and shows mixed results on a grade-by-grade basis. The RR-trained schools, however, are reading 9.4 percent more per day than the non-RR-trained schools, even though both groups average less than 20 minutes per day of reading practice. All of the grades show higher amounts of reading practice being done by the RR-trained schools than by the non-RR-trained schools, with the exceptions of grades 6, 7, and 9. Finally, all students (except those in grades 5 and 9) in the RR-trained schools are reading more challenging literature than those in the non-RR-trained schools. These results paint a very optimistic picture for the next two years of the Reading Initiative. More reading growth is likely to occur as

more educators receive Reading Renaissance training, and more growth is likely to occur if students practice reading for more than the current average of 20 minutes per day.

Tables 6 and 7 compare the reading performance results of 11,610 students in the "non-Model Certified" group to those of 1,374 students in the "Model Certified" group. Overall, the reading growth for students in the Model Certified group is 39 percent higher than that for students in the non-Model Certified group, even though differences in growth between the two groups are not consistent on a grade-by-grade basis. The average percent correct on AR Reading Practice quizzes and the average number of books read per student for the Model Certified group is much higher than that for the non-Model Certified group. Students in the Model Certified group average 86 percent correct on AR quizzes and read almost three times the number of books as students in the non-Model Certified group. Even though both groups still fall short of the recommended goal of 60 minutes of reading practice per day, students in the Model Certified group spend more than twice as much time practicing reading than students do in the non-Model Certified group (35.1 versus 17.1 minutes per day). The Model Certified group is also closer to meeting the quality goal in that two-thirds of these students average at least 85 percent correct on AR Reading Practice quizzes, as opposed to less than half of the students in the other group. Both groups of students read books of a similar level of challenge—98 and 96 percent of their ZPD midpoint ranges. Once again, these results point to the importance of Reading Renaissance training and implementation.

Conclusions

With less than a full year, and in most cases less than one-half year, of AR and RR implementation, a very encouraging amount of growth in reading skills has already been measured. Through the use of Accelerated Reader and implementation of Reading Renaissance techniques, 12,984 Idaho students in grades 1 through 9 have achieved nearly 2 NCEs of growth in reading skills on an annualized basis. More growth was evidenced in grades 1, 2, and 3—the key primary grades where the formation of good lifelong reading habits is most important.

Additionally, when compared to students in schools without Reading Renaissance implementation, 56 percent more reading growth occurred for students representing schools with some RR training, and 85 percent more reading growth was obtained for students in schools with at least one certified Model Classroom.

However, only one-half of the students are meeting the RR quality goal of averaging at least 85 percent correct on AR Reading Practice quizzes. Also, the quantity goal of practicing reading for 60 minutes each day is a long way from being met—the students are averaging only 19 minutes per day of reading practice. Students from schools with at least one Model Classroom are closer to meeting these Reading Renaissance goals than students from the other schools. Model Classroom students practice reading more than twice as much as other students, read almost three times

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APPENDIX A

Goal-Setting Chart

Grade-Equivalent Score	ZPD		Point Values Expected from 60 Minutes per Day of Reading Practice			
	Average	Range	WK	6 WKS	9 WKS	YR
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 judgement 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. For nonfiction, subtract 0.5 to 1 year from the ZPD ranges shown above.

APPENDIX B

RENAISSANCE™
MODEL
CERTIFICATION

The Renaissance Model Certification Program At a Glance

The Institute for Academic Excellence established the Renaissance Model Certification program to recognize educators who demonstrate an outstanding commitment to Reading Renaissance principles in their daily classroom practices.

The Institute considers a variety of factors in determining Model Certification. These include the size and socioeconomic makeup of the class or school as well as the creativity and resourcefulness with which the teacher, librarian, Reading Renaissance coordinator, or principal has applied Reading Renaissance principles.

If you have any questions about the Renaissance Model Certification program, please call the Institute at (800) 200-4848.

Model Classroom
To be certified as a Model Classroom, you must provide evidence that a majority of the Reading Renaissance principles outlined on the Model Classroom checklist have been implemented. In addition, you need to complete the Model Classroom Application, Model Classroom Survey, and the following three criteria must be met on your classroom's At-Risk Report for the most recent 6- or 9-week grading period:

- Average percent correct should be between 85 and 92.
- No more than 10 percent of students who have been in class for at least 12 weeks can be classified as at-risk.
- Median points earned must be at least 80 percent of the expected points as indicated on the goal-setting chart.

Model Library
In addition to completing the Model Library Application and Model Library Survey, the following criteria apply:

- Either three teachers or 10 percent of reading teachers (whichever is greater) at the school must have achieved Model Classroom certification during the current school year.
- The librarian must document a flexible library schedule, an adequate supply of books, and books labeled according to Reading Renaissance guidelines.

Model School
The principal or Reading Renaissance coordinator must submit an essay about the

use of Reading Renaissance and Accelerated Reader in the school and demonstrate meeting these criteria:

- At least five teachers or 30 percent of reading teachers (whichever is greater) must have achieved Model Classroom certification during the current school year.
- No more than 15 percent of students schoolwide may be classified as at-risk on the At-Risk Report.
- Demonstrate an average of at least 45 minutes daily TWI time schoolwide.
- The principal and Reading Renaissance coordinator must be able to show, using the Checklist, that Reading Renaissance principles are being applied throughout their school.

Certify Every Year

Renaissance Model Certification status is active for one year from your date of certification. At the end of that year, you'll need to recertify to maintain Model Certification status. If you continue to meet Model Certification criteria, we will recertify you for another year.

Recertification is easy. There are no additional enrollment fees. Teachers, principals, and Reading Renaissance coordinators simply submit a qualifying At-Risk Report for your current six- or nine-week grading period with the grade level(s) you currently work with. Librarians complete a Model Library Survey that includes a comparison of circulation statistics, the names of teachers in the school who have certified or recertified that school year, and the average amount of school time devoted to literature-based reading practice.

APPENDIX C

LONGITUDINAL CASE STUDY:
Horizon Elementary School, Jerome, Idaho
Reading Growth Achieved through Extended Accelerated Reader® and Reading Renaissance® Implementation

Background

Horizon Elementary School is a Title I school with an enrollment of 650 students in grades 1 through 6. Horizon Elementary's demographics also include a 20 percent minority population, a 19 percent ESL rate, and 61 percent eligibility rate for free or reduced lunch. Horizon first installed Accelerated Reader (AR) during the 1993–94 school year, and the first educator was trained in Reading Renaissance techniques during the fall of the 1996–97 school year. Horizon's first Reading Renaissance Model Classroom teacher certified in spring 1997, and Horizon Elementary certified as a Model School a year later. All together, Horizon Elementary School has numerous certified Renaissance Model educators: 22 teachers, one librarian, and one principal. The following table chronicles when Horizon Elementary's educators implemented the various stages of Reading Renaissance implementation:

Table 1: Horizon Elementary School's Journey to Full Reading Renaissance Implementation

Stage of Implementation	School Year
AR first installed.	1993–94
First educator received RR training.	Fall 1996
First Model Certified educators.	Spring 1997
First Model School Certification.	Spring 1998
Model School Re-certification.	Spring 1999

Data

STAR Reading was released in September 1996 and three school years of data were collected for Horizon Elementary School covering the following periods: 1996–97, 1997–98, and 1998–99. The breakdown, by grade, of the number of students for whom we have two sets of available STAR Reading data (early fall and late spring administrations) is shown in Table 2.

Table 2: Horizon Elementary School Reading Data Availability by Grade
(Numbers of Students)

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	**Total**
1996–97	34	89	61	38	41	N/A	**263**
1997–98	70	141	129	67	49	48	**504**
1998–99	36	141	130	64	43	48	**462**

For each of these years, annual reading growth for each grade is expressed in average changes in Normal Curve Equivalents (NCEs) between early fall and late spring STAR Reading administrations. Table 3 displays these results.

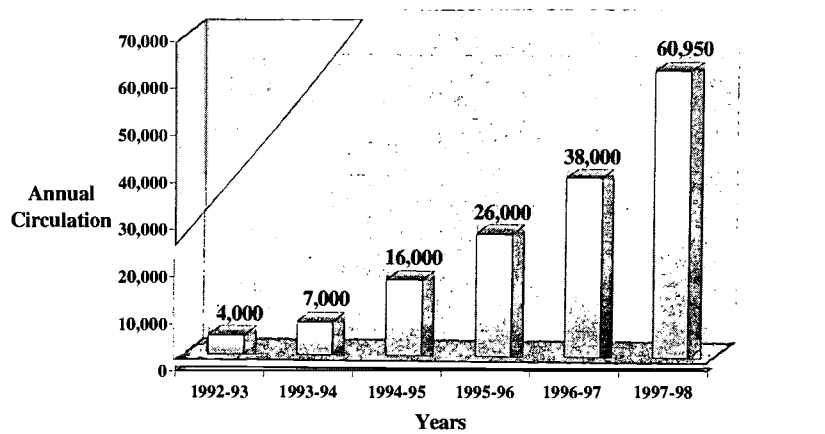
Table 3: Horizon Elementary School's Reading Growth Per Grade
(NCE changes for 1996–97 to 1998–99 school years)

	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	**Total**
1996–97	6.88	1.90	0.59	-0.72	1.16	N/A	**1.75**
1997–98	10.23	4.92	4.43	0.33	6.19	1.71	**4.74**
1998–99	10.84	5.40	3.55	2.16	4.22	1.61	**4.35**

Total reading growth over three-year period = 10.84 NCEs

Tremendous growth in library circulation was also evidenced at Horizon Elementary School during the AR and RR implementation time period. The following chart displays Horizon's annual circulation between the 1992–93 and 1997–98 school years. (Full circulation data for 1998–99 is unavailable due to computer technical problems at Horizon during the first two months of the school year.)

Horizons Elementary School, Jerome, Idaho
Library Circulation Increases More Than Fifteen Times
Over Five Years of AR and RR Implementation



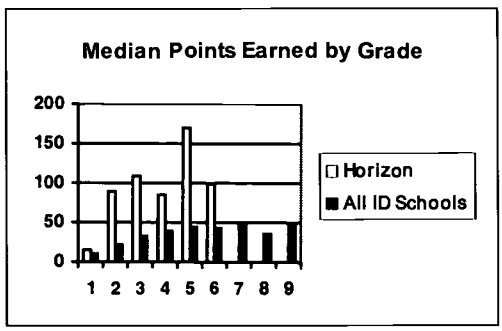
Horizon Elementary's 1998–99 reading practice and achievement data are displayed on the following page.

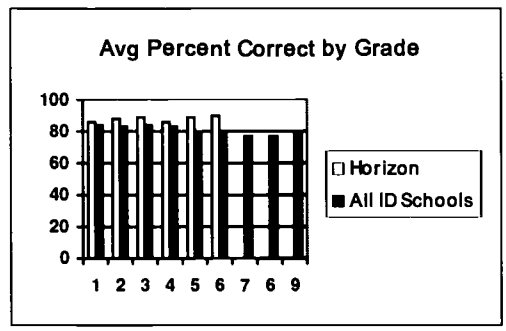
Results

Reading Renaissance implementation has had a significant impact upon reading improvements at Horizon Elementary School. STAR Reading data is available for the time period matching the introduction of RR techniques into the school and the certification of Model Classrooms. Reading growth increased 2.5 times over the RR training and Model Classroom certification period—from 1.75 in 1996–97 to 4.74 and 4.35 NCEs in 1997–98 and 1998–99, respectively, for the entire school. Furthermore, Horizon's library circulation increased fifteen times after the introduction of AR and implementation of RR techniques. Finally, Horizon's reading practice data indicates that the school has made significant progress in meeting the quantity, quality, and challenge goals recommended by Reading Renaissance. Students in grades 2, 3, and 5 practice reading for almost one hour per day, well over half of all students across the grades average at least 85 percent correct on AR quizzes, and all students appear to be reading at appropriate challenge levels. Overall, Horizon's reading practice and achievement statistics rank among the highest in our data sample.

1998-99 Report for Horizon Elementary — Jerome, Idaho

Grade	Num of Students	Avg Num of Books per Student	Avg Level of Books	Median Num of Points per Student	Avg AR Quiz Percent Correct	Avg NCE Growth/Day per Student	Estimated NCE Growth/Year* per Student	Average Days Between Tests
1	36	43	1.9	15	86	0.0903	10.84	157
2	141	199	2.5	89	88	0.0225	5.40	234
3	130	176	3.1	109	89	0.0148	3.55	239
4	64	73	4	85	86	0.0090	2.16	241
5	43	139	4.4	170	89	0.0176	4.22	241
6	48	40	5.2	99	90	0.0067	1.61	248
School Total						**0.0216**	**4.35**	**232**





Progress Towards Quantity, Quality, and Challenge Goals

Grade	Num of Students	Percent of Students Averaging >= 85 Correct on Quizzes	Average Minutes Spent Reading/Day	Average Percent of an Hour Spent Reading/Day	Average Book Level Read/ZPD Midpoint
1	36	64	18.64	31	93
2	141	72	54.92	92	92
3	130	82	53.26	89	93
4	64	59	38.99	65	102
5	43	84	54.88	91	90
6	48	81	29.33	49	96

* School year is assumed to equal 240 days. For first graders a school year using AR is assumed equal to 120 days.

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