



Education Accountability Report

Reed Elementary School

April 30, 2007

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## Introduction

During the period August 1, 2006 - April 30, 2007 Reed Elementary School began implementation of the web-delivered SkillsTutor software series. This program provides supplemental basic skills instruction in reading; mathematics; algebra; language arts; writing; science; information skills and thinking skills. Instructional management is generated by student usage. The progress of this program is being monitored, analyzed, and interpreted using the Educational Analytics Data Management System (EA). EA is a joint effort of Impact Education and the Orion Research Group.

The purpose of this report is to examine the progress the schools in the district are making in implementing the software. Attention to implementation is important. Experience shows that when programs are initiated at multiple sites, there is variance as to when usage begins as well as the extent to which the programs are used. Impact Education has found it takes anywhere from a month to a year for different units/buildings in a district to begin full implementation of software in their programs.

In assessing the progress of implementation, we look at the basic units of work completed by students in each building:

- Pretests used by students
- Tutorial lessons and quizzes completed
- Posttests on subject matter areas completed

We also monitor the time spent. An important feature of the EA Reports is that software is selected for use with EA only if it is provided through the Internet. This discipline allows students to work, not only during school hours, but during out of school hours. Students can work at home, in community libraries, at work, etc. When students have Internet connections at home, this allows the parent to get a clear sense of what the student needs to learn and provides detailed reports of progress. An extra benefit is that most parents are very appreciative that the schools have allowed them to be more a part of the student's academic work.

Students have completed 2,443 pretests and 1,354 posttests in academic content areas. The students have also completed 18,301 additional lessons and quizzes in the academic content areas. Our experience shows that if teachers make an effort to get their students to use these computer learning materials, the students respond with significant recorded usage.

Number of Students	Time on Task (minutes)	Academic Units Worked	Pretests	Lessons	Posttests
670	228,141	22,098	2,443	18,301	1,354

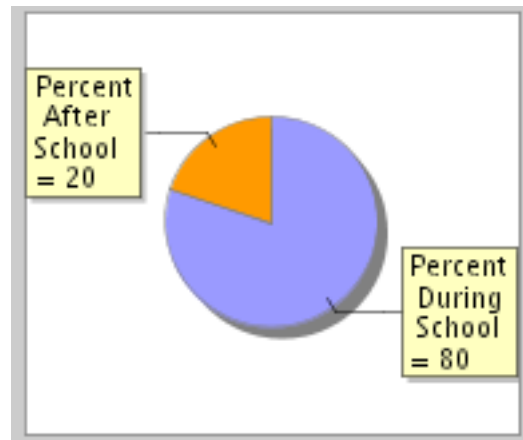
The table below provides more detail on time spent by the students.

Hours Worked During School	Hours Worked Out of School	Total Hours Worked	Percent Worked Out of School
3,044	758	3,802	20%

The students received 3,802 hours of instruction with 3,044 hours completed during regular school hours and 758 hours completed outside of school. A total of 20% of their academic work was completed at home or at other places where computers were available.

This 20% is a useful indicator of the students' use of Internet based learning materials at home or other Internet equipped facilities. It also provides an important indicator of school "productivity." Work performed on the software outside of the school day increases instruction without increasing instructional costs.

Nationally, we find that the amount of work completed outside school hours with SkillsTutor runs around 20%.



## Academic Performance of Students

### Pretest/Posttest Comparisons

Generally, at any given time when data are pulled and analyzed, more pretest data are available than posttest data because students are still working on the tutorial content and have not completed all associated posttests.

For the purposes of analyzing academic performance, and conducting pre-post test comparisons, data are analyzed only in those instances where both pre and post tests have been completed. Students are divided into groups to make the degree of any problem easier to understand.

### Meaning of Groups

Data is analyzed in those areas where both Pre and Posttests have been completed.

1. The first group has tests scores in the 90% to 100% range. The students with these scores demonstrate strong knowledge of the subject (e.g. Statistics and Probability). Teachers may or may not require that these students take instruction in content where they get such high scores on pretests.
2. The second group has scores between 70% and 89%. These scores, along with those in the 90% to 100% group, are in a space called “the passing zone.” It is highly likely that students with these scores can pass this content area on state tests. However, we recommend that these students take instruction on concepts they missed.
3. The third group has scores between 50% and 69%. These students generally missed “making the cut” above 70% because one or two questions were missed. Brief instruction brings large numbers of these content tests into the 70% to 100% category.
4. The fourth group has scores between 0% and 49%. These scores demonstrate that gaps exist in the students’ knowledge of this content. Any students whose scores remain in this category after completing computer assisted instruction need intervention by their teachers. The number that remains below 50% rarely exceeds 5% to 9% of the total student population, but there will be some students who need special assistance.

## Importance of Pretests to Professional Development

Historically, Title II of ESEA has encouraged teachers to engage in professional development activities. The development activities allowed teachers to obtain the advanced degrees and credits required for salary increases. The content priorities were very open-ended.

The revisions of ESEA (NCLB) were driven by a different set of priorities. Student academic outcomes became the focus in the Law in preparing all Titles of ESEA (NCLB). For example, when a local education agency applies to the state for funds, the following information is required:

### *Title II, Section 2122. Local Applications and Needs Assessment*

“(A) (1) A description of the activities to be carried out by the local education agency under this subpart and how these activities will be aligned with

(1) challenging State academic content standards and student academic achievement standards, and State assessments; and

“(B) A description of . . . why the activities are expected to improve student academic achievement.

Finally, any local education agency using these funds to provide:

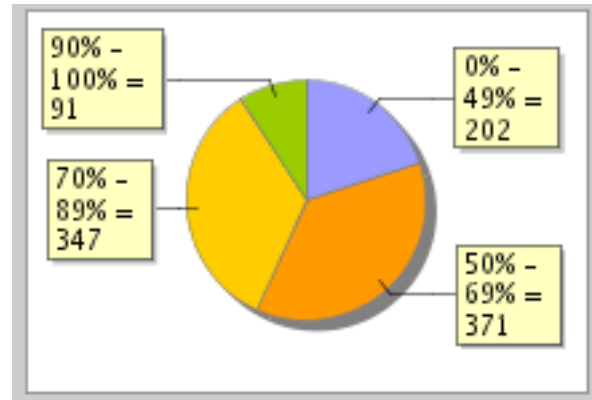
*(9) A description of how the local education agency will provide training to enable teachers to*

- A. Teach and address the needs of students with different learning styles, particularly students with disabilities, students with special learning needs, and students with limited English proficiency;*
- B. Improve student behavior in classrooms and identify early and appropriate interventions to help students described in subparagraph (A) learn;*
- C. Involve parents in their child’s education; and*
- D. Understand and use data and assessments to improve classroom practice and student learning.*

All professional development activities must be aligned with content priorities for students and designed to improve student academic outcomes.

## Implementation Status of SkillsTutor Software

In general, if a large percentage of pretests are below 70% in a content area, teachers should consider if enough instructional time has been provided in those areas. They should also consider whether they have enough content knowledge in these areas. Before interpreting these data the teacher should be comfortable that the incidence of recorded scores is sufficient for comparisons to occur.



There are 438 pretest scores (43%) in the “passing zone” (70% - 100%). The tests that have just “missed the cut” number 371, (37%). 202 (20%) test scores were below 50%.

Scoring Group	Pretests	Percent
90% - 100%	91	9%
70% - 89%	347	34%
50% - 69%	371	37%
0% - 49%	202	20%
Total	1,011	100%

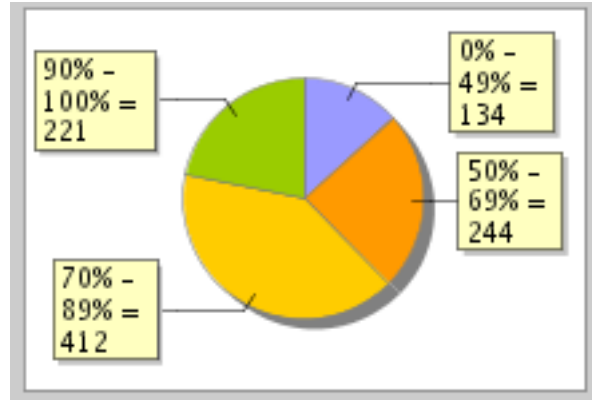
## Achievement Outcomes from Students

The table below shows the progress of students working with the software. The posttests are counted and placed in the three primary groups:

- Tests in the passing zone
- Tests that missed the cut
- Tests identifying students possibly needing special assistance

Scoring Group	Posttests	Percent	Change
90% - 100%	221	22%	13%
70% - 89%	412	41%	6%
50% - 69%	244	24%	-13%
0% - 49%	134	13%	-7%
Total	1,011	100%	

The passing zone now has 633 posttests, which represent 63% of the posttests taken. There are 244 tests that “miss the cut” by one or more answers in the 50% - 69% range, representing 24% of the tests taken. This compares to 371 pretests in that same scoring range. The scores below 50% are also found in 134 posttests.



## Pretest - Posttest Comparisons

By reviewing the pretests it can be determined to what extent the schools’ teachers are succeeding in preparing students in a variety of content areas.

MATH				
Scoring Group	Pretests	Percent	Posttests	Percent
70% - 100%	357	39%	540	60%
50% - 69%	358	39%	240	26%
0% - 49%	192	21%	127	14%
Total	907	100%	907	100%

READING				
Scoring Group	Pretests	Percent	Posttests	Percent
70% - 100%	78	80%	87	90%
50% - 69%	9	9%	4	4%
0% - 49%	10	10%	6	6%
Total	97	100%	97	100%

WRITING				
Scoring Group	Pretests	Percent	Posttests	Percent
70% - 100%	3	43%	6	86%
50% - 69%	4	57%	0	0%
0% - 49%	0	0%	1	14%
Total	7	100%	7	100%

## Harnessing Technology to Support the Teacher

Technology’s primary roles in U.S. business are to:

- Improve the quality of products and services
- Improve the quantity of products and services
- Provide new services
- Reduce menial tasks performed by workers

While educators have been quick to want to have computers in their schools and classrooms, they have been slow to systematically examine opportunities to demonstrate productivity gains from having modern technologies in their schools.

The introduction of web-delivered software has resulted in significant growth in productivity. Over the past few weeks, teachers using the program have provided students with 3,797 pretests and posttests and 18,301 lessons and quizzes in basic academic areas.

Pretests	Lessons & Quizzes	Posttests
2,443	18,301	1,354

In addition, all of these quizzes, tests and lessons were scored and placed into reports for teachers, administrators and parents. All this was accomplished without additional staff. The school simply applied technology to the most important service a school can provide students – individualized diagnostic and prescriptive instruction.

This software is not designed to be a curriculum or to replace individualized teacher involvement. However, as demonstrated by this report, access to relevant content on a 24/7 basis can prove to be an effective support to the teacher and Principal in their work. *Impact Education*, in collaboration with the *Orion Research Group*, is pleased to be working with Reed Elementary School in this effort.