



PEARSON SUCCESSMAKER READING EFFICACY STUDY

2010-11 FINAL REPORT

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EXECUTIVE SUMMARY

Gatti Evaluation partnered with Pearson to evaluate the effectiveness of the SuccessMaker Reading program. SuccessMaker is an adaptive, computer-based learning program that offers an instructional management system, placement and formative assessment, individualized elementary and middle grades reading and mathematics curriculum resources, and a reporting system to inform administrators and teachers as to student progress.

The primary goal of this study is to conduct rigorous research to support the assertion that the SuccessMaker Reading program effectively increases students' English language arts achievement, specifically vocabulary, comprehension, and fluency, as well as academic attitudes. The second goal of the study was to collect information on teacher and student attitudes toward specific features and aspects of the SuccessMaker program.

The achievement and attitudes of a randomly selected group of program users was compared against classrooms of students that did not regularly use a computer-based adaptive reading program. Classrooms of students were randomly assigned to study groups (i.e., comparison v. SuccessMaker Reading) within each grade at each school. Students in classrooms randomly assigned to implement SuccessMaker Reading made regular use of the program for one hour a week while students in comparison classrooms received English language arts instruction from programs and materials currently in use at their schools.

The majority of 3rd and 5th graders received instruction from six widely-used reading programs from four publishers. Conversely, the majority of 7th grade students (i.e., 63%) received instruction from non-published, largely teacher-created, curricula. Classrooms of students were randomly assigned to groups (i.e., comparison v. SuccessMaker Reading) at each grade within each school.

The SuccessMaker Reading program was evaluated in eighty diverse 3rd, 5th and 7th grade classrooms from eight urban and suburban school districts in seven different states (i.e., AZ, CA, IN, KS, MI, MO, TX) during the 2010-11 school year. The study sample was very large with 1,711 students, 948 of which were SuccessMaker Reading users. The study sample was also diverse. All grades had a high percentage of Hispanic and African-American students (i.e., 3rd Caucasian = 62%, 5th Caucasian = 49%, 7th Caucasian = 51%), as well as a substantial number of students eligible for free or reduced priced lunch (i.e., 3rd 36%, 5th 45%, 7th 53%) and students performing one or more grade equivalents below grade level at the beginning of the school year (i.e., 3rd 24%, 5th 20%, 7th 32%).

RQ4: How was the SuccessMaker Reading program implemented, and how are teachers using program reporting to monitor progress and inform instruction?

SuccessMaker teachers received both an initial training seminar and a follow-up training session by Pearson educational consultants. Third and fifth grade SuccessMaker students generally used the program during their regular reading instruction time, supplanting at least some of their core reading instruction. All 7th grade teachers taught multiple literature sections and all but one of the eleven 7th grade SuccessMaker classrooms used the program during their scheduled block

time. While program users were using SuccessMaker, most comparison group students received additional ELA instruction

Most teachers went to the lab two (i.e., 73%) or three times a week resulting in a median program usage of 26, 22, and 18 hours, for 3rd, 5th, and 7th grade respectively. The median number of exercises attempted every ten minutes was 11, 8, and 6, with a rate of 83%, 77%, and 74% exercises correct. The number and percent of skills mastered on the program similarly varied with 87%, 74%, and 64% percent of skills mastered.

A majority of the SuccessMaker teachers (i.e., 92%) recorded utilizing the program's reporting system in an educationally significant way a median of 12 times. Most classroom teachers used the reporting information to inform instruction, identify on/off task behavior as well as to monitor student progress. Teachers also used the reports to convey student progress information to parents.

RQ3: How did teachers and students react to the SuccessMaker Reading program?

Teachers and students quickly became comfortable with the SuccessMaker program, and felt the program was a good educational investment. When interviewed, the teacher response to the program was overwhelmingly positive with 70% of the 1,063 recorded comments coded as positive in nature. Teachers appreciated the reporting system, felt the initial placement and adaptive motion of students through the program were effective, the learning activities were well-differentiated and aligned to their current curricula and state educational objectives, the program challenged both their lower and higher achieving student populations, and that the audio and graphics allowed ELL and lower-achieving populations to learn. Teachers also firmly believed that their students liked using the program and felt that the program made the learning process more fun. When surveyed, only a small minority of students indicated they disliked the program.

RQ2: Do students using the SuccessMaker Reading program demonstrate more positive attitudes toward reading and reading instruction when compared to their non-SuccessMaker counterparts?

In conjunction with the very positive teacher and student comments, SuccessMaker Reading students at 3rd and 5th grade demonstrated statistically greater gains in their academic attitudes than their comparison group counterparts. These effects were also seen in several at-risk populations. The 7th grade comparison group students had statistically more positive academic attitudes than the SuccessMaker students.

RQ1: Do students using the SuccessMaker reading program demonstrate a significant improvement in achievement over their non-SuccessMaker counterparts?

A challenging assessment battery was group-administered to students to measure achievement and academic attitude growth during the school year. The assessment battery consisted of the *Group Reading Assessment and Diagnostic Evaluation (GRADE)*, a test of vocabulary and reading comprehension, the *AIMSweb Reading Curriculum-Based Measurement*, a test of accuracy and pacing for oral reading (i.e, words read correctly in one minute), and a reading academic attitude survey.

In all three grades, SuccessMaker Reading users statistically significantly outperformed the comparison group students on the GRADE. In addition, 3rd grade SuccessMaker students outperformed the comparison group in fluency on the AIMSweb.

GRADE	Effect Size ^{1,2,3}
3 rd GRADE Total	0.16 (56%)
5 th GRADE Total	0.06 (53%)
7 th GRADE Total	0.25 (60%)

1. effect size = group mean gain score difference / comparison sample standard deviation
 2. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.
 3. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

Further, SuccessMaker users from at-risk populations in all three grades statistically significantly outperformed the comparison group on the GRADE, as well as on the AIMSweb at 3rd grade.

The achievement data implies that mainstream students using SuccessMaker Reading, including at-risk students, can be more successful in vocabulary, comprehension and fluency when receiving 16 hours or more on the program over their first school year using the program. Furthermore, it appears SuccessMaker users experience greater gains in achievement with increased usage.

I. INTRODUCTION

As elementary and middle schools strive to meet the adequate yearly progress goals set for them in reading and mathematics achievement, many are attempting to maximize their efforts by turning to instructional technology like the SuccessMaker¹ program. Gatti Evaluation partnered with Pearson to evaluate the effectiveness of the SuccessMaker program. Information gathered during this study will inform future revisions of the program and provide evidence of program efficacy.

Pearson partnered with Gatti Evaluation to study the efficacy of the SuccessMaker Reading program in achieving positive educational attitudes and achievement outcomes.

This report provides methods and results from the second phase of the efficacy research conducted during the 2010-11 school year on the SuccessMaker Reading program. This report includes study methodology, nuanced program usage information, teacher and administrator attitudes, as well as student attitudinal and achievement gains. This efficacy study evaluated the Reading program in eight school districts in seven different states (i.e., AZ, CA, IN, KS, MI, MO, TX).

Instructional Technology Literature

SuccessMaker is an adaptive, computer-based learning program that offers an instructional management system, placement and formative assessment, individualized elementary and middle grades reading and mathematics curriculum resources, and a student progress reporting system.

SuccessMaker is an adaptive, computer-based learning program that offers an instructional management system, placement and formative assessment, individualized elementary and middle grades reading and mathematics curriculum resources, and a reporting system to inform administrators and teachers as to student progress. It is widely believed that making formative assessment an integral part of instructional practice is one of the best ways to improve student learning.² English language arts education and instruction may be aided by technology in various ways, with the technology assuming the role of enhancing, amplifying, and organizing curricula.³ It is also well-documented that both the scope of ways and effectiveness of technology in aiding instruction is increasing with each passing decade.⁴ What remains unclear are the best ways to utilize technology to find significant improvement in student achievement over non-technology methods that make use of the same pedagogy.

¹ <http://www.pearsondigital.com/>

² National Council of Teaching of Mathematics (2000). Principles and Standards for School Mathematics. Reston, Va.: National Council of Teachers of Mathematics.

³ Heid, M. K. (1997). The technological revolution and the reform of school mathematics. *American Journal of Education*, 106(1), p5-61.

⁴ Jenks, M. S., & Springer, J. M. (2001). A view of the research on the efficacy of CAI. *Electronic Journal for the Integration of Technology in Education*, 1(2).

Theoretically, well-designed interventions can increase student achievement especially when integrated with classroom instruction.^{5,6} Although an intervention may be skillfully applied to create an educational environment that significantly increases achievement, poorly designed and implemented interventions will provide little or no benefit, and may even be detrimental. Poorly designed and implemented curricula can confuse and frustrate students and teachers, proving to be a waste of money and valuable learning time. For these reasons, state adoption committees and the federal government (i.e., No Child Left Behind Act⁷) require publishers to conduct rigorous efficacy research to support their educational materials.

Study Goals and Research Questions

The primary goal of this study was to conduct rigorous research to support the assertion that the SuccessMaker Reading program increases students' English language arts achievement, specifically vocabulary, comprehension, and fluency, as well as academic attitudes. The achievement and attitudes of a randomly assigned group of program users was compared against classrooms of students that did not regularly use a computer-based adaptive reading program. Classrooms of students at each grade were randomly assigned to groups within each school. Further, this study tested the SuccessMaker program during its first year of implementation, the most challenging year for any new program to impact student achievement.

The second goal of the study was to collect information on teacher and student attitudes toward specific features and aspects of the SuccessMaker program. Specifically, how do teachers and students respond to the program, and how is the program being used?

The research questions for this study are outlined in the following four parts:

RQ1: Do students using the SuccessMaker reading program demonstrate a significant improvement in achievement over their non-SuccessMaker counterparts?

RQ2: Do students using the SuccessMaker Reading program demonstrate more positive attitudes toward reading and reading instruction when compared to non-SuccessMaker counterparts?

RQ3: How did teachers and students react to the SuccessMaker Reading program?

RQ4: How was the SuccessMaker Reading program implemented, and how are teachers using program reporting to monitor progress and inform instruction?

⁵ Parr, J. M., & Fung, I. (2000). A review of the literature on computer-assisted learning, particularly integrated learning systems, and outcomes with respect to literacy and numeracy: Final Report. Report to New Zealand Ministry of Education.

⁶ Rana M. Tamim, Robert M. Bernard, Eugene Borokhovski, Philip C. Abrami, & Richard F. Schmid (2011). What forty years of research says about the impact of technology on learning: A second-order meta-analysis and validation study. *Review of Educational Research* 81(1) 4-28.

⁷ <http://www.ed.gov/nclb/landing.jhtml>

II. METHODOLOGY

The SuccessMaker Reading program was evaluated in eighty diverse 3rd, 5th and 7th grade classrooms from eight urban and suburban school districts in seven different states (i.e., AZ, CA, IN, KS, MI, MO, TX) during the 2010-11 school year. The program was evaluated via a two-group, classroom level randomized, baseline to end-of-year assessment research design. Teachers or sections within each grade at every school were randomly assigned to one of two study groups (i.e., comparison v. SuccessMaker Reading). Students in classrooms randomly assigned to implement SuccessMaker Reading made regular use of the program for one hour a week in two or three sessions while students in comparison classrooms generally received instruction from non-computerized English language arts programs currently in use at their schools.

Classrooms of students within each grade at every school were randomly assigned to one of two study groups, SuccessMaker Reading users or a comparison group.

Gatti Evaluation provided research schools all data collection materials, maintained communication with the study sites, and followed clear data collection procedures throughout the study to ensure that both study and program implementation ran smoothly and effectively. The following sections provide information on study procedures, including; student and teacher level data collection, site recruitment and selection, the nature of English language arts instruction at the study sites, program training and implementation, detail on educational settings at each study site, demographic information for study participants, and the statistical methodologies used to analyze outcomes.

Student Outcome Measures

A challenging assessment battery was group-administered to students to measure achievement and academic attitude growth during the school year.

An assessment battery was group-administered to students, proctored by their teachers, at the start of program use (i.e., baseline testing) and again in the last month of the school year (i.e., end-of-year testing). The assessment battery consisted of the *Group Reading Assessment and Diagnostic Evaluation* (GRADE), a test of vocabulary and reading comprehension, the *AIMSweb Reading Curriculum-Based Measurement*, a test of accuracy and pacing for oral reading (i.e., words read correctly in one minute), and a reading academic attitude survey. The assessment battery was intended to challenge the students; attempting to adequately assess incoming knowledge for a wide range of abilities while providing room for growth as knowledge was acquired during the school year. Schools returned completed student test booklets and surveys to Gatti Evaluation for scoring.

Group Reading Assessment and Diagnostic Evaluation (GRADE)

The GRADE is a standardized, nationally norm-referenced reading achievement test published by Pearson Assessment. The GRADE was constructed with all fifty states' standards in mind, covering a wide range of content topics and skills. The GRADE includes 11 levels that span grades preK-12, each with two parallel forms (i.e., level 3 for 3rd grade, level 5 for 5th grade, level M for 7th grade). Form A was administered at baseline and form B was administered at the end of the school year. The GRADE is not a timed test, but generally takes between 70 and 100 minutes to administer.

The level 3 forms have a total of 107 questions, while the level 5 forms have 84 questions, and the level M forms are made up of 89 questions. Both GRADE overall and subtest scores were reported. The *Vocabulary* and *Comprehension* subtest scores allowed the research team to evaluate the effectiveness of the program on important dimensions of reading/language arts acquisition.

In the level 3 form, the *Vocabulary* section is comprised of two subtests, *Word Reading* (30 questions) and *Vocabulary* (30 questions), and the *Comprehension* section is also broken down into *Sentence Comprehension* (19 questions) and *Passage Comprehension* (28 questions). For level 5, the *Vocabulary* section is comprised of 35 questions, and the *Comprehension* section is broken down into *Sentence Comprehension* (19 questions) and *Passage Comprehension* (30 questions). Lastly, in level M, the *Vocabulary* section is comprised of 40 questions, and the *Comprehension* section is broken down into *Sentence Comprehension* (19 questions) and *Passage Comprehension* (30 questions). *Listening Comprehension* is not included in the total GRADE score and is not reported.

Scores from the GMADE have been found to have an intraclass reliability in excess of 0.90 for the total score and in the neighborhood of 0.80 for subtest scores. At both baseline and end-of-year, the study sample produced reliability coefficients 0.93 and above for the total score and from 0.77 to 0.85 for the subtests.

AIMSweb R-CBM

The AIMSweb Reading Curriculum-Based Measurement is a test of reading fluency/pacing published by NCS Pearson. The outcome of interest on the AIMSweb is the number of words a student can read correctly in one minute starting from the beginning of an appropriately leveled pre-determined passage. Each student must read three different passages of which the middle score is recorded.

The number of words read correctly correlated highly between the three passages for all three grades and both testing sessions. Calculating bivariate Pearson correlations between the three passages produces three coefficients, one for each of the three pairings. The coefficients ranged from 0.89 to 0.93. Further, the average differences between the number of words read correctly ranged from 11 to 17 at 3rd grade, 11 to 15 at 5th grade, and 11 to 17 at 7th grade when the actual number of words read correctly ranged from 86 to 132, 122 to 156, and 140 to 170 respectively. This means that the average difference in the number of words read correctly between the three passages is only about 13% of the words read correctly at 3rd grade and about 10% at 5th and 7th.

It should be noted this basic measurement (i.e., words read correctly in one minute) of accuracy and pacing for oral reading is most appropriate as an outcome for early elementary grades when

judging the efficacy of the program. In SuccessMaker, the accuracy and pacing for oral reading is most emphasized in 2nd and 3rd grade. Accuracy and pacing is minimized at 5th grade and not included in the program at all in 6th through 8th grade.

Reading Academic Attitude Survey

The reading academic attitude survey was developed by the Gatti Evaluation principal investigator. Students responded to self-report questions (i.e., 16 questions at 3rd grade, 20 questions at 5th and 7th grade) regarding general reading attitude, confidence, motivation, and self-perceived aptitude. Student responses were coded as 1 for a positive response, 0 for a neutral response, and -1 for a negative response. This scoring method anchors a completely neutral student at an overall score of zero with positive total scores indicating an overall positive attitude. Further, students in SuccessMaker classrooms were surveyed as to their opinions on several aspects of the program.

Scores from former Gatti Evaluation attitude surveys have been found to have an intraclass reliability in excess of 0.75. At baseline the current study sample produced intraclass reliability coefficients of 0.73, 0.79, and 0.78 for grades 3, 5, and 7 respectively. The end-of-year testing produced intraclass reliability coefficients of 0.78, 0.81, and 0.80 for grades 3, 5, and 7 respectively.

Teacher Measures

The research team also collected data through teacher logs and classroom observations, as well as teacher interviews and focus groups. The teacher and classroom data increased the validity of the research findings related to achievement outcomes by verifying results through multiple data collection methods, adding context for results through the perspectives of various participants, and by collecting data at various time points during the study.

The research team collected achievement, attitudinal, as well as, observational and self-report data making the study both quantitative and qualitative in nature.

In addition to the assessment battery, qualitative data collection methods were also employed. The sources of qualitative data included; program reports, teacher surveys, daily lesson logs, classroom observations, as well as, teacher notes from electronic correspondences. Teachers were routinely asked for their opinions throughout the school year. Weekly lesson notes were collected for both SuccessMaker and comparison classes (i.e., 10-15 minutes completion time per week). Cumulative usage reports and program implementation logs were regularly collected from SuccessMaker users. All study classrooms were observed twice during the school year teaching routine reading lessons and SuccessMaker teachers were further interviewed as to their opinions regarding the program. All this data was compiled and content analyzed to determine teacher attitudes and performance, as well as to illuminate the various ways teachers and students interact with the program.

Weekly Teacher Logs

All study teachers were required to complete weekly logs in which they describe their English language arts lessons. Information from the weekly logs was important for two reasons. The first is to guarantee SuccessMaker teachers fully and regularly utilized all key components of SuccessMaker Reading to provide adequate opportunity for the program to positively influence student achievement. The second reason was to document the instructional model for all study teachers, including; classroom environment, teaching style, pacing, content and methods.

Teachers were asked not to spend more than 15 minutes per week completing the logs. It is clear several teachers spent more time, however, as many of the logs were returned with detailed comments. Teachers often shared candid weekly experiences with the Gatti Evaluation project manager and were typically happy to provide documentation describing weekly instruction and learning experiences related to the program. SuccessMaker and comparison group teachers summarized daily classroom English language arts instruction time, topics, and methods. In addition, SuccessMaker teachers summarized program usage and details of how information from the program was integrated into classroom instruction.

Teacher Observations

Classroom observations took place in November and again between March and May. Classroom observations were conducted by the Gatti Evaluation and Pearson research teams. All study classrooms from each site were observed at least once during routine reading lessons. Portions of the observation forms include a description of the classroom environment, summary of the lesson taught, teacher interviews, student comments, observed teaching strengths and weaknesses, pacing, and supplemental instruction information.

Students were also observed using the SuccessMaker program in the computer lab. These observations gave the research team an opportunity to witness the ability and willingness of teachers to properly implement the program, verify teacher reported information, identify adherence to the program usage schedule, as well as observe general classroom environment and teaching styles.

It should be noted that one or two classroom/lab observations provide just a snapshot of the classroom/lab environment. Some teachers were required to change their normal schedules to accommodate as many observations as possible. The observations are, however, worthwhile because they are the only opportunity the research team has to directly observe the study students and teachers in action and verify self-reported information.

Teacher Surveys

All participating teachers were administered two surveys about their teaching background: a baseline survey, and an end-of-year survey. The purpose of the baseline teacher survey was to collect information on teaching experience, curricula/materials, and prior research study experience. Teachers were asked to indicate their highest level of education and the number of years teaching total, as well as years they had spent at their district, school, and grade level.

The end-of-year teacher survey was focused more on gathering details about school context, teaching philosophy, and curriculum implementation. Teachers were asked about their curriculum materials, technology usage, and teaching strategies. Teachers were also asked to

describe ways in which their school and students are unique. All of this information allowed researchers to gain additional insight into the overall experience at each research site.

SuccessMaker Teacher Focus Group

A focus group style interview process was chosen by the research team to collect teacher attitudes towards the SuccessMaker program. The face-to-face nature of a focus group, though more labor intensive, can be superior to simple questionnaires in collecting detailed attitudinal information from participants. When properly conducted, the focus group discussion gravitates to those topics most important to the participants, and can provide more nuanced information. Collecting attitudinal data in person allows for a better understanding of participant tone and gravity of responses, and provides opportunity to delve deeper into topics.

The focus group results describe what teachers and students liked about the SuccessMaker program, how the program could be improved, and how teachers are using specific features of the system.

Focus group sessions were conducted at each school during the second set of site observations. Representatives from the research team facilitated each session. The sessions lasted approximately 60 minutes. Thirty-six of the 37 SuccessMaker teachers were available to participate in the focus group sessions. The focus group sessions provided a forum for teachers and administrators to answer specific questions, as well as express their professional and personal opinions regarding the SuccessMaker Reading program. Each session held the teachers' comfort level as a high priority. The teachers were encouraged to speak without hesitation or inhibition and to be as honest and candid as possible. Though the facilitator followed a structured interview format, the teachers were allowed to direct the discussion and provide their reactions to- and comment on- any and all aspects of the program.

Teachers were asked about their general opinions of the program, as well as their reactions to specific features. In order to uncover how teachers were integrating report information from the program with their classroom instruction and goals, questions were asked pertaining to the reporting system and how teachers were utilizing that system. Teachers were also asked to describe student reactions to the program and how the program impacted their students' learning experience. Efforts were made to minimize response bias by avoiding leading questions and asking for the program's strengths and weaknesses alike.

The research team compiled a large master file of participant responses. Following an exhaustive review of the teacher responses, a two-dimensional coding system was developed to organize those responses. Responses were categorized by *Topic Area* and *Attitude*. The topic areas describe the aspect of the program a response is directed towards. Topic area codes have a two-digit numeric format with the first digit on the left indicating general topic category (ex., teacher opinion, student response to program, program content, specific features) and the second digit indicating a specific topic within a general category. The topic codes are further categorized by grade level, study site, and paired with either a + or - to indicate the general attitude toward an aspect of the program or the tone of the response.

Site Recruitment and Selection

Gatti Evaluation and Pearson Digital Learning account executives identified potential research partners that met certain characteristics important to the study, such as no previous exposure to any version of SuccessMaker, at least 2 teachers per study grade level, and geographic diversity. Potential research schools were contacted by e-mail and given details about the study. Probable sites were further vetted through their Pearson Digital Learning account executive, then invited to participate in the study. As schools responded to the invitation, they were further screened with a detailed questionnaire and an infrastructure checklist. The intent of the questionnaire was to ensure participants understood all the requirements and benefits associated with participation. It was required that schools did not currently use the SuccessMaker program, all participating teachers abide by the random assignment, and all randomly selected SuccessMaker classroom students use the program for a minimum of one hour per week. The purpose of the infrastructure checklist was to ensure that the SuccessMaker program could be installed and successfully run at each site.

When sites were deemed eligible for participation and demonstrated strong interest, the Principal Investigator completed the research application process with each site. Final acceptance to the study required a district level administrator (ex., curriculum director, superintendent) and a school level administrator (ex., principal) to sign a memorandum of understanding outlining the responsibilities of each stakeholder. No available students of any socio-economic level, English proficiency level, or ethnic background, who opted to participate in the study, were excluded from the study. Passive informed consent of both students and parents/guardians was required by the research team and secured by the schools.

Two school districts came from Arizona. The first school from Arizona resides in an urban area and serves 1st through 5th grade students. The second school from Arizona is located in a suburb and serves kindergarten through 8th grade students. A single school represents California and is located in an urban area. It serves 1st through 6th grade students. A single school represents Indiana and is located in an urban area.

Two schools came from Kansas. They are both in the same district and are private schools. The schools reside in a suburban area and both served kindergarten through 8th grade students. Two schools represent Michigan and they both reside in a large suburb. The first school is an elementary school and it serves kindergarten through 5th grade students. The second Michigan school is a middle school and it serves 6th through 8th grade students.

A single private school represents the Missouri district. The school resides in a small suburb and serves kindergarten through 8th grade students. Lastly, three schools represent the Texas district. The first school resides in an urban area and serves kindergarten through 4th grade students. The second school resides in a large suburb and also serves kindergarten through 4th grade students. The third school resides in a large suburb and serves 5th and 6th grade students.

Ethnic and socio-economic diversity among the student population were two criteria the evaluation team considered when recruiting study sites. A third criterion was that students exhibit a wide range of ability with respect to mathematics and reading achievement. Table 1

shows, according to most recent state achievement testing data, the percent of each school’s students meeting state math standards range between 7% below to 74% above statewide results and students meeting state reading standards range between 15% below to 74% above statewide results. The evaluation team sought out diversity in the study sample to ensure the program would be used by learners of all abilities and backgrounds, thus reflecting the reality that is today’s elementary classrooms.

Table 1 SuccessMaker Reading Study Site State Assessment Information								
					School Results		State Wide Results	
School Year	Grade	State	District	School	Meets Math Standards	Meets Reading Standards	Meets Math Standards	Meets Reading Standards
2009-10	3	AZ	1	1	83%	89%	43%	60%
2009-10	5	AZ	1	1	94%	96%	39%	65%
2009-10	7	AZ	2	2	63%	81%	34%	67%
2009-10	3	CA	3	3	88%	76%	70%	80%
2009-10	5	CA	3	3	88%	91%	70%	80%
2009-10	3	IN	4	4	70%	66%	77%	81%
2009-10	5	IN	4	4	86%	78%	82%	73%
2007-08	3	KS	5	5	86%	64%	26%	26%
2007-08	5	KS	5	5	92%	89%	27%	25%
2007-08	7	KS	5	5	96%	92%	27%	23%
2007-08	3	KS	5	6	100%	100%	26%	26%
2007-08	5	KS	5	6	93%	93%	27%	25%
2007-08	7	KS	5	6	78%	92%	27%	23%
2010-11	3	MI	6	7	99%	83%	95%	87%
2010-11	5	MI	6	7	82%	78%	80%	85%
2010-11	7	MI	6	8	85%	78%	85%	79%
2009-10	3	MO	7	9	N/A	N/A	37%	27%
2009-10	5	MO	7	9	N/A	N/A	37%	32%
2009-10	7	MO	7	9	N/A	N/A	39%	35%
2010-11	3	TX	8	10	91%	95%	86%	89%
2010-11	3	TX	8	11	80%	91%	86%	89%
2010-11	5	TX	8	12	87%	87%	48%	46%

Note: School Year designates latest school year state assessment information was available.

ELA Instruction

Teachers were expected to implement their current adopted core English language arts curricula as required by their district. The majority of 3rd graders (i.e., 88%) received instruction from six widely-used reading programs from four publishers. The remaining 3rd grade students received instruction from non-published teacher created curricula. A larger portion of the 5th grade students received instruction from non-published teacher created curricula. The majority of 5th graders (i.e., 62%), however, received instruction from four widely-used reading programs, each from a different publisher. Conversely, the majority of 7th grade students (i.e., 63%) received instruction from non-published, largely teacher-created curricula. The remaining 7th grade students received instruction from three different widely used published literature programs.

The 3rd grade SuccessMaker and comparison groups were similar in teacher experience, in years teaching, years teaching in current district, and years teaching their current grade. More of the 3rd grade SuccessMaker sample was taught by a teacher with a Master's degree. The comparison group received more classroom reading instruction. A similar portion of both groups of students received regular assistance in the classroom. Lastly, the SuccessMaker group's teachers reported less strict adherence to the adopted reading program.

3 rd Grade	SuccessMaker	comparison
years teaching ^S	12.8	16.2
years at current district	11.5	12.6
years at current grade ^S	7.0	9.1
master's degree ^S	62.1%	37.9%
minutes daily reading instruction ^S	80	86
lesson planning ^S	55.6%	44.4%
similar pacing ^S	53.6%	46.4%
prefer balanced literacy ^S	60.1%	39.9%
years using adopted program	6.0	6.6
do not primarily use program	70.0%	30.0%
whole group	60.2%	58.5%
substitute	3.8%	3.9%
regular classroom assistance	60.0%	63.0%
^S Indicates a statistically significant difference.		

The 5th grade SuccessMaker and comparison groups were similar in teacher experience and the portion of students taught by a teacher with a Master's degree. The SuccessMaker group

received fewer minutes of classroom reading instruction. Both groups of teachers reported similar adherence to the adopted reading program and a similar portion of both groups of students received regular assistance in the classroom.

5 th Grade	SuccessMaker	comparison
years teaching ^S	6.6	10.2
years at current district ^S	5.2	7.3
years at current grade ^S	3.4	6.5
master's degree ^S	48.5%	51.5%
minutes daily reading instruction ^S	81	85
lesson planning ^S	56.6%	43.4%
similar pacing ^S	55.5%	44.5%
prefer balanced literacy ^S	54.4%	45.6%
years using adopted program ^S	3.1	5.4
do not primarily use program	50.0%	50.0%
whole group	59.5%	56.7%
substitute ^S	6.2%	8.2%
regular classroom assistance	70.0%	74.0%
^S Indicates a statistically significant difference.		

The 7th grade SuccessMaker and comparison groups were similar in teacher experience and reported similar adherence to the district adopted literature program. Somewhat more of the SuccessMaker sample, however, was taught by a teacher with a Master's degree. More SuccessMaker students received regular assistance in the classroom.

7 th Grade	SuccessMaker	comparison
years teaching	11.4	11.7
years at current district	8.4	7.7
years at current grade	6.1	5.1
master's degree	57.1%	42.9%
minutes daily reading instruction ^S	56	
similar pacing	55.8%	44.2%
prefer balanced literacy	54.6%	45.4%
years using adopted program	3.6	3.5

do not primarily use program	52.0%	48.0%
whole group ^S	62.2%	71.6%
substitute ^S	5.7%	4.8%
regular classroom assistance ^S	91.0%	76.0%
^S Indicates a statistically significant difference.		

SuccessMaker Implementation

Teachers received multiple training sessions by Pearson educational consultants. This well-received training allowed teachers to fully implement the SuccessMaker program and helped foster positive teacher and student attitudes.

SuccessMaker Teacher Training

To initiate the study, Gatti Evaluation conducted study orientations for all teachers at the start of the school year. The study orientation formally introduced the teachers to the research team, explained in detail the requirements and benefits of participation in the study, as well as, addressed any immediate questions or concerns about the research. All teachers were required to read and sign informed consent forms.

The publisher ensured that sites had full access to the program and that access was continual throughout the duration of the study. Pearson also provided free product training and funding to cover the cost of substitute teachers during training. All teachers with SuccessMaker classrooms were required to attend training sessions facilitated by an educational consultant. Initial training took place on-site over the course of one full work day. This training introduced administrators, teachers, and technicians to the key components of the SuccessMaker program, including; student login, learning environments, classroom management and reporting systems, as well as how to best implement these in practice. Initial product training sessions typically began with a group presentation. Then teachers moved to computers where they were given the opportunity to use the program as students would. Teachers had the responsibility of training their students to use the program.

The date of initial training varied, dependent on when a site was added to the study (please see Table 2). Six schools were trained prior to the start of their school year (i.e., CA school, both schools in MI, and all three schools in TX). The remaining six schools were trained in the second month of their school year (AZ district 1 and 2, IN school, both schools in KS, and MO school).

Follow-up training was further provided to each site to support consistent usage of the program and to fully acquaint teachers with all aspects of the reporting system. The follow-up training sessions typically lasted three hours and began with a group presentation, then teachers moved to computers where they were shown how best to monitor their class and individual student progress. As needed, additional training sessions were also offered to provide a more detailed

understanding of the program, identify and correct district or school level technical issues, address student's special needs, and to support consistent implementation of the program.

Table 2 SuccessMaker Reading Study Training Dates					
State	District	School	School Start Date	Initial Training Date	Follow-up Training Date
AZ	1	1	8/9/2010	9/1/2010	11/18/2010
AZ	2	2	8/26/2010	9/16/2010	12/10/2010
CA	3	3	8/25/2010	8/20/2010	12/8/2010
IN	4	4	8/17/2010	9/29/2010	11/22/2010
KS	5	5	8/17/2010	9/2/2010	12/2/2010
KS	5	6	8/26/2010	9/2/2010	11/12/2010
MI	6	7	9/7/2010	8/30/2010	11/1/2010
MI	6	8	9/7/2010	8/30/2010	11/1/2010
MO	7	9	8/17/2010	9/3/2010	11/29/2010
TX	8	10	8/24/2010	8/9/2010	11/1/2010
TX	8	11	8/24/2010	8/9/2010	11/1/2010
TX	8	12	8/24/2010	8/9/2010	11/1/2010

The trainings were well-received. The research team strongly believes that ongoing professional development can significantly affect the potential for a program such as SuccessMaker to foster positive teacher and student attitudes, meet students' needs, and ultimately increase student achievement.

SuccessMaker Program Usage

Classrooms randomly assigned to use SuccessMaker Reading were expected to use the program for a minimum of one hour per week. All study teachers primarily implemented the program in a computer laboratory environment with their entire class. Most teachers typically implemented the program two (i.e., 73%) or three days per week. The research team required that each site coordinator regularly download last session reports to check for students that were struggling or exhibiting off-task behavior. The research team also required that cumulative reports were downloaded and sent at least once a month to monitor proper program usage. In rare cases, flagged students were more rigorously monitored while using the program.

SuccessMaker students generally used the program during their regular reading instruction time, supplanting at least some of that time. While treatment students were using SuccessMaker, most comparison group students received additional ELA instruction.

SuccessMaker students in 3rd grade generally used the program (i.e., 65% of classes) during their regular reading instruction time, supplanting at least some of that time. The majority (i.e., 63%) of the 5th grade SuccessMaker classes went to the lab to use the program during regular reading instruction time. All 7th grade teachers taught multiple literature sections and all but one of the 11 SuccessMaker classrooms used the program during their scheduled block time.

When 3rd grade SuccessMaker classrooms were using the program in the lab, most comparison group students used print materials to further practice reading strategies and/or received extra support with the weekly skills and story. Two 3rd grade comparison teachers primarily used this time for writing instruction and two other teachers dedicated half this time to use SuccessMaker Math (i.e., 30 minute a week).

Most 5th grade comparison teachers used non-digital materials to provide more in depth instruction (ex., small group/practice stations, guided reading, enrichment activities, re-teaching). One teacher used this time in part to cover math (i.e., non-digital), while two other teachers took some of this time to use the SuccessMaker Math program (i.e., 30 minute a week). Another 5th grade comparison teacher used this time to cover social science and science content. Those 7th grade sections not using SuccessMaker also received more in-depth English language arts instruction (ex., silent reading, literacy circles, re-teaching) using non-digital materials.

The three grade levels naturally varied inversely in their usage time with medians⁸ of 26, 22, and 18 hours logged on the program for 3rd, 5th, and 7th grade users respectively. The three grade levels also varied in their success rates and productivity with higher grades attempting fewer exercises and getting fewer of these exercises correct. The median number of exercises attempted every ten minutes was 11, 8, and 6, with 83%, 77%, and 74% percent of these exercises correct for 3rd, 5th, and 7th grade users respectively. The number and percent of skills mastered on the program similarly varied with 87%, 74%, and 64% percent of skills mastered for grades 3, 5, and 7 respectively.

While the variation in usage time was due to the stricter scheduling constraints at higher grades, the difference in productivity and success rates occurs naturally due to the content and design of the program. For example, 3rd grade users are reading much shorter and simpler passages than the 5th and 7th grade users. The research teams feels the program users were continuously and appropriately challenged as they progressed through the program.

SuccessMaker Report Usage

The program's reporting feature was well-received by the teachers. Individual preference and teacher expectations dictated how teachers utilized information gained from the reports. SuccessMaker teachers recorded how and when they used the program's reporting feature in their weekly logs. A majority of the SuccessMaker teachers (i.e., 92%) stated in their logs that they used the reporting system at least once. Teachers recorded utilizing the program's reporting system, in an educationally significant way, a median of 12 times ($P_{25} = 7\%$, $P_{75} = 16\%$). For our purposes here, using the reporting system in an *educationally significant* way would include using report information to inform classroom instruction, ability grouping, state testing goals and other benchmarks, parent conferences, on/off-task behaviors, as well as, pull-out, and SuccessMaker intervention.

⁸ The sample median is defined as the 50th percentile or the score for those students in the very center of the distribution of scores.

Most classroom teachers used the SuccessMaker reporting information to inform instruction, identify on/off task behavior as well as to monitor student progress. Teachers also used the reports to convey student progress information to parents.

A majority of the SuccessMaker teachers stated in their logs that they used the reporting system at least once to check students' progress (i.e., 81%), to check for on/off task behaviors (i.e., 70%), determine which students needed help while using the program (i.e., 68%), or to inform additional classroom instruction or practice on specific topics (i.e., 57%). While a few teachers used the report information for these purposes on a regular basis, most teachers accessed the reports three to four times during the school year.

To a lesser extent, several teachers used information from the reporting system to evaluate students on state testing goals (i.e., 30%), to ability group students during classroom instruction (i.e., 43%), or to provide data to parents (i.e., 27%). Rarely was the program used to help diagnose students for Title 1 or pull-out intervention (i.e., 5 times by 3 teachers).

Settings

This section summarizes the educational model and environment for each study site as well as a demographic breakdown. This information is crucial for determining how applicable results from this study may be to the consumers of this report.

Arizona District One

In 2009, the district served a community of approximately 16,000. The first participating Arizona school resides in a small city. It is a blue ribbon school with a high degree of parental support and involvement. The median household income is approximately \$46,000, indicating a middle-class community. It is a mid-sized school serving over 600 students in grades kindergarten through five. The primary ethnic group, Caucasian, makes up a total of 89% of the school population. Hispanic, African American and Asian students make up the remaining 11% of the population. This school falls into the medium to low range for participation in the nation's free or reduced-price lunch program with 20% of students eligible to receive free or reduced-price lunch. All students are English proficient. The student/teacher ratio is approximately 21 to 1.

This school met AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2009-10 school year was 83%, 40% higher than the statewide results. The percentage of 5th grade students testing at standard in mathematics was 89%, 29% higher than the statewide results. Likewise, the percentage of 3rd grade students testing at standard in reading was 89%, 29% higher than the statewide results. The percent of 5th grade students testing at standard in reading was 96%, 31% higher than the statewide results.

Eight teachers participated in the SuccessMaker study. There were four 3rd grade teachers and four 5th grade teachers. Initial training for the teachers was held on 9/1/10 and there was a follow-up training on 11/18/10. Students completed baseline testing the last week of August and

were tested again the first week of May. Students' last week using SuccessMaker was the last week of April.

Four teachers reported using the district adopted reading program with supplements, while three teachers said they use other materials with some use of the district program and one teacher strictly adheres to the district program. One teacher was new to the grade (i.e., moved from 1st to 3rd) and one went from being a 3rd grade student teacher to a 5th grade teacher in the current year. Six teachers used the district program two or more school years. All of the teachers prefer a balanced literacy approach for reading instruction. Five teachers reported using a combination of basal readers and trade books. One teacher preferred using just trade books, one teacher preferred using just basal readers, and one teacher preferred using just novels. All but one teacher reported having additional assistance in the classroom. Three teachers reported using instructional websites and educational computer games at least once per week as part of their literacy instruction.

The school has a dedicated computer lab with thirty computer stations arranged in two long rows facing the each other. The 3rd grade teachers took the students to the lab twice a week and each session was 30 minutes each day. The 5th grade teachers took the students to the lab twice a week and each session was 30-45 minutes.

The median 3rd grade initial SuccessMaker reading placement level was 3.25 and the final course level was 4.43. The median student used the program approximately 26 hours and had a total of 56 sessions. They completed 11 exercises every ten minutes with a success rate of 85%. The median total skills assessed was 38 with the percent mastered at 91%. The median 5th grade students' initial placement level was 6.00 and their final course level was 6.73. The median student used the program approximately 28 hours and had a total of 70 sessions. They completed a little over 6 exercises per ten minutes with a success rate of 75%. The median total skills assessed were 30 with 71% percent mastered.

Arizona District Two

In the 2009-10 school year, the district served a community of approximately 18,000. The median household income is approximately \$72,000, indicating an upper-middle class community. This Title 1 school resides in a suburb and despite the income statistic, teachers reported that these students come from lower middle class families. It is a large school serving approximately 900 students in grades kindergarten through eight, though only 7th grade students from this school participated in the study. The primary ethnic group, Hispanic, makes up a total of 48% of the school population. Caucasian students make up the next largest proportion at 38%. African American and Asian students make up the remaining 14% of the student population.

This school falls into the medium range for participation in the nation's free or reduced-price lunch program with 42% of students eligible to receive free or reduced-price lunch. Approximately 15% of the students are designated as not English proficient. The student/teacher ratio is approximately 23 to 1. This school did meet AYP in the 2009-10 school year. The percentage of 7th grade students testing at standard in mathematics in the 2009-10 school year was 63%, 29% higher than the statewide results. The percentage of 7th grade students testing at standard in reading was 81%, 14% higher than the statewide results.

One 7th grade teacher, with three sections, participated in the SuccessMaker study. Initial training for this teacher was held on 9/16/10 and there was a follow-up training on 12/10/10. The students completed baseline testing the first week of September and were tested again the third week of May. Students' last week using SuccessMaker was the third week of May. The participating teacher reported that she primarily uses the district adopted program with some supplementation and has followed the same reading curriculum for two years. This teacher uses a novels based approach for reading instruction and prefers using just novels. This teacher had a student intern at the beginning to the year to assist in the classroom. She conducts her reading lessons using whole group instruction approximately 80% of the time.

The school has a dedicated computer lab. Thirty computer stations (i.e., 40 when all are working) are arranged in four long rows with an aisle down the middle. The students go to the lab two to four days a week for 30 minutes each day. The median SuccessMaker reading placement level was 6.00 and the final course level was 6.75. The median student used the program approximately 23 hours and had a total of 66 sessions. They completed 6 exercises every ten minutes with a success rate of 74%. The median total skills assessed was 22 with the percent mastered at 66%.

California District

The participating California school is located in an affluent community with a very high degree of parental support and involvement. Teachers have indicated this also puts a lot of pressure on them to succeed. Students are high achieving and come from higher socio-economic backgrounds.

In 2009, the school district served a community of approximately 12,800. The median household income is approximately \$106,000, indicating an upper class community. This elementary school is mid-sized, serving a little over 500 students in grades one through five. Caucasian students make up 41% of the school population. Asian students make up the next largest proportion at 35%. Thirteen percent of the students are multi-racial. Hispanic, African American, Filipino and Pacific Islander students make up the other 11%. This school falls into the low range for participation in the nation's free or reduced-price lunch program with 1% of students eligible to receive free or reduced-price lunch. Approximately 4% of the students are designated as not English proficient. The student/teacher ratio is approximately 21 to 1.

This school met AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2009-10 school year was 88%, 18% higher than the statewide results. The percentage of 5th grade students testing at standard in mathematics was 88%, 15% higher than the statewide results. The percentage of 3rd grade students testing at standard in reading was 76%, 4% lower than the statewide results. The percent of 5th grade students testing at standard in reading was 91%, 11% higher than the statewide results.

Seven teachers participated in the SuccessMaker study, three 3rd grade teachers and four 5th grade teachers. Initial training for the teachers was held on 8/20/10 and follow-up training was held on 12/8/10. Some students completed baseline testing the last week of August, while some completed it the first week of September. Some students were tested again the last week of May and some were tested again the first week of June. Students' last week using SuccessMaker was the last week of May.

Five teachers reported that they primarily use other materials with some use of the district adopted program, while the other two teachers use a curriculum they created by themselves. The teachers have been following the same reading curriculum for three school years. Six teachers prefer a balanced literacy approach and one teacher uses a novel-based approach. Two teachers prefer using just novels for their reading instruction. All of the teachers reported having additional assistance in the classroom. Two teachers reported use of instructional websites and educational computer games at least once per week as part of their literacy instruction.

The California school has a 25 station computer lab located adjacent to the library. The stations are arranged around the perimeter of the room. There are also 6 laptops on a round table in the library. The students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The median 3rd grade students' SuccessMaker initial reading level was 2.75 and their final course level was 4.43. The median student used the program approximately 22 hours and had a total of 48 sessions. They completed 12 exercises every ten minutes with a success rate of 86%. The median skills assessed was 37 with the percent mastered at 93%. The median 5th grade initial placement level was 6.00 and the final course level was 6.73. The median student used the program approximately 22 hours and had a total of 49 sessions. They completed approximately 9 exercises per ten minutes with a success rate of 80%. The median total skills assessed was 33 with 82% mastered.

Indiana District

In 2009, the school district served a community of approximately 11,000. The median household income is approximately \$40,000, indicating a middle class community. The participating Indiana school is located in a small town. It is a mid-sized school serving almost 600 students in grades kindergarten through six. The school has one primary ethnic group, Caucasian, making up a total of 96% of the school population. This school falls into the medium range for participation in the nation's free or reduced-price lunch program with 37% of students eligible to receive free or reduced-price lunch. The student/teacher ratio is approximately 19 to 1.

The elementary school did not meet AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2009-10 school year was 70%, 7% lower than the statewide results. The percentage of 5th grade students testing at standard in mathematics was 86%, 4% higher than the statewide results. Likewise, the percentage of 3rd grade students testing at standard in reading was 66%, 15% lower than the statewide results. The percent of 5th grade students testing at standard in reading was 78%, 5% higher than the statewide results.

A total of five teachers participated in the study from the Indiana school, four at 3rd grade and one at 5th. The 5th grade teacher had two sections. Those teachers randomly assigned to use the SuccessMaker Reading program were trained 9/29/10. These teachers also received follow-up training on 11/22/10. The students completed baseline testing the last week of August and tested again the second week of May. Students' last week using SuccessMaker was the third week of May.

The 3rd grade teachers at the Indiana school use the district adopted program with slight supplementation. The 5th grade teacher uses a teacher created curriculum. Most teachers at this school have followed this curriculum for more than 3 years with 1 teacher having moved from teaching kindergarten to 3rd grade. Two teachers prefer a balanced literacy approach, two

teachers prefer a whole language approach, and one teacher uses a novel-based approach. Four teachers use a combination of basal readers and trade books for their reading instruction, while one teacher uses just novels. All of the teachers have additional assistance in the classroom. All but one of the teachers use instructional websites and educational computer games at least once per week as part of their literacy instruction. All of the teachers use their interactive white boards regularly.

This school has a dedicated computer lab. The lab has four hexagon shaped tables, with six computers on each table plus one row of six computers in the back of the room. The 3rd grade students use SuccessMaker in the computer lab three days a week for 30 minutes each day. The 5th grade students use the program in the computer lab twice a week for 30 minutes each day.

The median 3rd grade initial SuccessMaker reading level was 3.38 and the final course level was 5.07. The median student used the program approximately 28 hours and had a total of 61 sessions. They completed 12 exercises every ten minutes with a success rate of 84%. The median total skills assessed was 46 with 90% mastered. The median 5th grade initial placement level was 5.00 and the final course level was 5.75. The median student used the program approximately 13 hours and had a total of 29 sessions. They completed approximately 8 exercises per ten minutes with a success rate of 75%. The median total skills assessed was 14 with a percent mastery of 69%.

Kansas District

There are two private schools from the same diocese in Kansas. The first school maintains high spiritual and academic standards. The second school is more diverse. Both schools still administer state achievement assessment even though they are private.

The first school in Kansas is located in a suburb. In 2009, the school district served a community of approximately 3,800. The median household income is approximately \$92,000, indicating an upper class community. It is a mid-sized school serving approximately 400 students in grades pre-kindergarten through eight. The school has one primary ethnic group, Caucasian, making up a total of 90% of the school population. The student/teacher ratio is approximately 17 to 1.

The school met AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2007-08 school year was 86%, 60% higher than the statewide results. The percentage of 5th grade students testing at standard in mathematics was 92%, 65% higher than the statewide results. The percentage of 7th grade students testing at standard in mathematics was 96%, 69% higher than the statewide results. The percentage of 3rd grade students testing at standard in reading was 64%, 38% higher than the statewide results. The percent of 5th grade students testing at standard in reading was 89%, 64% higher than the statewide results. The percent of 7th grade students testing at standard in reading was 92%, 69% higher than the statewide results.

A total of five teachers from the first school participated in the SuccessMaker study. There were two from 3rd grade, two from 5th grade, and one from 7th grade with two sections. Initial training for the teachers was held on 9/2/10 and follow-up training was 12/2/10. Baseline testing was completed the first week in September. The students were tested again the second week of May. Students' last week using SuccessMaker was the second week of May.

Four of the teachers from the first Kansas school primarily used the district adopted program with supplementation. Four teachers have followed the district curriculum for three or more school years. Four teachers reported using a balanced literacy approach to their reading instruction, while the other teacher uses a whole language approach. All of the teachers reported having additional assistance in the classroom. One teacher uses instructional websites and educational computer games at least once per week as part of their literacy instruction.

This school has a dedicated computer lab with 26 computer stations arranged around the perimeter of the room and the teacher's computer in the center. The students use SuccessMaker in the computer lab 2-3 days a week for 20-30 minutes each day. The median 3rd grade SuccessMaker initial reading placement level was 3.50 and the final course level was 4.78. The median student used the program approximately 23 hours and had a total of 84 sessions. They completed 11 exercises every ten minutes with a success rate of 85%. The median total skills assessed was 37 with the percent mastered at 89%.

The median 5th grade students' SuccessMaker Reading initial placement level was 6.00 and their final course level was 6.91. The median student used the program approximately 25 hours and had a total of 87 sessions. They completed approximately 6.5 exercises per ten minutes with a success rate of 75%. The median total skills assessed was 28 with 71% mastered. The median 7th grade initial reading placement level was 7.5 and their final course level was 7.76. The median student used the program approximately 12 hours and had a total of 45 sessions. They completed a little over 5 exercises every 10 minutes with a success rate of 80%. The median total skills assessed was 12 with 78% mastered.

The second school in Kansas is located in a large suburb. In 2009, the school district served a community of approximately 17,500. The median household income was approximately \$65,500, indicating an upper-middle class community. It is a small school serving approximately 370 students in grades pre-kindergarten through eight. The school has one primary ethnic group, Caucasian, making up a total of 76% of the school population. Hispanic students make up the second largest portion of the school population at 23%. The student/teacher ratio is approximately 14 to 1.

The school met AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2007-08 school year was 100%, 74% higher than the statewide results. The percentage of 5th grade students testing at standard in mathematics was 93%, 66% higher than the statewide results. The percentage of 7th grade students testing at standard in mathematics was 78%, 51% higher than the statewide results. Likewise, the percentage of 3rd grade students testing at standard in reading was 100%, 74% higher than the statewide results. The percent of 5th grade students testing at standard in reading was 93%, 68% higher than the statewide results. The percent of 7th grade students testing at standard in reading was 92%, 69% higher than the statewide results.

Four teachers from the second school participated in the SuccessMaker study. Two teachers were from 3rd grade, one teacher was from 5th grade, and one teacher was from 7th grade. The 5th grade teacher had one section that used the program and the 7th grade teacher had 2 sections, one comparison and one using SuccessMaker. Initial training for the teachers was held on 9/2/10 and follow-up training was on 11/12/10. Some students completed baseline testing the third week of September, while some completed it the last week in September. The students were tested again

the second week of May. The students' last week using SuccessMaker was the third week of May.

Two teachers from the second Kansas school primarily used the district adopted program with some supplementation, while the other two teachers primarily used other materials with some use of the district program. Three teachers have followed this curriculum for 1 year and the other has followed it for 7 years. All of the teachers used a balanced literacy approach to their reading instruction. Two teachers prefer using just basal readers and one teacher prefers using just novels. Two of the four teachers reported having additional assistance in the classroom. Two teachers used instructional websites and educational computer games at least once per week as part of their literacy instruction. They also frequently use their interactive white boards.

This school has a dedicated computer lab with 24 computer stations arranged in three long rows. The students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The median 3rd grade SuccessMaker reading initial placement level was 2.75 and the final course level was 3.60. The median student used the program approximately 13 hours and had a total of 45 sessions. They completed approximately 11 exercises every ten minutes with a success rate of 85%. The median total skills assessed was 20 with the percent mastered at 89%.

The median 5th grade students' SuccessMaker Reading initial placement level was 6.00 and their final course level was 6.55. The median student used the program approximately 20 hours and had a total of 61 sessions. They completed approximately 6 exercises per ten minutes with a success rate of 77%. The median total skills assessed was 20 with 76% mastered. The median 7th grade reading placement level was 7.00 and the final course level was 7.46. The median student used the program approximately 16 hours and had a total of 45 sessions. They completed approximately 6 exercises every 10 minutes with a success rate of 77%. The median total skills assessed was 14 with the percent mastered at 75%.

Michigan District

Two schools in Michigan participated in the study, one elementary school and one middle school. Most of the students come from low income, single parent families and many of the students live outside of the district. There are also attendance problems at this school.

In 2009, the district served a population of approximately 23,500. The median household income was approximately \$39,000, indicating a middle class community. The elementary school is a mid-sized school serving approximately 520 students in grades kindergarten through five. African American students make up a total of 54% of the school population. Caucasian students make up the next largest portion of the population at 32%. American Indian/Alaskan Native, multi-racial, Hispanic, and a small group of Asian students make up the rest of the population. This school falls into the medium to high range for participation in the nation's free or reduced-price lunch program with 64% of students eligible to receive free or reduced-price lunch. The student/teacher ratio is approximately 22 to 1.

The elementary school did meet AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2010-11 school year was 99%, 4% higher than the statewide results. The percentage of 5th grade students testing at standard in mathematics was 82%, 2% higher than the statewide results. The percentage of 3rd grade students testing at

standard in reading was 83%, 4% lower than the statewide results. Lastly, the percent of 5th grade students testing at standard in reading was 78%, 7% lower than the statewide results.

Five teachers from the elementary school participated in study, three 3rd grade teachers and two 5th grade teachers. Initial training for the teachers was held on 8/30/10 and follow-up training was on 11/1/10. The students completed baseline testing the last week of September and were tested again the last week of May. Students' last week using SuccessMaker was the last week of May.

Four of the five teachers primarily use the district adopted curriculum with some supplementation, while the other teacher strictly adheres to the district curriculum. The teachers have been using the district curriculum for 3 or more school years. All of the teachers used a balanced literacy approach to their reading instruction. All of the teachers had additional assistance in the classroom. One teacher uses instructional websites and educational games at least once per week as part of their literacy instruction. Two teachers make regular use of their interactive white boards.

This school has a dedicated computer lab with 31 terminals arranged in three rows on long desks. The students use SuccessMaker in the computer lab four days a week for 30 minutes each day. The median 3rd grade SuccessMaker Reading initial placement level was 2.75 and the final course level was 4.61. The median student used the program approximately 34 hours and had a total of 102 sessions. They completed approximately 11 exercises every ten minutes with a success rate of 78%. The median total skills assessed was 43 with 76% mastered. The median 5th grade initial placement level was 5.00 and the final course level was 6.36. The median student used the program approximately 33 hours and had a total of 99 sessions. They completed approximately 8 exercises per ten minutes with a success rate of 78%. The median total skills assessed was 36 with a percent mastered of 74%.

The middle school resides in a large suburb, which in 2009 had a population of approximately 34,400. The median household income is approximately \$36,200, indicating a middle class community. The middle school is a large school serving approximately 1200 students in grades six through eight. Caucasian students make up a total of 51% of the school population. African American students make up the next largest portion of the school population at 38%. The remaining 11% of the school population is made up of American Indian/Alaskan Native, multi-racial, Hispanic and Asian students. This school falls into the medium to high range for participation in the nation's free or reduced-price lunch program with 56% of students eligible to receive free or reduced-price lunch. The student/teacher ratio is approximately 24 to 1.

The middle school met AYP in the 2009-10 school year. The percentage of 7th grade students testing at standard in mathematics in the 2010-11 school year was 85%, which matches the statewide results. Likewise, the percentage of 7th grade students testing at a standard in reading was 78%, 1% lower than the statewide results. This district administered state assessments in October and thus had state achievement data available early in the study year. Three 7th grade teachers participated in the SuccessMaker study, all with multiple sections. Initial training for the teachers was held on 8/30/10 and follow-up training was on 11/1/10. The students completed baseline testing the last week of September and were tested again the third week of May. Students' last week using SuccessMaker was the last week of May.

Two of the three teachers primarily use the district adopted curriculum with some supplementation, and the other teacher uses their own curriculum. The teachers that use the district curriculum have been using it for two and seven years, while the other teacher has been using their own curriculum for only 1 year as they are new to the grade. Two of the teachers used a balanced literacy approach to their reading instruction, while one teacher used a whole language approach. Two teachers preferred to use just novels. Two teachers reported having additional assistance in the classroom to work with special education and RTI students.

This school has a dedicated computer lab with three rows of long desks in the middle of the room plus two sets of long desks along two of the walls that hold a total of 31 computer stations. The students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The median 7th grade students' SuccessMaker Reading initial placement level was 6.00 and their final course level was 6.71. The median student used the program approximately 18 hours and had a total of 43 sessions. They completed approximately 5.5 exercises every ten minutes with a success rate of 72%. The median total skills assessed was 16.50 with the percent mastered at 58%.

Missouri District

One private Catholic school participated in the study from a diocese in Missouri. The school resides in a suburb and the students come from higher class families. There is a high degree of parent involvement at this school.

In 2009 the school district served a community of 19,500. The median household income is approximately \$68,000, indicating an upper-middle class community. The school is mid-sized serving approximately 460 students in grades kindergarten through eight. The school's primary ethnic group is Caucasian, 90% of the school population. African American, Hispanic, and Asian students make up the remaining 10% of the student population. The student/teacher ratio is approximately 17 to 1.

Eight teachers from the school participated in the SuccessMaker study, three from 3rd grade, three from 5th grade and two from 7th grade. Initial training for the teachers was held on 9/3/10 and follow-up training was on 11/29/10. The students completed baseline testing the third week of September and were tested again the first or second week in May. Students' last week using SuccessMaker was the second week in May.

Seven of the eight teachers primarily use the district adopted curriculum with some supplementation and have been following the curriculum for 3 or more school years. The other teacher uses her own curriculum and has been following this curriculum for five years. Seven teachers use a balanced literacy approach to their reading instruction, while one teacher uses a whole language approach. Two teachers, one 5th and one 7th grade, prefer using just novels. Five teachers reported having additional assistance in the classroom. Three teachers use instructional websites and educational computer games more than once a week. All of the teachers frequently use their interactive white boards.

This school has a dedicated computer lab with 24 stations arranged around the walls of the room. The 3rd grade students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The 5th and 7th grade students use SuccessMaker three times a week for 20-30 minutes each day. The median 3rd grade students' SuccessMaker Reading initial placement level was 3.25 and

their final course level was 4.38. The median student used the program approximately 18 hours and had a total of 59 sessions. They completed approximately 13 exercises every ten minutes with a success rate of 83%. The median total skills assessed was 32 with the percent mastered at 88%.

The median 5th grade initial placement level was 6.00 and the final course level was 6.80. The median student used the program approximately 23 hours and had a total of 71.5 sessions. They completed approximately 9 exercises per ten minutes with a success rate of 79%. The median total skills assessed was 34.5 with the percent mastered at 81%. The median 7th grade initial reading placement level was 7.00 and the final course level was 7.84. The median student used the program approximately 16 hours and had a total of 46 sessions. They completed approximately 7 exercises every 10 minutes with a success rate of 75%. The median total skills assessed was 21 with 75% mastered.

Texas District

Two elementary schools, serving grades pre-kindergarten through 4th, and one middle school, serving grades 5th and 6th, participated in the study from the Texas district. The first elementary school is a low income school with a highly diverse population. The second elementary school is a Title 1 school in a low socio-economic area. The middle school is also a Title 1 school in a low socio-economic area.

The first elementary school resides in a large city. In 2009, the school district served a community of 37,800. The median household income is approximately \$63,000, indicating an upper-middle class community. The school is mid-sized serving approximately 675 students in grades prekindergarten through four. Hispanic students make up 50% of the school population. African American students make up 24% of the school population. Caucasian students make up 18% of the school population. Asian student make up the remaining 8% of the population. Approximately 19% of the students are designated as not English proficient. This school falls into the medium to high range for participation in the nation's free or reduced-price lunch program with 72% of students eligible to receive free or reduced-price lunch. The student/teacher ratio is approximately 19 to 1.

The first elementary school met AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2010-11 school year was 91%, 5% higher than the statewide results. Likewise, the percentage of 3rd grade students testing at standard in reading was 95%, 6% higher than the statewide results. This district administered state assessments in October and thus had state achievement data available early in the study year.

Six 3rd grade teachers from the first elementary school participated in the SuccessMaker study. The initial training was held on 8/9/10 and the follow-up training was on 11/1/10. The students completed baseline testing the first week of September and were tested again the third week of May. Students' last week using SuccessMaker was the last week in May.

Five of the six teachers use the district adopted curriculum with supplementation, while the other teacher primarily uses outside materials. The teachers have been using their current curriculum for more than one school year with three teachers using the current program three or more school years. Three teachers use a balanced literacy approach to their reading instruction. Two teachers use a whole language approach and one teacher uses a novels based approach. Two teachers

prefer to use just novels in their reading instruction. Three teachers reported having additional assistance in the classroom. One teacher uses instructional websites and educational computer games at least once per week as part of their literacy instruction. All of the teachers use their interactive white boards.

This school has a dedicated computer lab. There are four long rows of tables with 6 workstations per row. The students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The students completed baseline testing the first week of September and were tested again the third week of May. Students' last week using SuccessMaker was the last week in May. The median 3rd grade students SuccessMaker Reading initial placement level was 2.75 and their final course level was 4.41. The median student used the program approximately 27 hours and had a total of 56 sessions. They completed approximately 11 exercises every ten minutes with a success rate of 83%. The median total skills assessed was 37 with a percent mastered of 84%.

The second elementary school resides in a large suburb. In 2009, the school district served a community of 46,200. The median household income is approximately \$31,000, indicating a middle class community. The school is mid-sized serving approximately 750 students in grades pre-kindergarten through four. The primary ethnic group, Hispanic, makes up 95% of the school population. Caucasian, African American, Asian, and Native American students make up the remaining population. Approximately 54% of the students are designated as not English proficient. This school falls into the high range for participation in the nation's free or reduced-price lunch program with 95% of students eligible to receive free or reduced-price lunch. The student/teacher ratio is approximately 17 to 1.

This elementary school met AYP in the 2009-10 school year. The percentage of 3rd grade students testing at standard in mathematics in the 2010-11 school year was 80%, 6% lower than the statewide results. The percentage of 3rd grade students testing at standard in reading was 91%, 2% higher than the statewide results. Three 3rd grade teachers participated in the SuccessMaker study. One teacher left after the first half of the school year. These students remained in the study and continued to use the SuccessMaker program with their new teacher. The initial training was held on 8/9/10 and the follow-up training was on 11/1/10. The students completed baseline testing the first week of September and were tested again the first and second week of May. Students' last week using SuccessMaker was the last week of April.

Teachers primarily used the district adopted curriculum with some or heavy supplementation and have been using the curriculum for one or two school years. One teacher uses a balanced literacy approach, while another uses a whole language approach. Only one teacher reported having additional assistance in the classroom which freed them up to work with small groups of students. One teacher incorporates instructional websites and educational computer games into their literacy instruction at least once per week and all teachers use their interactive white boards frequently.

This school has a dedicated computer lab. There are seven rows with four computer stations in each row. The students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The median 3rd grade initial SuccessMaker Reading placement level was 2.75 and the final course level was 4.46. The median student used the program approximately 33 hours and had a total of 80 sessions. They completed approximately 10 exercises every ten minutes with a success rate of 77%. The median total skills assessed was 39.5 with 76% mastered.

The third school, a middle school, resides in a large suburb. In 2009, the school district served a community of approximately 26,800. The median household income is approximately \$41,000, indicating a middle class community. The school is large serving approximately 850 students in grades five and six. The primary ethnic group, Caucasian, makes up 85% of the school population. Hispanic students make up 7% of the school population. African American, Asian, and Native American students make up the remaining population. This school falls into the high range for participation in the nation's free or reduced-price lunch program with 88% of students eligible to receive free or reduced-price lunch. The student/teacher ratio is approximately 21 to 1.

Three 5th grade teachers from the middle school participated in the SuccessMaker study. Each teacher had four sections. The initial training was held on 8/9/10 and the follow-up training was on 11/1/10. The students completed baseline testing the first week of September and were tested again the third and last week of May. Students' last week using SuccessMaker was the third and last week in May. The percentage of 5th grade students testing at standard in mathematics in the 2010-11 school year was 87%, 39% higher than the statewide results. Likewise, the percentage of 5th grade students testing at a standard in reading was 87%, 41% higher than the statewide results.

All of the teachers primarily use the district adopted curriculum with some supplementation. The teachers have been using the curriculum for a year or more. All of the teachers use a balanced literacy approach to their reading instruction. Two teachers use a combination of basal readers and trade books, while the third teacher prefers using just novels. Only two teachers reported having additional assistance in the classroom. One teacher conducts their reading lessons using whole group instruction 20% of the time, while the other two teachers use whole group instruction 50% and 70% of the time. Two teachers incorporate instructional websites and educational computer games into their literacy instruction at least once per week.

This school has a dedicated computer lab. There are four circular pods of workstations, with 6 computers per pod. The students use SuccessMaker in the computer lab twice a week for 30 minutes each day. The median 5th grade students' SuccessMaker Reading initial placement level was 5.00 and their final course level was 5.87. The median student used the program approximately 17 hours and had a total of 36 sessions. They completed approximately 8 exercises every ten minutes with a success rate of 75%. The median total skills assessed was 18 with the percent mastered at 67%.

Participants

The final diverse sample consisted of 1,711 3rd, 5th, and 7th grade students from eight school districts in seven states located in different regions of the US.

The research team recruited eighty diverse 3rd, 5th and 7th grade classrooms from eight urban and suburban school districts in seven different states (i.e., AZ, CA, IN, KS, MI, MO, TX). The final study sample consisted of 618 3rd grade (i.e., SuccessMaker = 352, comparison = 266), 641 5th grade (i.e., SuccessMaker = 342, comparison = 299) and 452 7th grade (i.e., SuccessMaker =

254, comparison = 198) students. Overall, there was little attrition of the study sample as a high percentage of those students baseline tested remained active participants in the study and were available for end-of-year testing (i.e., 3rd SMR = 93%, CP = 95%; 5th SMR = 90%, CP = 91%; 7th SMR = 88%, CP = 81%;).

There was little attrition of the study sample as a high percentage of those students baseline tested remained active participants in the study and were available for end-of-year testing

It can be seen from Table 3 the study sites show considerable variation in reading achievement and ethnicity, as well as percent of students eligible for reduced priced lunch. All three grades had a high percentage of Hispanic and African-American students (i.e., 3rd Caucasian = 62%, 5th Caucasian = 49%, 7th Caucasian = 51%). All three grades also had a substantial number of low SES (i.e., 3rd 36%, 5th 45%, 7th 53%) and lower achieving (i.e., 3rd 24%, 5th 20%, 7th 32%) students.

The SuccessMaker sample had more of the lower achieving students and more of the at-risk students than did the comparison sample.

Table 3 SuccessMaker Reading Study Sample Demographic Information									
Group	Grade	¹ Student Count	² Percent One Grade Equivalent Below	Percent Not English Proficient	Percent Reduced Lunch	Percent Caucasian	Percent Hispanic/ Native American	Percent African American/ Caribbean	Other Ethnicity or No Information
Arizona District 1									
SM	3	55 (97%)	15%	0%	27%	94%	4%	2%	0%
Comparison		49 (91%)	18%	0%	16%	92%	4%	2%	2%
SM	5	48 (84%)	6%	0%	35%	90%	4%	0%	6%
Comparison		52 (88%)	8%	0%	35%	87%	12%	0%	1%
Arizona District 2									
SM	7	58 (94%)	38%	3%	64%	40%	43%	14%	3%
Comparison		31 (91%)	61%	19%	65%	29%	55%	13%	3%
California District									
SM	3	48 (96%)	10%	4%	0%	50%	4%	2%	44%
Comparison		25 (100%)	0%	0%	0%	40%	8%	0%	52%
SM	5	54 (93%)	2%	0%	2%	46%	6%	0%	48%
Comparison		55 (93%)	9%	0%	5%	42%	7%	5%	46%
Indiana District									
SM	3	36 (100%)	19%	0%	47%	100%	0%	0%	0%
Comparison		41 (100%)	27%	0%	24%	98%	0%	0%	2%

SM Comparison	5	21 (96%) 17 (85%)	38% 29%	0% 0%	43% 47%	90% 100%	0% 0%	0% 0%	10% 0%
Kansas District									
SM Comparison	3	36 (97%) 37 (97%)	8% 16%	0% 0%	14% 14%	81% 89%	8% 5%	3% 0%	8% 6%
SM Comparison	5	45 (100%) 24 (96%)	11% 8%	0% 0%	11% 0%	87% 96%	7% 0%	0% 0%	0% 0%
SM Comparison	7	34 (100%) 34 (100%)	15% 18%	0% 0%	15% 21%	85% 88%	12% 9%	3% 0%	0% 3%
Michigan									
SM Comparison	3	47 (89%) 25 (93%)	62% 56%	2% 0%	74% 60%	40% 48%	2% 0%	43% 44%	15% 8%
SM Comparison	5	30 (100%) 28 (93%)	43% 46%	0% 7%	87% 64%	40% 25%	0% 0%	50% 54%	10% 21%
SM Comparison	7	140 (83%) 110 (73%)	33% 41%	1% 0%	67% 69%	44% 33%	1% 2%	43% 51%	12% 14%
Missouri District									
SM Comparison	3	41 (95%) 20 (95%)	12% 10%	0% 0%	0% 0%	85% 100%	5% 0%	2% 0%	8% 0%
SM Comparison	5	36 (92%) 18 (90%)	8% 0%	0% 0%	0% 0%	91% 89%	3% 0%	6% 0%	0% 11%
SM Comparison	7	22 (88%) 23 (92%)	5% 0%	0% 0%	0% 0%	95% 100%	0% 0%	0% 0%	5% 0%
Texas District									
SM Comparison	3	89 (87%) 69 (92%)	35% 23%	4% 14%	69% 78%	17% 16%	67% 68%	13% 9%	3% 7%
SM Comparison	5	108 (83%) 105 (91%)	41% 23%	26% 35%	87% 83%	7% 5%	88% 89%	4% 5%	1% 1%
1. Percents within parentheses next to student counts indicate the percent of students tested at baseline that were also tested at the end of the school year. 2. Study sample was broken out by baseline GMADE national norm cutoff score for 1.0 grade equivalent below grade and month at the time of testing.									

The study groups at 3rd and 7th did not statistically vary in their percent of English proficient, African American, Hispanic, lower achieving, nor low SES students. The 5th grade SuccessMaker group did, however, have statistically significantly more low-SES and English proficient students. In all three grades the SuccessMaker sample had more of the lower achieving students and more of the at-risk students than did the comparison sample. The notable exception is in English proficiency, as the SuccessMaker sample had more English proficient students. It should be noted however, that non-proficient students only make up 2.7%, 10.5%, and 2.2% of the 3rd, 5th and 7th grade samples respectively.

3 rd Grade	Successmaker	comparison
low achieving	60%	40%
not English proficient	41%	59%
free/reduced lunch	59%	41%
Hispanic	57%	43%
African American	67%	33%

5 th Grade	Successmaker	comparison
low achieving	59%	41%
not English proficient ^S	42%	58%
free/reduced lunch ^S	53%	47%
Hispanic	50%	50%
African American	48%	52%

^S Indicates a statistically significant difference.

7 th Grade	Successmaker	comparison
low achieving	51%	49%
not English proficient	40%	60%
free/reduced lunch	57%	43%
Hispanic	58%	42%
African American	54%	47%

Data Analysis Procedures

Statistical analyses were performed on students’ gain scores (i.e., end-of-year raw score minus beginning-of-year raw score) for the GRADE, AIMSweb and Reading Academic Attitude Survey at each grade level. Results compared the SuccessMaker users to the comparison group. Results were broken out and analyzed for separate levels of three key demographic variables (i.e., ethnicity, gender, meal status). Students’ English language learner (i.e., ELL) status was also collected but results were not broken out and reported by ELL status because there were very few students designated as ELL (i.e., 5%).

Results were also calculated for a group of lower achieving students at each grade level. These students scored at baseline one grade equivalent below their current grade level. Further, the performance for the comparison group was compared to four blocks of program usage (i.e.,

block 1 = 1 to 9 hours, block 2 = 10 to 19 hours, block 3 = 20 to 29 hours, block 4 = 30 or more hours).

Statistical analyses were performed on students' GRADE total and subtest, AIMSweb, as well as, academic attitude survey scores for the three grade levels. Results were also broken out and analyzed for key subpopulations of students.

Rigorous research design dictates that all characteristics of the study participants and their environmental influences that may impact the results, in addition to the curriculum, must be equated across study groups. Random assignment can only probabilistically equate study groups prior to the start of the study. The maintenance of a controlled and consistent environment for the study participants helps to ensure that differences found in the study groups on outcomes of interest may more confidently be attributed to the study conditions assigned to these groups and not other confounding factors.

An ordinary least squares fixed effects model was employed to statistically test model group mean gain score differences. While students were the unit of analysis, the school districts were the independent units. The hierarchical nature of the data (i.e., students nested within classrooms, classrooms nested within schools, schools nested within districts) has the effect of reducing the amount of independent information available in the sample, therefore decreasing the precision of estimates and the power of hypothesis tests to find these estimates statistically significant.⁹ A naïve covariance structure,¹⁰ within a robust empirical standard error formulation was used to calculate confidence intervals for estimated effects. This procedure results in group mean differences that are unbiased and statistical hypothesis tests that are consistent^{11,12} despite the nested nature of the data.

All statistical significance tests are two-tailed with a Type I error rate of 0.05. Statistically significant estimates are ones in which the probability of sampling scores that result in a group mean difference that much greater than zero when it is in fact null, is $p = 0.05$ or 1 in 20 samples. Significance implies that the samples are likely drawn from two separate populations or that the group averages are unlikely to be the same in the population. Coupled with the study design, we may then hold these statistically significant differences as evidence for one group outperforming the other.

Standardized effect size estimates (i.e., effect size = group mean gain score difference / comparison group sample standard deviation) along with a percentile rank based effect size measure are computed for statistically significant group mean gain score differences.¹³ The latter effect size measure indicates the percentile rank for the median SuccessMaker gain score in relation to the comparison group's distribution.

⁹ Donnar, A. & Klar, N. (2000) *Design and analysis of cluster randomization trials in health research*. Arnold Publishers, London.

¹⁰ Initially a compound symmetric structure was assumed for the error variances but the extra parameter was not statistically significant for any of the statistical models.

¹¹ Liang, N. M. & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika*, 73, pp. 13-22.

¹² SAS's Mixed procedure was used to analyze the data, see SAS Institute Inc. (2008) Online documentation 9.2. A linear model was defined with all fixed effects, full degrees of freedom, using the sandwich estimator for all standard errors with districts set as the independent level of nesting, and a naïve independent working covariance structure.

¹³ Hedges, L. V. & Olkin, I. (1985). *Statistics methods for meta-analysis*. Academic Press, NY.

As many as 28 covariates were entered into the statistical models to reduce the residual variation or error about the observed effects. These covariates included baseline scores, student and teacher demographic information, as well as classroom environment indicators. The statistical models were able to find small effect sizes statistically significant (i.e., 80% power, 5% two-tailed type I error rate). The average detectable effect sizes for 3rd, 5th, and 7th grade were 0.11, 0.08, and 0.12 standard deviations respectively. Effect sizes as large as these are approaching practical significance.

A careful review of efficacy studies for educational materials¹⁴ indicate that the average group mean difference for studies with large samples (i.e., more than 250 students) is only 0.13 standard deviations (i.e., percentile rank = 55%). In addition, the Best Evidence Encyclopedia's review of the effects of technology use on reading achievement in K-12 classrooms found a median effect size of 0.16 standard deviations when adaptive educational technologies are compared to traditional methods.

¹⁴ Slavin, R. & Smith, D. (2009). The relationship between sample sizes and effect sizes in systematic reviews in education. *Educational Evaluation and Policy Analysis*, 31(4) pp. 500-506.

III. RESULTS

Report section III summarizes the results of data analyses, including statistical and qualitative results, and group comparisons at baseline. The first subsection demonstrates the closeness of the samples on the quantitative outcome measures at baseline. The second subsection addresses research question one, comparing achievement for the SuccessMaker group to that of the comparison group. Section two further addresses achievement for increasing levels of SuccessMaker usage. The third subsection then breaks out the SuccessMaker versus comparison group achievement results by subpopulations.

The fourth and fifth subsections address both research questions two and three. That is, do SuccessMaker students demonstrate more positive attitudes toward reading and reading instruction, and, how did teachers and students react to the program? Section five summarizes comments collected from SuccessMaker teachers during focus groups interviews.

Baseline Group Equivalence

Tables four through six present the baseline group mean differences for each measure of achievement and attitude for 3rd, 5th and 7th grade classrooms. These tables also show significance test results and effect size measures for the baseline group mean differences. Most of the achievement outcomes were not statistically significantly different between the study groups at baseline, and the effect sizes were all under 0.20 standard deviations. The 3rd and 5th grade comparison groups tended to be higher achieving at baseline while the 7th grade SuccessMaker students were higher at baseline. The comparison group, at all three grades, had higher academic attitudes at baseline with the 3rd and 7th grade samples showing statistical significance and moderate sized effects.

Table 4	Third Grade Baseline Score Study Group Comparisons						
Measure	Sample Size SMR/CP ¹	SMR Mean (SD) ²	CP Mean (SD)	Group Difference ³	Sample p-value	Effect Size ⁴	Effect Size Percent ⁵
GRADE Overall	352/267	81.07 (14.849)	82.39 (15.932)	-1.3222	0.3445	-0.08	47%
Word Reading	352/267	27.88 (2.567)	27.76 (3.212)	0.1166	0.6469	0.04	51%
Vocabulary	352/267	21.35 (6.074)	21.97 (6.036)	-0.6234	0.2635	-0.10	46%
Sentence Comprehension	352/267	15.38 (3.335)	15.58 (3.596)	-0.2064	0.6004	-0.06	48%
Passage Comprehension	352/267	16.47 (5.256)	17.07 (5.364)	-0.6090	0.0528	-0.11	45%
Words Read Correctly	351/267	93.23 (36.925)	98.46 (36.803)	-5.2525	0.0389	-0.14	44%
Reading Attitude Survey	352/267	6.96 (4.781)	8.21 (4.596)	-1.2429	0.0026	-0.27	39%
1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size 2. Mean indicates the group sample mean value and (SD) indicates the group sample standard deviation 3. Group difference = SuccessMaker Reading group mean - comparison group mean 4. Effect Size = group mean difference / comparison sample standard deviation 5. Effect Size Percent = percentile rank for the median SuccessMaker Reading score in relation to the comparison group (i.e., set to 50%)							

Table 5		Fifth Grade Baseline Score Study Group Comparisons					
Measure	Sample Size SMR/CP ¹	SMR Mean (SD) ²	CP Mean (SD)	Group Difference ³	Sample p-value	Effect Size ⁴	Effect Size Percent ⁵
GRADE Overall	342/299	50.67 (15.494)	52.84 (14.693)	-2.1699	0.1529	-0.15	44%
Vocabulary	342/299	17.72 (6.614)	18.31 (6.506)	-0.5980	0.3585	-0.09	46%
Sentence Comprehension	342/299	13.35 (4.250)	14.03 (4.042)	-0.6730	0.1809	-0.17	43%
Passage Comprehension	342/299	19.60 (6.082)	20.50 (5.838)	-0.8989	0.0319	-0.15	44%
Words Read Correctly	342/297	130.22 (37.027)	128.07 (35.597)	2.2031	0.4937	0.06	52%
Reading Attitude Survey	342/299	6.40 (6.245)	6.93 (5.779)	-0.5292	0.5370	-0.09	46%

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
 2. Mean indicates the group sample mean value and (SD) indicates the group sample standard deviation
 3. Group difference = SuccessMaker Reading group mean - comparison group mean
 4. Effect Size = group mean difference / comparison sample standard deviation
 5. Effect Size Percent = percentile rank for the median SuccessMaker Reading score in relation to the comparison group (i.e., set to 50%)

Table 6		Seventh Grade Baseline Score Study Group Comparisons					
Measure	Sample Size SMR/CP ¹	SMR Mean (SD) ²	CP Mean (SD)	Group Difference ³	Sample p-value	Effect Size ⁴	Effect Size Percent ⁵
GRADE Overall	254/199	51.50 (14.098)	50.25 (15.528)	1.2577	0.0003	0.08	53%
Vocabulary	254/199	19.31 (6.225)	19.05 (6.788)	0.2608	0.4350	0.04	52%
Sentence Comprehension	254/199	12.52 (3.841)	12.40 (4.057)	0.1188	0.5495	0.03	51%
Passage Comprehension	254/199	19.68 (5.368)	18.80 (6.054)	0.8782	<0.0001	0.15	56%
Words Read Correctly	252/196	142.99 (33.600)	143.24 (35.538)	-0.3070	0.5986	-0.01	50%
Reading Attitude Survey	254/199	5.19 (6.470)	6.28 (5.634)	-1.0913	0.0006	-0.19	42%

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
 2. Mean indicates the group sample mean value and (SD) indicates the group sample standard deviation
 3. Group difference = SuccessMaker Reading group mean - comparison group mean
 4. Effect Size = group mean difference / comparison sample standard deviation
 5. Effect Size Percent = percentile rank for the median SuccessMaker Reading score in relation to the comparison group (i.e., set to 50%)

Group Comparisons of Achievement Gains

This section will address research question one:

RQ1: Do students using the SuccessMaker reading program demonstrate a significant improvement in achievement over their non-SuccessMaker counterparts?

Classrooms of students within each grade at every school were randomly assigned to one of two study groups, those regularly using SuccessMaker Reading or a comparison group. Average program usage for 3rd, 5th, and 7th grade was 26, 22, and 18 hours across the school year.

Figures 1 through 3 present the SuccessMaker and comparison group mean gain scores on the GRADE for the three study grades. It can be seen that the angle of ascent is steeper for the blue line, representing SuccessMaker Reading, in all three graphs. The blue line represents the gain in achievement from the start of the school year (i.e., BOY) to the end-of-year (i.e., EOY). In 3rd and 5th grade, the SuccessMaker students' baseline achievement levels were lower; however their final achievement levels were superior. At 7th grade, the SuccessMaker students' baseline achievement levels were higher as a group and their gains were also larger.

Figure 1 Third Grade Reading Achievement Gains

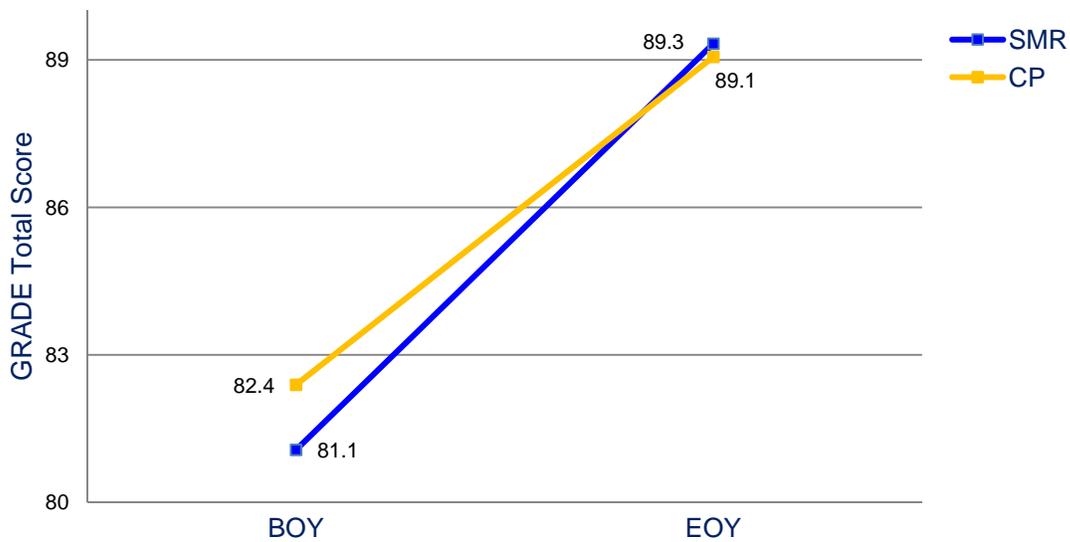


Figure 2 Fifth Grade Reading Achievement Gains

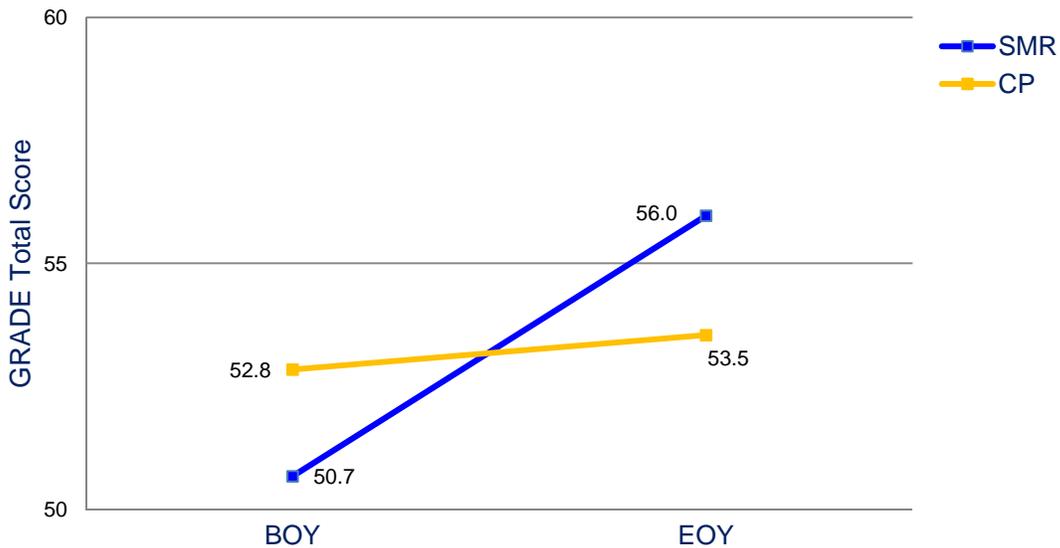
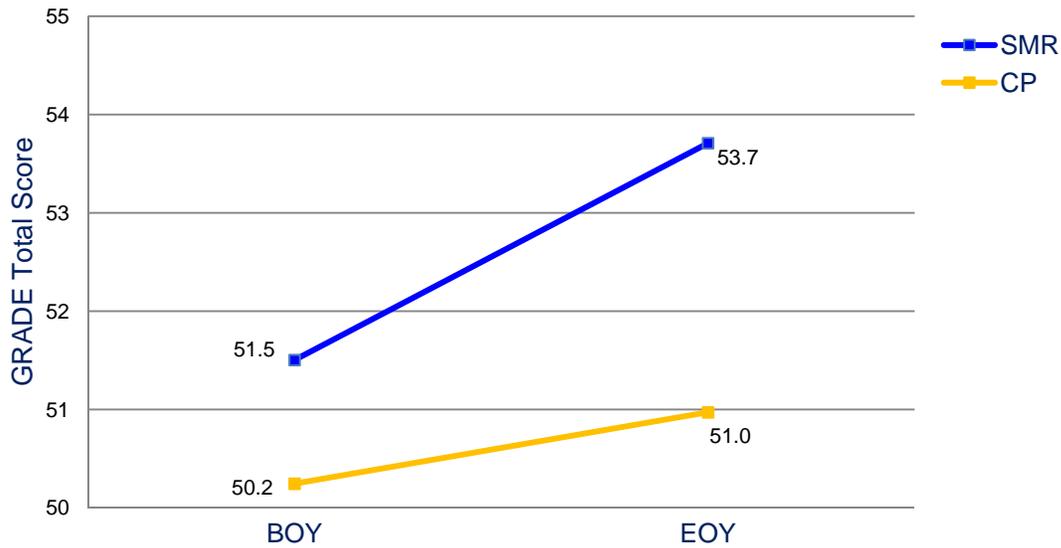


Figure 3 Seventh Grade Reading Achievement Gains



In all three grades, SuccessMaker Reading users statistically significantly outperformed the comparison group students on the GRADE.

SuccessMaker students in 3rd, 5th, and 7th grade saw large statistically significant gains on the GRADE from the beginning to the end of the school year, represented by standard deviations of 1.07, 0.90, and 0.58 for 3rd, 5th, and 7th grade respectively. In addition, SuccessMaker students in 3rd, 5th, and 7th grade statistically significantly outperformed their comparison group counterparts on the GRADE Total score. The magnitude of the difference in performance was moderate at 3rd and 7th and smaller at 5th grade.

3 rd Grade Scale	SMR/CP ¹	Effect Size ^{2,3,4}
GRADE Total	352/267	0.16 (56%)
Word Reading	352/267	-0.05 (48%)
Vocabulary	352/267	***
Sentence Comprehension	352/267	0.13 (55%)
Passage Comprehension	352/267	0.21 (58%)
Words Read Correctly	351/267	0.17 (57%)

*** Indicates group means are not statistically significantly different

- SMR/CP indicates the SuccessMaker Reading group size / comparison group size
- effect size = group mean gain score difference / comparison sample standard deviation
- The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.
- The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

5 th Grade Scale	SMR/CP ¹	Effect Size ^{2,3,4}
GRADE Total	342/299	0.06 (53%)
Vocabulary	342/299	***
Sentence Comprehension	342/299	0.10 (54%)
Passage Comprehension	342/299	0.08 (53%)
Words Read Correctly	342/297	-0.19 (42%)
*** Indicates group means are not statistically significantly different		
1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size		
2. effect size = group mean gain score difference / comparison sample standard deviation		
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.		
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).		

7 th Grade Scale	SMR/CP ¹	Effect Size ^{2,3,4}
GRADE Total	254/199	0.25 (60%)
Vocabulary	254/199	0.17 (57%)
Sentence Comprehension	254/199	0.25 (60%)
Passage Comprehension	254/199	0.09 (54%)
Words Read Correctly	252/196	***
*** Indicates group means are not statistically significantly different		
1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size		
2. effect size = group mean gain score difference / comparison sample standard deviation		
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.		
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).		

Across all grade levels, SuccessMaker Reading students also had significantly larger gains in comprehension. At 7th grade, a significant effect in favor of SuccessMaker Reading was also found on the vocabulary subtest. The only two instances when the comparison group outperformed the SuccessMaker students was on the Word Reading subtest at 3rd grade, and the AIMSweb fluency scale at 5th grade.

The SuccessMaker students at 3rd grade did, however, outperform the comparison group on the AIMSweb fluency scale (i.e., words read correctly). It should be noted this basic measurement of accuracy and pacing for oral reading is most appropriate as an outcome for early elementary grades when judging the efficacy of the SuccessMaker Reading program. In the SuccessMaker Reading program, accuracy and pacing for oral reading is emphasized most in 2nd and 3rd grade. Accuracy and pacing is minimized at 5th grade and not included in the program at all in 6th through 8th grade.

Tables seven through nine present the mean gains for each measure of achievement and attitude for the 3rd, 5th and 7th grade study groups. These tables also show significance test results and effect size measures for the group differences.

Table 7	Third Grade Gain Score Study Group Comparisons						
Measure	Sample Size SMR/CP ¹	SMR Mean (SD) ²	CP Mean (SD)	Group Difference ³	Sample p-value	Effect Size ⁴	Effect Size Percent ⁵
GRADE Overall	352/267	9.43 (8.753)	8.05 (8.849)	1.3737	<0.0001	0.16	56%
Word Reading	352/267	1.24 (1.958)	1.36 (2.510)	-0.1247	0.0283	-0.05	48%
Vocabulary	352/267	2.38 (4.023)	2.10 (4.040)	0.2739	0.0858	0.07	53%
Sentence Comprehension	352/267	2.04 (2.713)	1.70 (2.644)	0.3422	0.0368	0.13	55%
Passage Comprehension	352/267	3.77 (4.482)	2.89 (4.219)	0.8822	<0.0001	0.21	58%
Words Read Correctly	351/267	35.41 (18.053)	32.06 (19.464)	3.3587	0.024	0.17	57%
Reading Attitude Survey	351/267	-0.30 (5.203)	-1.01 (4.953)	0.7101	<0.0001	0.14	56%

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
 2. Mean indicates the group sample mean value and (SD) indicates the group sample standard deviation
 3. Group difference = SuccessMaker Reading group mean - comparison group mean
 4. Effect Size = group mean difference / comparison sample standard deviation
 5. Effect Size Percent = percentile rank for the median SuccessMaker Reading score in relation to the comparison group (i.e., set to 50%)

Table 8	Fifth Grade Gain Score Study Group Comparisons						
Measure	Sample Size SMR/CP ¹	SMR Mean (SD) ²	CP Mean (SD)	Group Difference ³	Sample p-value	Effect Size ⁴	Effect Size Percent ⁵
GRADE Overall	342/299	7.75 (8.303)	7.19 (8.638)	0.5604	<0.0001	0.06	53%
Vocabulary	342/299	3.08 (4.005)	3.19 (4.394)	-0.1121	0.34	-0.03	49%
Sentence Comprehension	342/299	1.77 (2.864)	1.46 (3.243)	0.3167	<0.0001	0.10	54%
Passage Comprehension	342/299	2.90 (4.720)	2.54 (4.531)	0.3559	<0.0001	0.08	53%
Words Read Correctly	342/297	24.13 (19.232)	27.72(18.328)	-3.5504	<0.0001	-0.19	42%
Reading Attitude Survey	342/297	0.09 (5.744)	-0.64 (4.911)	0.7261	<0.0001	0.15	56%

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
 2. Mean indicates the group sample mean value and (SD) indicates the group sample standard deviation
 3. Group difference = SuccessMaker Reading group mean - comparison group mean
 4. Effect Size = group mean difference / comparison sample standard deviation
 5. Effect Size Percent = percentile rank for the median SuccessMaker Reading score in relation to the comparison group (i.e., set to 50%)

Table 9		Seventh Grade Gain Score Study Group Comparisons					
Measure	Sample Size SMR/CP ¹	SMR Mean (SD) ²	CP Mean (SD)	Group Difference ³	Sample p-value	Effect Size ⁴	Effect Size Percent ⁵
GRADE Overall	254/199	4.31 (6.744)	2.46 (7.368)	1.8498	<0.0001	0.25	60%
Vocabulary	254/199	1.31 (3.727)	0.58 (4.227)	0.7371	<0.0001	0.17	57%
Sentence Comprehension	254/199	1.62 (3.035)	0.89 (2.950)	0.7236	0.0003	0.25	60%
Passage Comprehension	254/199	1.37 (3.776)	0.98 (4.120)	0.3891	0.0189	0.09	54%
Words Read Correctly	252/196	21.03 (13.850)	21.87(17.093)	-0.8236	0.2218	-0.05	48%
Reading Attitude Survey	252/196	-1.30 (5.043)	-0.60 (4.916)	-0.6962	0.0013	-0.14	44%

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
 2. Mean indicates the group sample mean value and (SD) indicates the group sample standard deviation
 3. Group difference = SuccessMaker Reading group mean - comparison group mean
 4. Effect Size = group mean difference / comparison sample standard deviation
 5. Effect Size Percent = percentile rank for the median SuccessMaker Reading score in relation to the comparison group (i.e., set to 50%)

Group Comparisons by Usage Level

Specific SuccessMaker Reading usage levels produced moderate to large effects on the GRADE total score. Both 3rd and 5th grade had SuccessMaker Reading students with more than thirty hours, and these students outperformed their comparison group peers by more than 0.60 standard deviations or a percentile rank above 70. Also there is evidence that an average of sixteen hours can produce moderate gains in achievement of 0.20 standard deviations or a percentile rank above 58%.

3 rd Grade Usage ¹	Ave. Hours ²	GRADE Effect Size ^{3,4}
Study Sample	26 (352)	0.16 (56%)
less than 10 hours	N/A (0)	N/A
10 to 19 hours	16 (46)	***
20 to 29 hours	25 (225)	***
30 or more hours	34 (81)	0.63 (74%)

*** Indicates group means are not statistically significantly different.
 1. Usage time is rounded to nearest hour.
 2. Ave. Hours = average of SuccessMaker students' usage in hours, parentheses indicate sample size
 3. Effect Size = group mean gain score difference / comparison sample standard deviation
 4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

5 th Grade Usage ¹	Ave. Hours ²	GRADE Effect Size ^{3,4}
Study Sample	22 (342)	0.06 (53%)

less than 10 hours	8 (1)	N/A
10 to 19 hours	16 (131)	0.22 (59%)
20 to 29 hours	24 (182)	-0.13 (45%)
30 or more hours	33 (28)	0.61 (73%)

1. Usage time is rounded to nearest hour.
 2. Ave. Hours = average of SuccessMaker students' usage in hours, parentheses indicate sample size
 3. Effect Size = group mean gain score difference / comparison sample standard deviation
 4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

7 th Grade Usage ¹	Ave. Hours ²	GRADE Effect Size ^{3,4}
Study Sample	18 (254)	0.25 (60%)
less than 10 hours	7 (8)	0.48 (68%)
10 to 19 hours	16 (165)	0.20 (58%)
20 to 29 hours	24 (81)	0.34 (63%)
30 or more hours	N/A (0)	N/A

1. Usage time is rounded to nearest hour.
 2. Ave. Hours = average of SuccessMaker students' usage in hours, parentheses indicate sample size
 3. Effect Size = group mean gain score difference / comparison sample standard deviation
 4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

Although outcome gains tended to increase with more program use, the extent to which these gains would continue to increase beyond the limits of program usage observed can only be extrapolated. Extrapolating outcome gains for usage levels beyond those observed by the students in this study should be done with caution. There is undoubtedly a level when it becomes futile to continually increase usage in an attempt to produce larger gains. The usage levels observed in this study represent practical levels.

Third grade program users saw small gains over their comparison group counterparts in fluency. Although negative effects were observed in fluency at 5th grade, as usage increased, these effects decreased and became strong positive effects with the small sample of users of thirty hours or more.

3 rd Grade Usage ¹	Ave. Hours ²	Words Read Correctly Effect Size ^{3,4}
Study Sample	26 (352)	0.17 (57%)
less than 10 hours	N/A (0)	N/A
10 to 19 hours	16 (46)	***
20 to 29 hours	25 (225)	0.10 (54%)

30 or more hours	34 (81)	0.16 (56%)
<p>*** Indicates group means are not statistically significantly different.</p> <p>1. Usage time is rounded to nearest hour.</p> <p>2. Ave. Hours = average of SuccessMaker students' usage in hours, parentheses indicate sample size</p> <p>3. Effect Size = group mean gain score difference / comparison sample standard deviation</p> <p>4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).</p>		

5 th Grade Usage ¹	Ave. Hours ²	Words Read Correctly Effect Size ^{3,4}
Study Sample	22 (342)	-0.19 (42%)
less than 10 hours	8 (1)	N/A
10 to 19 hours	16 (131)	-0.36 (36%)
20 to 29 hours	24 (182)	-0.19 (42%)
30 or more hours	33 (28)	0.54 (70%)
<p>1. Usage time is rounded to nearest hour.</p> <p>2. Ave. Hours = average of SuccessMaker students' usage in hours, parentheses indicate sample size</p> <p>3. Effect Size = group mean gain score difference / comparison sample standard deviation</p> <p>4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).</p>		

7 th Grade Usage ¹	Ave. Hours ²	Words Read Correctly Effect Size ^{3,4}
Study Sample	18 (254)	***
less than 10 hours	7 (8)	***
10 to 19 hours	16 (165)	***
20 to 29 hours	24 (81)	-0.07 (47%)
30 or more hours	N/A (0)	NA
<p>1. Usage time is rounded to nearest hour.</p> <p>2. Ave. Hours = average of SuccessMaker students' usage in hours, parentheses indicate sample size</p> <p>3. Effect Size = group mean gain score difference / comparison sample standard deviation</p> <p>4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).</p>		

Group Comparisons by Subpopulations

When the data was broken out for student subpopulations, 3rd grade Hispanic, male, and low SES SuccessMaker students all statistically significantly outperformed their comparison group peers on the GRADE with moderate to large effects. Similarly, 3rd grade lower-achieving, African American, female, and low SES SuccessMaker students saw moderate sized gains over the comparison group in fluency. Lastly, figures four and five depict the statistically significant

effects sizes for the 3rd grade at-risk student populations (i.e., low achieving, African American, Hispanic, reduced priced lunch) on the GRADE and in fluency.

3 rd Grade	SMR/CP ¹	GRADE Effect Size ^{2,3,4}
Whole sample	352/267	0.16 (56%)
Low achieving	88/58	***
Caucasian	210/172	***
African American	36/18	***
Hispanic	70/53	0.54 (70%)
Male	180/134	0.26 (60%)
Female	172/133	***
Reduced priced lunch	133/92	0.40 (65%)
Full priced lunch	219/175	***
*** Indicates group means are not statistically significantly different		
1. SMR/CP indicates the SuccessMaker Reading group size/comparison group size		
2. effect size = group mean gain score difference / comparison sample standard deviation		
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.		
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).		

3 rd Grade	SMR/CP ¹	Words Read Correctly Effect Size ^{2,3,4}
Whole sample	351/267	0.17 (57%)
Low achieving	87/58	0.39 (65%)
Caucasian	209/172	0.24 (59%)
African American	36/18	0.16 (56%)
Hispanic	70/53	***
Male	180/134	***
Female	171/133	0.21 (58%)
Reduced priced lunch	132/92	0.25 (60%)
Full priced lunch	219/175	***
*** Indicates group means are not statistically significantly different		
1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size		
2. effect size = group mean gain score difference / comparison sample standard deviation		
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.		
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).		

Figure 4 Third Grade Reading Achievement Gains for At-risk Populations

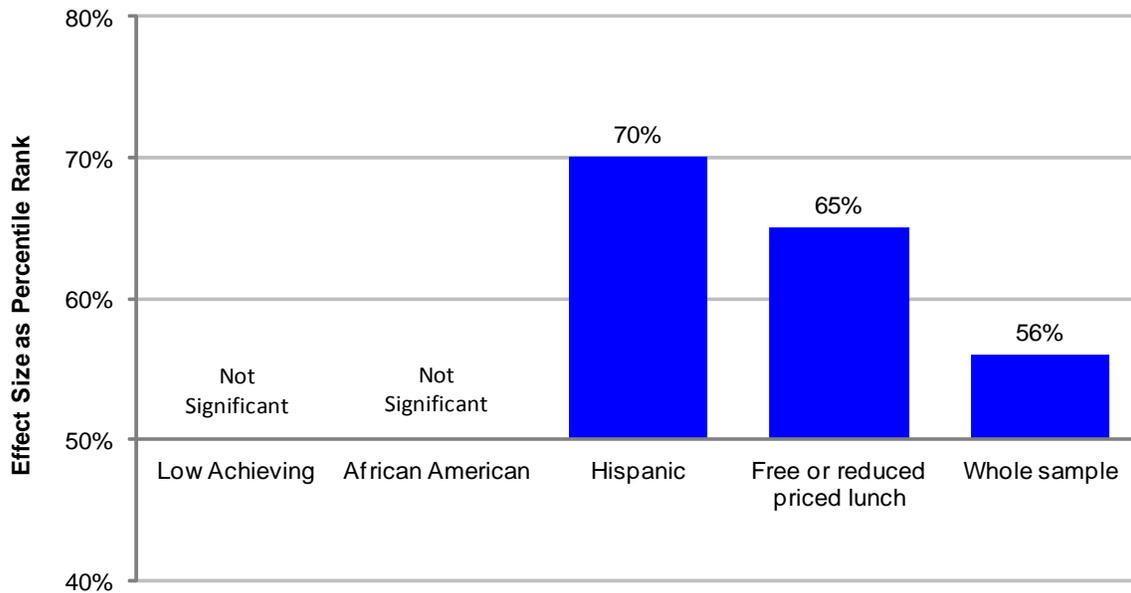
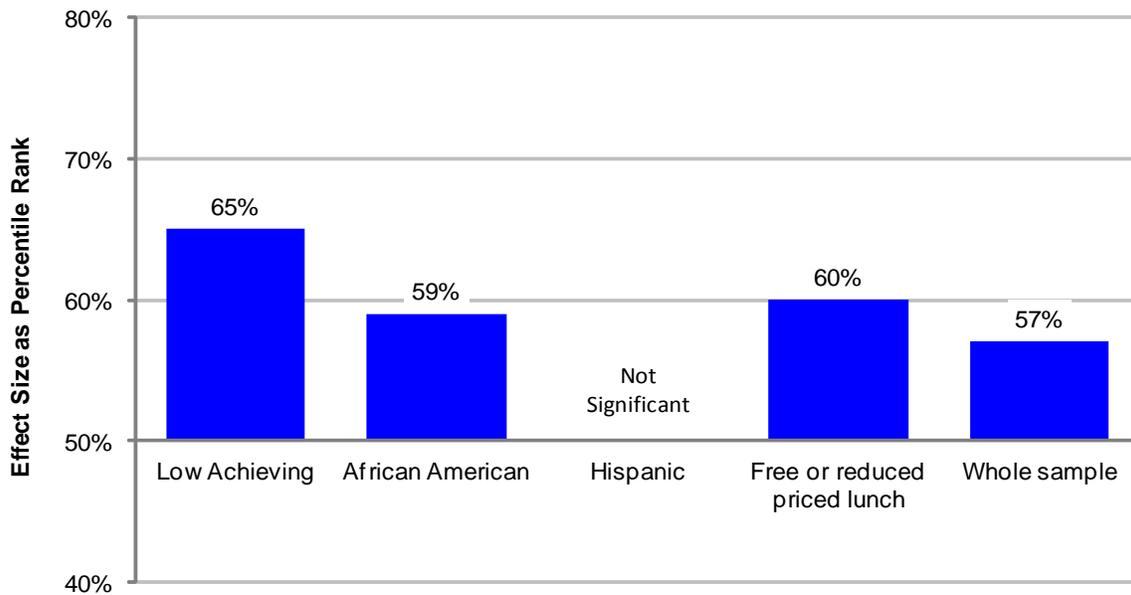


Figure 5 Third Grade Fluency Gains for At-risk Populations



Hispanic and low SES SuccessMaker 5th grade students statistically significantly outperformed their comparison group peers on the GRADE and saw moderate sized effects. Conversely, for all subpopulations except African-American and lower-achieving students, the comparison group outgained the SuccessMaker students in fluency. Figures six and seven depict the statistically significant effects sizes for the 5th grade at-risk student populations (i.e., low achieving, African American, Hispanic, reduced priced lunch) on the GRADE and in fluency.

5 th Grade	SMR/CP ¹	GRADE Effect Size ^{2,3,4}
Whole sample	342/299	0.06 (53%)
Low achieving	77/53	***
Caucasian	179/136	***
African American	21/23	***
Hispanic	104/103	0.20 (58%)
Male	163/135	***
Female	179/164	***
Reduced priced lunch	152/134	0.22 (59%)
Full priced lunch	190/165	***

*** Indicates group means are not statistically significantly different

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
2. effect size = group mean gain score difference / comparison sample standard deviation
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

5 th Grade	SMR/CP ¹	Words Read Correctly Effect Size ^{2,3,4}
Whole sample	342/297	-0.19 (42%)
Low achieving	77/52	***
Caucasian	179/136	-0.35 (36%)
African American	21/23	0.56 (71%)
Hispanic	104/101	-0.31 (38%)
Male	163/134	-0.20 (42%)
Female	179/163	-0.19 (42%)
Reduced priced lunch	152/132	-0.17 (43%)
Full priced lunch	190/165	-0.21 (42%)

*** Indicates group means are not statistically significantly different

1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size
2. effect size = group mean gain score difference / comparison sample standard deviation
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).

Figure 6 Fifth Grade Reading Achievement Gains for At-risk Populations

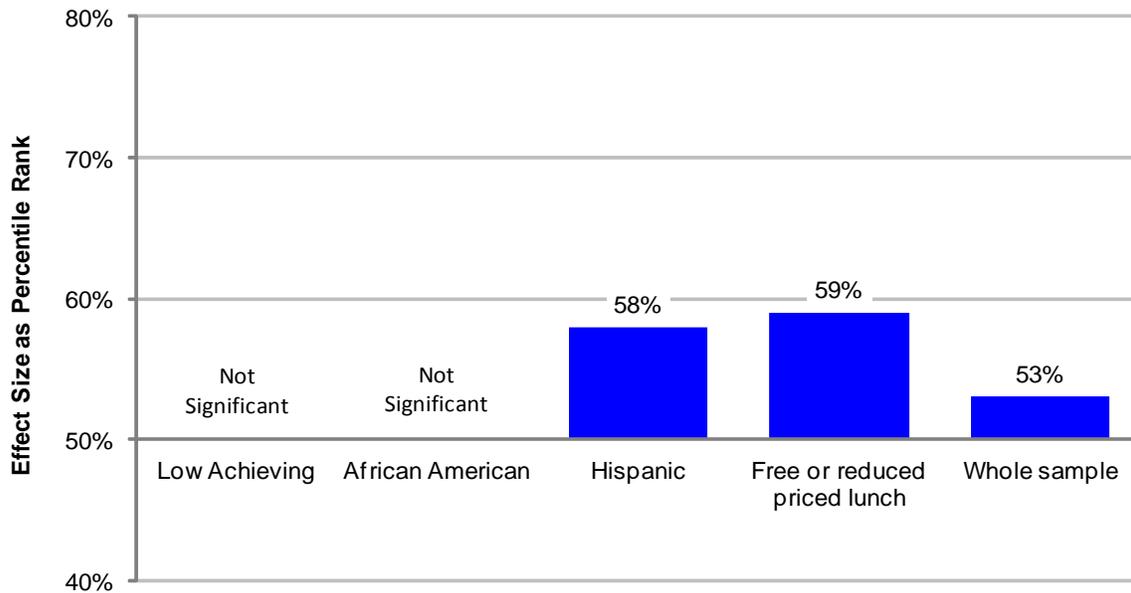
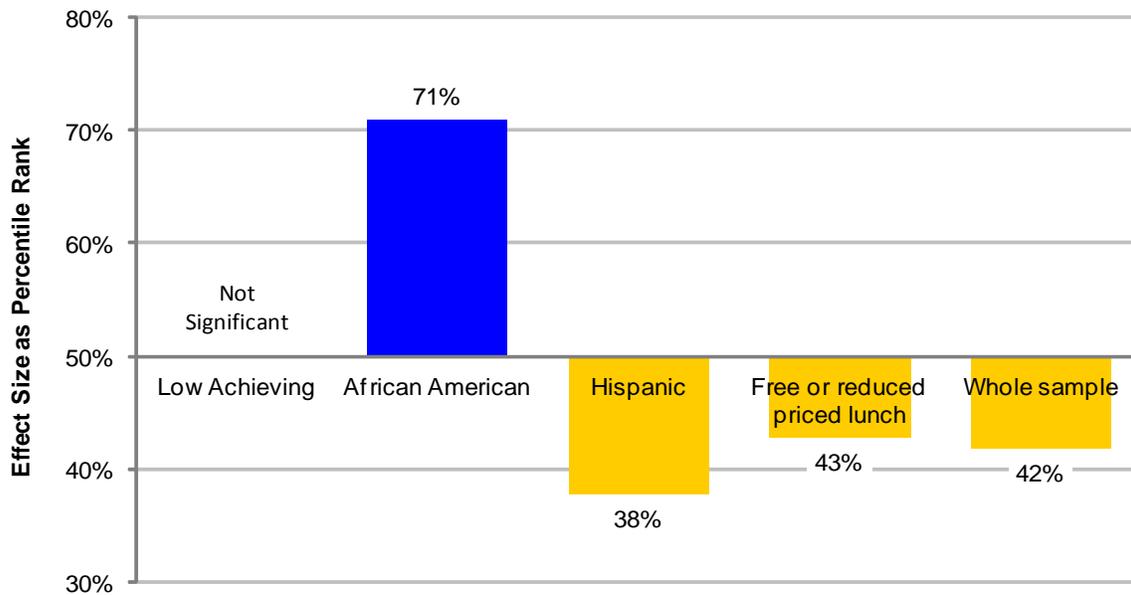


Figure 7 Fifth Grade Fluency Gains for At-risk Populations



In all 7th grade subpopulations, SuccessMaker students statistically significantly outperformed their comparison group peers on the GRADE and saw moderate to large effects. In fluency, though the whole sample did not show a statistically significant difference, the African-American and Hispanic comparison students had somewhat greater gains. Figures eight and nine depict the statistically significant effects sizes for the 7th grade at-risk student populations (i.e.,

low achieving, African American, Hispanic, reduced priced lunch) on the GRADE and in fluency.

7 th Grade	SMR/CP ¹	GRADE Effect Size ^{2,3,4}
Whole sample	254/199	0.25 (60%)
Low achieving	74/70	0.35 (64%)
Caucasian	134/98	0.28 (61%)
African American	69/60	0.20 (58%)
Hispanic	30/22	0.67 (75%)
Male	125/97	0.33 (63%)
Female	129/102	0.18 (57%)
Reduced priced lunch	136/103	0.19 (58%)
Full priced lunch	118/96	0.32 (62%)
*** Indicates group means are not statistically significantly different		
1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size		
2. effect size = group mean gain score difference / comparison sample standard deviation		
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.		
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).		

7 th Grade	SMR/CP ¹	Words Read Correctly Effect Size ^{2,3,4}
Whole sample	252/196	***
Low achieving	72/69	***
Caucasian	134/98	***
African American	68/60	-0.13 (45%)
Hispanic	30/21	-0.16 (44%)
Male	124/95	***
Female	128/101	***
Reduced priced lunch	134/101	***
Full priced lunch	118/95	***
*** Indicates group means are not statistically significantly different		
1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size		
2. effect size = group mean gain score difference / comparison sample standard deviation		
3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.		
4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).		

Fig. 8 Seventh Grade Reading Achievement Gains for At-risk Populations

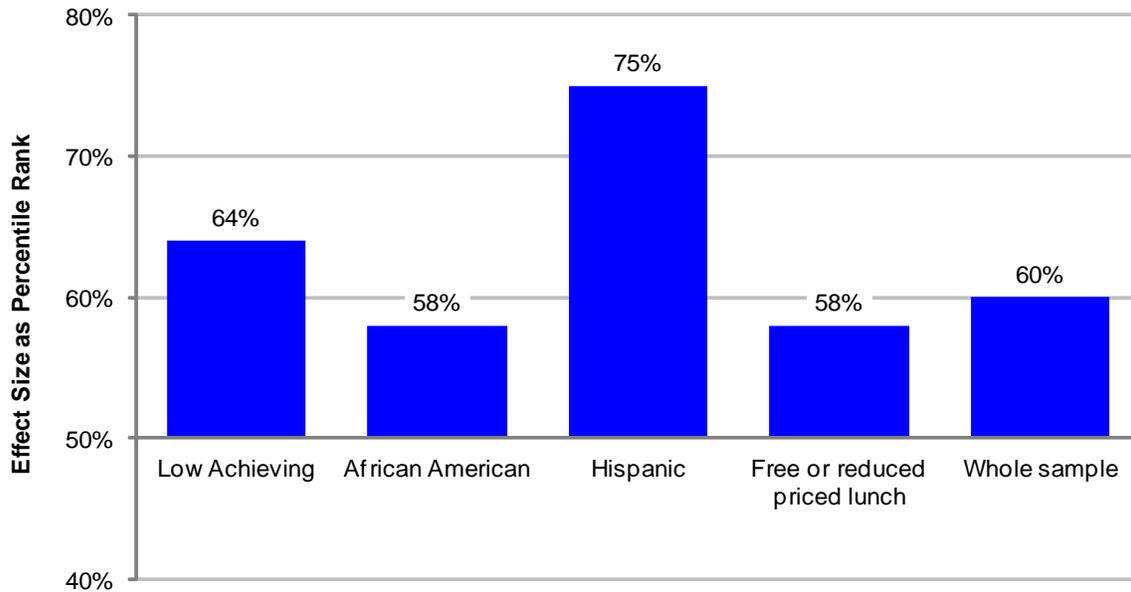
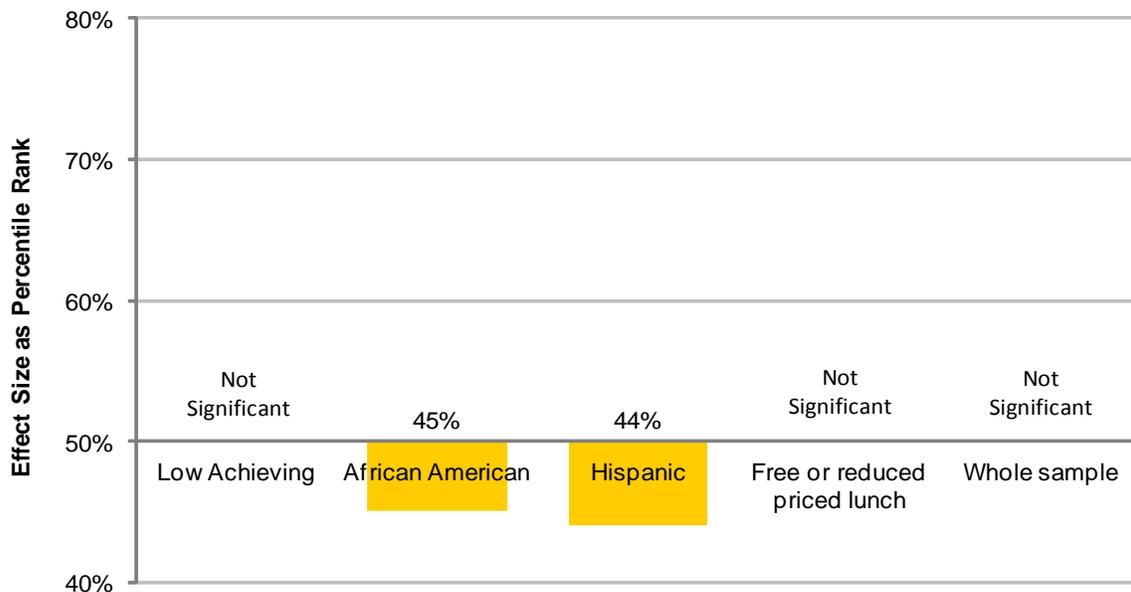


Figure 9 Seventh Grade Fluency Gains for At-risk Populations



SuccessMaker Reading users from 3rd, 5th, and 7th grade at-risk populations statistically significantly outperformed the comparison group students on the GRADE.

Student Attitudes

SuccessMaker Reading students at 3rd and 5th grade demonstrated statistically greater gains in their academic attitudes than their comparison group counterparts. These effects were also seen in several at-risk populations.

Student Academic Attitudes

Figures ten through twelve present the SuccessMaker and comparison group mean gain scores in academic attitude for the three study grades. The lines represent the gain in academic attitude from the start of the school year (i.e., BOY) to the end-of-year (i.e., EOY) for both study groups. It can be seen that the blue line, representing SuccessMaker Reading, begins at a lower point in all three graphs indicating less positive overall baseline attitudes. The 3rd and 5th grade SuccessMaker students still had statistically greater gains in academic attitudes than their comparison group counterparts

Female and low SES 3rd grade SuccessMaker students also saw statistically significantly greater gains than the comparison group. Further, the 5th grade SuccessMaker African-American, Hispanic, male and low SES students also saw greater gains in attitudes. Lastly, no 7th grade SuccessMaker populations statistically significantly outperformed the comparison group.

Figure 10 Third Grade Reading Attitudes Gains

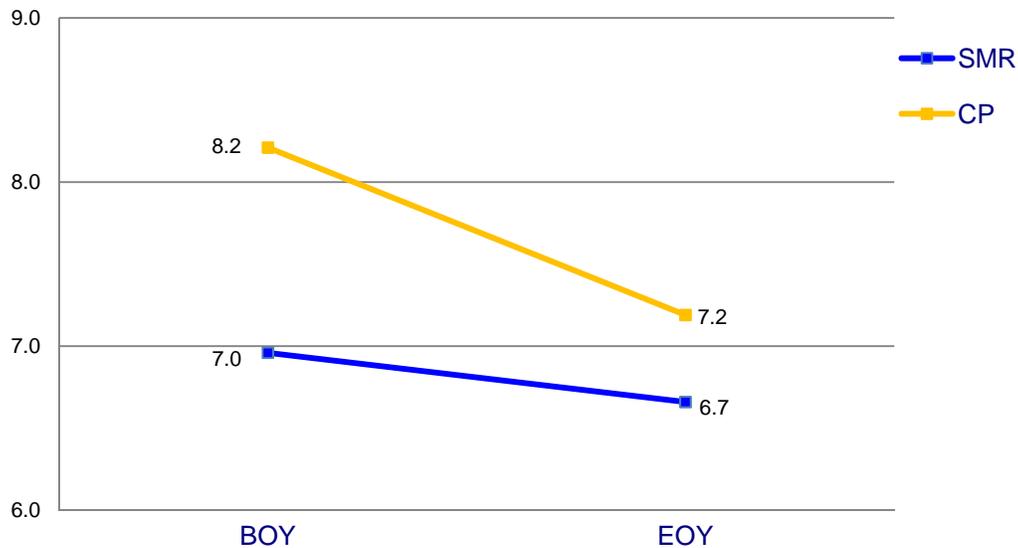


Figure 11 Fifth Grade Reading Attitude Gains

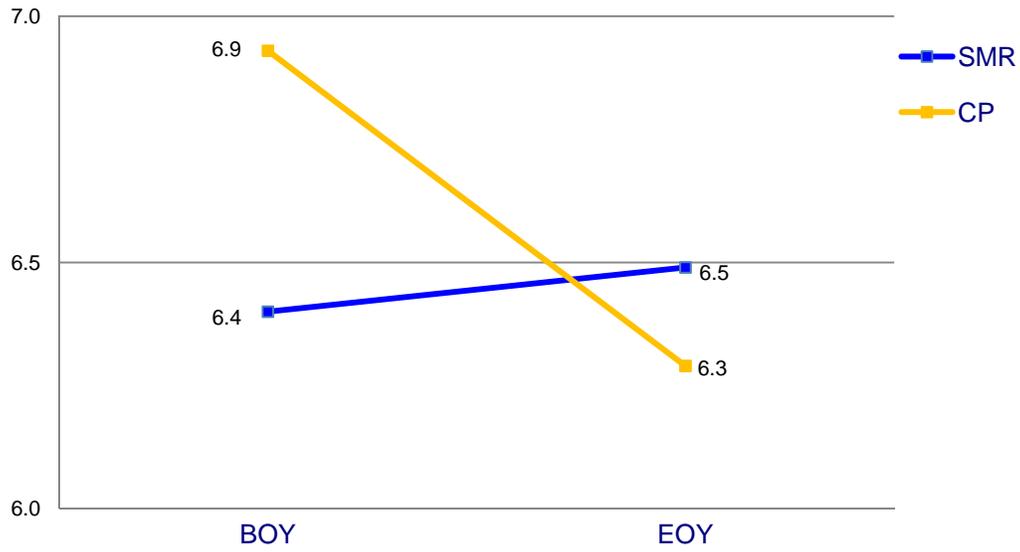
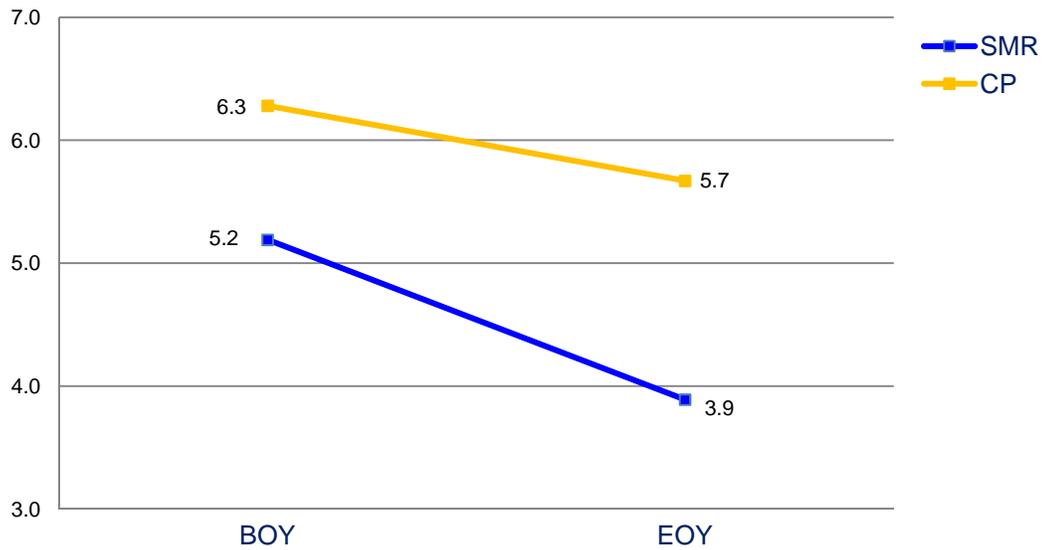


Figure 12 Seventh Grade Reading Attitude Gains



3 rd Grade	SMR/CP ¹	Student Reading Attitude Effect Size ^{2,3,4}
Whole sample	352/267	0.14 (56%)
Low achieving	88/58	***
Caucasian	210/172	0.22 (59%)
African American	36/18	***

Hispanic	70/53	***
Male	180/134	***
Female	172/133	0.17 (57%)
Reduced priced lunch	133/92	0.15 (56%)
Full priced lunch	219/175	0.15 (56%)
<p>*** Indicates group means are not statistically significantly different</p> <p>1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size</p> <p>2. effect size = group mean gain score difference / comparison sample standard deviation</p> <p>3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.</p> <p>4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).</p>		

5 th Grade	SMR/CP ¹	Student Reading Attitude Effect Size ^{2,3,4}
Whole sample	342/299	0.15 (56%)
Low achieving	77/53	***
Caucasian	179/136	***
African American	21/23	0.28 (61%)
Hispanic	104/103	0.32 (62%)
Male	163/135	0.30 (62%)
Female	179/164	***
Reduced priced lunch	152/134	0.24 (60%)
Full priced lunch	190/165	***
<p>*** Indicates group means are not statistically significantly different</p> <p>1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size</p> <p>2. effect size = group mean gain score difference / comparison sample standard deviation</p> <p>3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.</p> <p>4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).</p>		

7 th Grade	SMR/CP ¹	Student Reading Attitude Effect Size ^{2,3,4}
Whole sample	254/199	-0.14 (44%)
Low achieving	74/70	***
Caucasian	134/98	-0.10 (46%)
African American	69/60	-0.16 (44%)

Hispanic	30/22	***
Male	125/97	-0.31 (38%)
Female	129/102	***
Reduced priced lunch	136/103	-0.13 (45%)
Full priced lunch	118/96	-0.16 (44%)
<p>*** Indicates group means are not statistically significantly different</p> <p>1. SMR/CP indicates the SuccessMaker Reading group size / comparison group size</p> <p>2. effect size = group mean gain score difference / comparison sample standard deviation</p> <p>3. The average effect size for studies with large samples (i.e., more than 250 students) has been recently estimated at 0.13 standard deviations.</p> <p>4. The value in the parentheses indicates the percentile rank for the median SuccessMaker score in relation to the comparison group (i.e., set to 50%).</p>		

Student SuccessMaker Reading Opinions

SuccessMaker students were surveyed at the end of the school year as to their opinions on several aspects of the program (i.e., 3rd = 370, 5th = 362, and 7th = 266 responses). Only 4% of 3rd grade, 15% of 5th grade and 22% of 7th grade program users indicated they disliked the program.

When students were surveyed, 96% of 3rd grade, 85% of 5th grade, and 78% of 7th grade students indicated they liked using the SuccessMaker program.

Do you like SuccessMaker Reading?	
3 rd Grade	Percent
Liked	57%
Sometimes Liked	39%
Disliked	4%
5 th Grade	Percent
Liked	30%
Sometimes Liked	55%
Disliked	15%
7 th Grade	Percent
Liked	20%
Sometimes Liked	58%
Disliked	22%

Similarly, the users found the learning activities and stories engaging with a small 3% of 3rd grade, 11% of 5th grade and 21% of 7th grade indicating they disliked the exercises and only 5%

of 3rd grade, 17% of 5th grade and 29% of 7th grade indicated they disliked the stories. Ninety-five percent of 3rd grade students responded that they liked the characters and animation. Finally, the majority of 5th (i.e., 73%) and 7th (i.e., 64%) grade users reported the video hosts as being helpful to them while using the program.

Teacher SuccessMaker Opinions

Opinions about the program were systematically collected from teachers during focus group sessions. Thirty-six of the 37 SuccessMaker teachers were available to participate in the focus group sessions. The focus group sessions provided extensive insight into teacher and student experiences with, and attitudes about, the SuccessMaker Reading program. Focus groups were conducted at each school during site visits between late March and late May. These sessions provided a forum for teachers and administrators to answer specific questions as well as express their professional and personal opinions regarding the program. The teachers were encouraged to speak without hesitation or inhibition, and to be as candid as possible.

The focus group results describe what teachers and students liked about the SuccessMaker program, how the program may be improved, and how teachers are using specific features of the system.

The teacher response to the program was overwhelmingly positive, with 70% of the 1,063 recorded comments coded as positive in nature. Teachers felt that the program was a welcomed and successful addition to their print curriculum for many reasons including interactivity, differentiated content, immediate feedback, and student engagement.

3rd grade teacher: "I like the differentiation and the individualization. The kids read at their own pace."

5th grade teacher: "Immediate feedback: It targets very specific things they need to work on."

7th grade teacher: "SuccessMaker is a very engaging, interactive program that is differentiated for students' achievement levels."

Teacher response to SuccessMaker was overwhelmingly positive, with 70% of all responses coded as positive in nature.

Most teachers felt the initial placement was satisfactory for the majority of students and that the adaptive motion through the content worked well. The occurrence of students being initially placed too high or too low was rare, and the custom course feature allowed teachers to easily rectify the situation. Teachers also liked the progress-reporting feature that monitored the students' motion through the program.

Interventionist: "It's easy to not give them [higher kids] the attention that they need, so I really appreciate when the program gets harder and they say that it is difficult because they are finally being challenged. This is great."

5th grade teacher: “I think it moves them at a very good pace. I think they’re challenged just enough. The kids are being challenged more and getting harder stuff. The kids that need a little bit easier stuff are getting easier stuff and I think it’s great. I think it’s good”.

The program’s reporting feature was also well-received by the teachers. Most teachers expressed an appreciation for a program that explicitly demonstrates student progress such as the SuccessMaker reading program. Of the 206 comments received about the reporting and progress reporting features, 75% of the comments were positive in nature.

7th grade teacher: “I don’t have to re-assess students to find out where their gaps are, SuccessMaker already tells me.”

Curriculum Specialist: “It’s very visual. You can say this is where they are, this is where they should be, and this is how far they need to get there.”

Most teachers tended to walk around the room when students were using SuccessMaker in the lab, looking over students’ shoulders, monitoring their progress and answering their questions. In doing this, teachers gained a lot of insight into their students’ development as well as the ability to deliver personal instruction.

3rd grade teacher: “I had one student; she would just sit there and look at me. I don’t understand this. I found out she did not know how to count by fives. I didn’t know that.”

Individual preference dictated how teachers utilized the reports and what they liked most about the reporting system. The research team found that teachers most often used the reports to re-affirm existing assessment results, provide feedback to interventionists and parents, to monitor and report student progress, and to help inform instruction.

Reading Specialist: “The school psychologist found [the reports] valuable, so I’ve pulled reports for her.”

3rd grade teacher: “I like the parent communication that goes with the reports, I used it for parent conferences. I really like it because it showed the parents how much gain the students have made since using this program, and parents love to see the gain. No matter how much gain, they love to see it. They loved the reports.”

5th grade teacher: “It really helped me with planning and what we needed to add additional time to. I looked at areas that certain kids were still struggling in.”

Interventionist: “We print the SuccessMaker student performance report every quarter for the teachers so they can see them and to share with parents.”

Teachers believe that their students like using the program. Teachers were tremendously positive about their students’ interactions with the program. Of the 198 recorded teacher comments about the student response to SuccessMaker, 81% were positive in nature. Teachers felt that the program successfully engaged and motivated students to become better readers. Seventy-nine

percent of the 61 recorded teacher comments about motivation and engagement were positive in nature.

Interventionist: "I think the animation is great. It captures [the students'] attention right away. I see them laughing and it keeps them engaged."

3rd grade teacher: "The students love the jokes and I see them laughing. They love the games."

5th grade teacher: "They find it very interesting and they say "Wow, you'll never guess what I read today."

7th grade teacher: "It keeps my students attention – I can walk out of the room and when I come back they are still interested in the program."

Reading Specialist: "The program seemed to be centered on the kids, and the kids did seem to be attracted to it."

Additionally, teachers indicated that the content of the SuccessMaker reading program is generally aligned with their current curriculum. Most teachers felt the program reinforces skills already learned in the classroom, and also teaches students reading skills or concepts they have not yet learned in class. Of the 185 coded teacher responses about the program's content, 75% were positive in nature.

3rd grade teacher: "There have been times when they run across something in SuccessMaker that I've already taught and there are other times when the program will teach them something that is totally new and they'll either bring it back to the classroom or when I go to teach that thing they'll say 'Oh, I already know this from Success Maker!' which is great."

Although the program's fluency feature was liked overall, 65% of the 48 recorded teacher comments were positive in nature, the fluency portion of the program received mixed reviews. In addition to technical problems, some teachers found that students were initially embarrassed to read aloud into the microphone and teachers noticed a decrease in interest among the students over time in the fluency portion of the program.

Interventionist: "I think the novelty of hearing themselves read has kind of worn off a bit. They've already heard themselves and want to move on to something else so they're not listening."

5th grade teacher: "They were a little bit self-conscious in the beginning, but they've been pretty good."

5th grade teacher: "I loved that the students read it a couple times and they choose what we hear. They have some input. They are assessing their own fluency to some degree."

Students occasionally experienced repeating passages as a result of technical errors with the program. In almost all verified cases, repeating passages were seen with 7th grade students.

7th grade teacher: "Some kids would get stuck with a couple of stories, and then other kids didn't have a problem at all."

Teachers felt that the program's scaffolding feature positively challenged their students to become better readers. Of the 22 recorded teacher responses about the scaffolding feature, 91% were positive in nature. Teachers also felt the SuccessMaker reading program provided other valuable resources to assist users. Such assistance proved to be motivational for struggling readers and included the glossary, clip art, read-to-me and roll-over audio features, as well as custom courses. Response to these features was 90% positive.

Interventionist: "I think [the scaffolding] is good because it makes them go back and work at it again. I think that's good, so that they can't escape without really giving it a good try."

3rd grade teacher: "My kids love the glossary."

5th grade teacher: "The read-to-me feature is excellent practice for the low kid in my group."

7th grade teacher" "I think the glossary is useful for the lower students that need the support."

A majority of teachers felt that the program challenged both their special needs and higher achieving student population (i.e., comments were 79% positive). Teachers also felt the SuccessMaker program was more engaging and challenging than previous printed and computer-based supplements, helpful for ELL students and struggling readers, and an overall good educational investment.

Principal: "I have been amazed by our Ell and low readers gains in such a short time span."

3rd grade teacher: "I have a child that is point six above everybody else. Almost a full grade level...but still continues to be challenged... He's a diligent worker, smart kid so I don't think he's trying to do poorly, it's just challenging where he's at."

Interventionist: "Yes, it challenged all of our ability level students. Some of it was difficult with the ELL students just because they didn't always understand the language. Even our autistic student started being successful."

Teachers felt the initial placement and adaptive motion of students through the program was effective and the learning activities were well-received by a majority of students. The teachers responded positively to the reporting system and believe it met their needs as well as the needs of parents and educational teams. Teachers reported minor technical issues (ex., freezing, activities loading slowly, repeating passages), some of which were a result of problems with the program. Ultimately, teachers felt the SuccessMaker reading program was engaging and challenging for their students, helpful for struggling readers, and an overall good educational investment.

IV. DISCUSSION

The study sample was diverse and very large at 1,711 students with 948 SuccessMaker Reading users. The study sample included sizable portions of the type of at-risk students that would benefit from a well-conceived and implemented reading intervention, specifically; Hispanic, African American, low SES, and lower achieving. Teachers came up with creative solutions to get all students on the program each week, overcoming packed classroom lesson plans and filled computer lab schedules. Most teachers went to the lab 2 or 3 times a week for average program usage of 26, 22, and 18 hours, for 3rd, 5th, and 7th grade respectively.

Teachers firmly believe that their students like using SuccessMaker Reading and feel that the program makes the learning process more fun for students. A majority of students reported positive attitudes towards the program as well as more positive academic attitudes than non-users.

SuccessMaker teachers and students quickly became comfortable with the program, and felt the program was a good educational investment. When interviewed, the teacher response to the program was overwhelmingly positive. Teachers also firmly believe that their students like using the program and feel that the program makes the learning process more fun. When surveyed, only a small minority of students indicated they disliked the program. Further evidence that the program resonated positively with students can be seen in the fact that 3rd and 5th grade SuccessMaker students had greater gains in their academic attitudes than did their comparison group counterparts. These effects were also seen in several at-risk populations.

Lastly, the achievement data implies that students randomly assigned to use the program, including at-risk students, can be more successful in vocabulary, comprehension and fluency when receiving 16 hours or more on the program during their first school year using the program. Also, it appears that achievement increases as program usage increases.

The achievement data implies that mainstream students using SuccessMaker Reading, including at-risk students, can be more successful in vocabulary, comprehension and fluency when receiving 16 hours or more on the program over their first school year using the program. Further, it appears users can be more successful the more they use the program.