

ISTE 2010
Presentation
June 28, 2010

Project RED Key Findings

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About the Project RED Team: The leadership for Project RED comes from the One-to-One Institute and the technology experts who wrote the *America's Digital Schools* reports.

- Thomas Greaves, CEO, The Greaves Group.
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- Jeanne Hayes, President, The Hayes Connection,
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- Michael Gielniak, Ph.D., Director of Programs and Development, One-to-One Institute,
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- Almost 1,000 completed responses
- Representative of enrollment, geography, poverty-level and ethnicity of universe
- Compare to universe for student/computer ratio comparison
- Statistical (regression) analysis reveals significant correlations
- Predictive (Neural Networking) modeling reveals useful predictive models associating activities of respondents with reported improvements by respondents

The Project RED study provides unique scope, breadth, and depth:

- 997 schools, representative of the US school universe
- 11 diverse Education Success Measures
- 136 independent variables in 22 categories
- Comparison of findings by students per computer ratios (1:1, 2:1, 3:1, 4:1 or more)
- Comprehensive demographic data correlated to survey results

- Disciplinary action
- Dropout rate
- Paperwork
- Paper and copying expenses
- Teacher attendance
- High-stakes test scores
- AP course enrollment
- College attendance plans
- Course completion rates (HS only)
- Dual/joint enrollment in college (HS only)
- Graduation rates (HS only)

Predictive modeling provides us with the key factors leading to academic success, specifically in reducing dropout rates, increasing graduation rates, reducing disciplinary actions and improving high-stakes test scores. In rank order, they are:

Rank Key Implementation Factor

1. Intervention classes: Technology is integrated into every class.
2. Principal leads change management and gives teachers time for both Professional Learning and Collaboration.
3. Games/Simulations and Social Media: Students use technology daily.
4. Core subjects: Technology is integrated into daily curriculum.
5. Online Assessments: Both formative and summative is done frequently.
6. Student-Computer Ratio: Fewer students per computer improves outcomes.
7. Virtual field trips: With more frequent use, virtual trips are more powerful..
8. Search engines: Students use daily.
9. Principal is trained via short courses in teacher buy-in, best practices and technology-transformed learning.

1:1 works when properly implemented.

In general, schools with a 1:1 student/computer ratio outperform non-1:1 schools on both academic and financial measures.

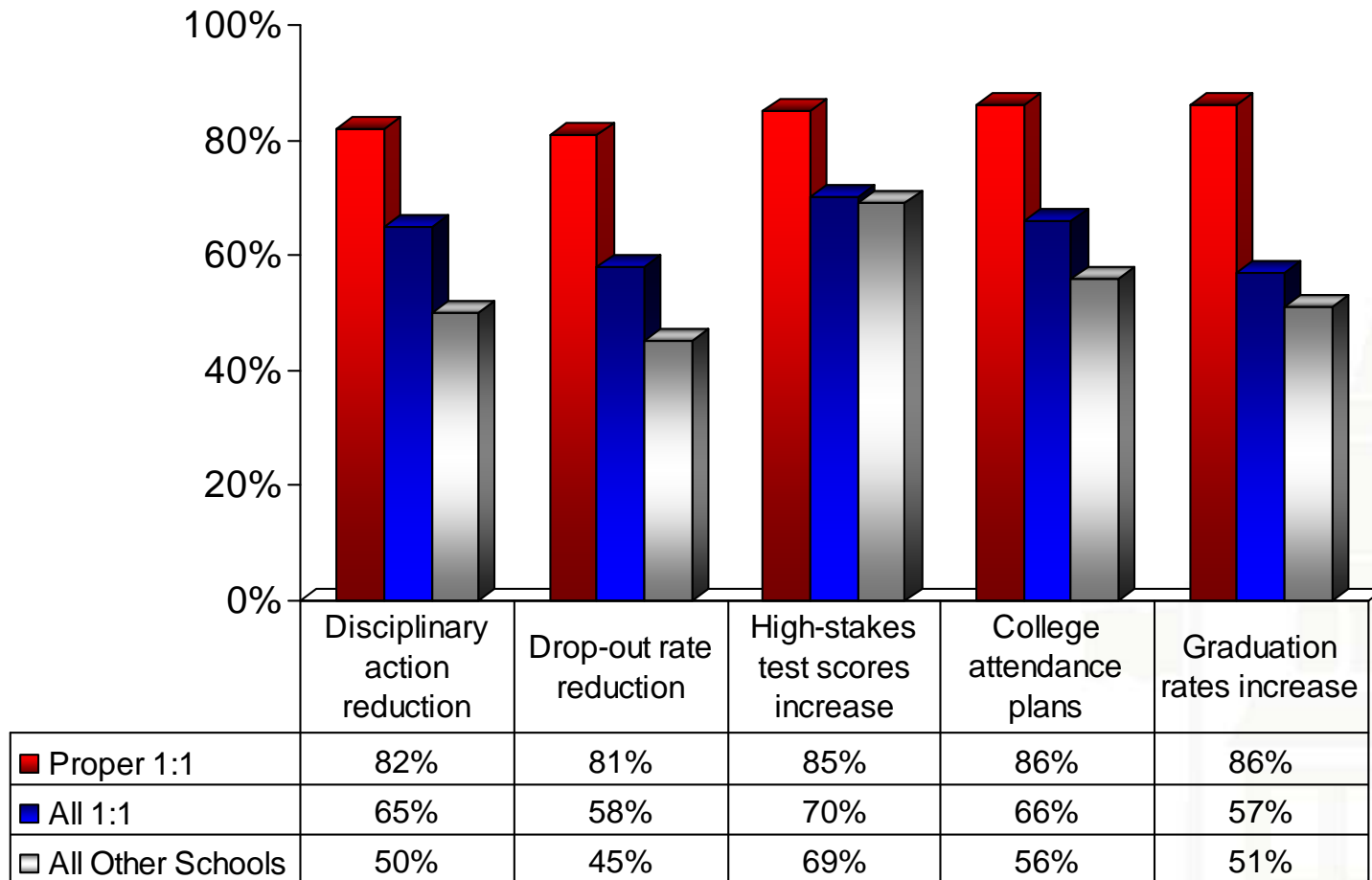
Schools employing certain factors, which we call “Proper Implementation Factors,” substantially outperform both “all other schools” as well as “1:1 schools.” The chart below illustrates the positive impact of just three of these implementation factors:

1. 1:1 student computer ratio
2. Electronic formative assessments at least weekly
3. Collaboration of teachers in professional learning communities at least weekly

Proper Implementation is the Key

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Pct. of Respondents
Reporting Improvement



Schools are Facing a Technology Implementation Crisis.

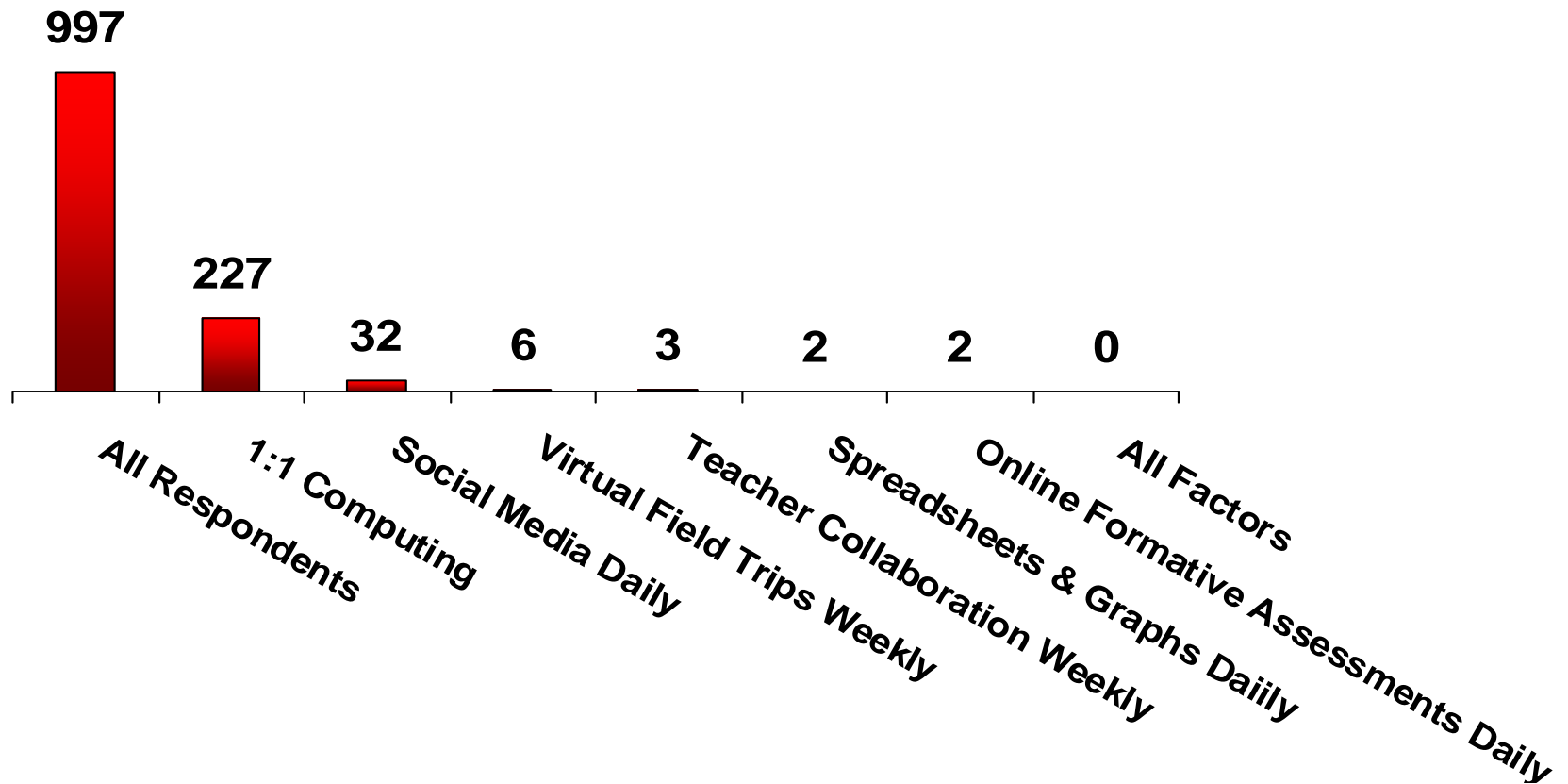
One of the most important findings from Project RED's study is how few schools actually implement technology correctly despite knowing that technology improves learning only when it is deployed frequently in appropriate learning environments. Very few schools implement many of the Key Implementation Factors despite large investments in infrastructure and hardware.

For example, the Project RED Team reviewed the Key Implementation Factors associated with improvements in high-stakes test scores and found that not one school with a 1:1 students per computer ratio deployed all these factors.

Implementation Crisis: Too Few Schools Deploy Best Practices

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No. of Respondents in 1:1 Schools Reporting Use of Multiple Factors



Technology is an Investment not an Expense.

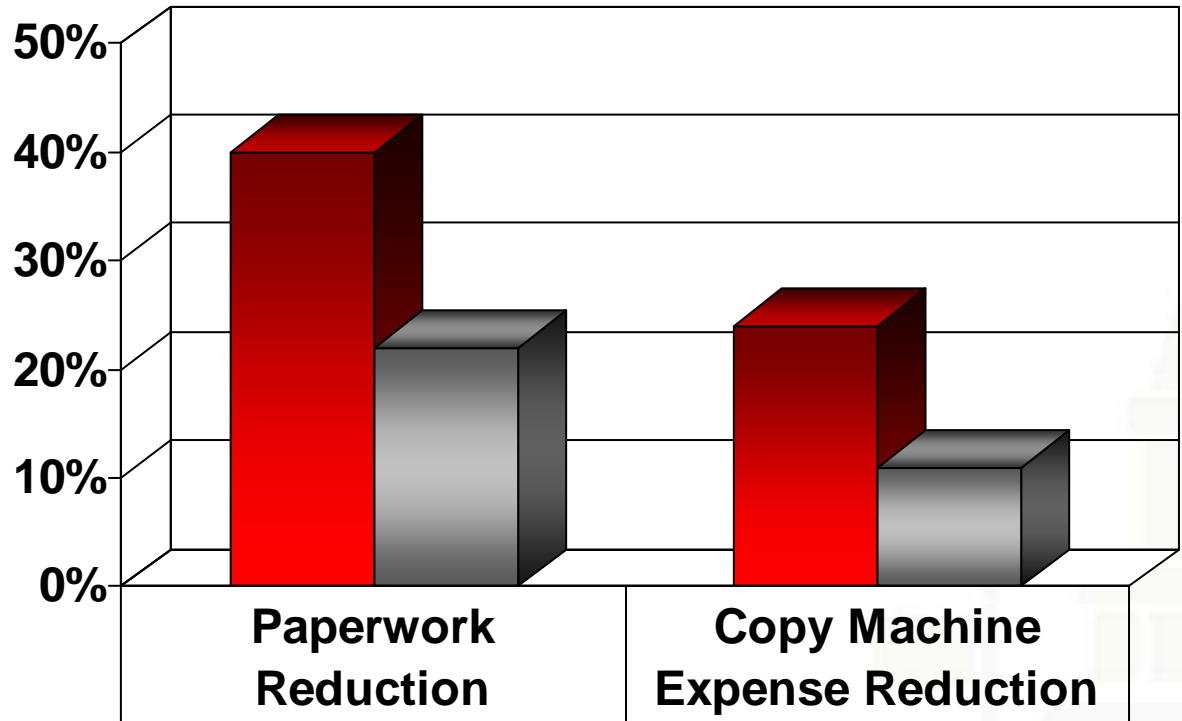
The huge economic cost of dropouts is well known. The difference in lifetime tax revenues between a dropout and a college graduate is approximately \$200,000. If 25% of dropouts actually graduated from college, the increase in tax revenues would be \$6.25 Billion per year per graduating class. Schools with a 1:1 student/computer ratio are cutting the dropout rate and reaping this broader benefit.

It is estimated that high schools where every student has a computer and which use an LMS could cut copy budgets in half. On a national basis that would equate to savings of \$400M a year for high schools alone.

1:1 Schools Have Greater Savings



Pct. of Respondents



■ 1:1 Schools	40%	24%
■ All Other Schools	22%	11%

Leadership and Vision are Essential Components.

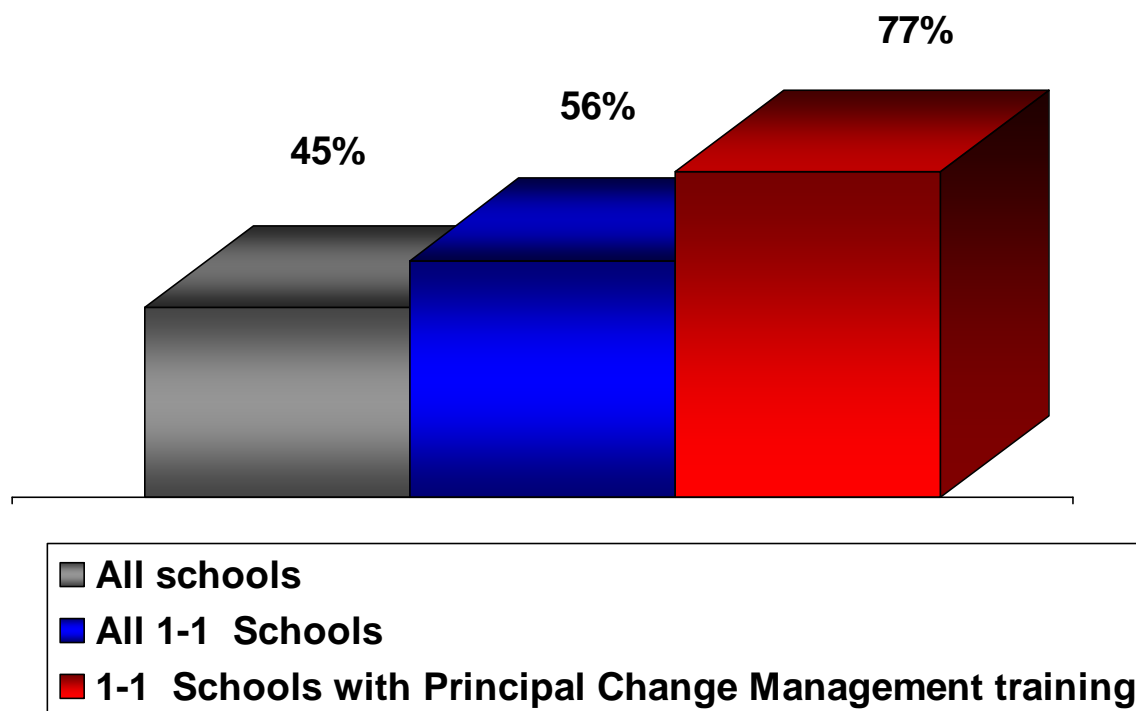
The impact of a good principal has been widely documented. The Project RED analysis shows that the principal is the single most important variable across many of the eleven Education Success Measures. This finding suggests that change management training for principals involved in large-scale technology implementations is of paramount importance.

All schools benefit from technology, and the benefits improve somewhat in 1:1 schools. But when principals receive specialized training and technology is *properly implemented*, the benefits increase even more.

Reduction in Disciplinary Actions due to Technology

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Pct. of Respondents



Technology-assisted Intervention Classes Rank No. 1.

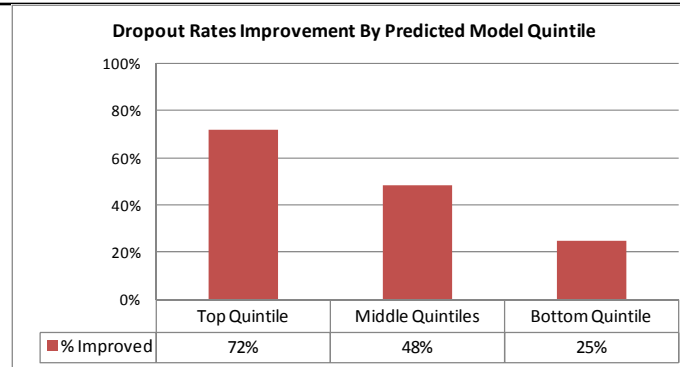
Project RED found that technology-infused interventions (ELL, Title I, Special Ed and Reading Intervention) were the top model predictor of improved high stakes test scores, dropout rate reduction, and improved discipline. The only other top model predictor for more than one Education Success Measure was the students per computer ratio with lower ratios (1:1) being preferable.

This finding also illustrates the power of the student-centric approach enabled by technology, where students typically work at their own pace, allowing teachers to spend more time with individual students and small groups.

Improving Drop Out Rates

Key Model Predictors

Factor	Description	Relative Importance
13	Intervention Classes - Technology is integrated into every class	29.4
9	Principal Enables Teacher Professional Learning, Collaboration and Leads Change Management	23.4
5	Core Subjects: Technology is integrated into daily curriculum	17.2
17	Virtual Field Trips Occur (and effect strengthens with frequency)	15.0
Ratio	1:1 Student to Device Ratio	8.4
6	Principal Trained via short courses in: Teacher Buy-in, Best Practices and Tech Transformed Classroom	6.8



Relative Importance Scale

0 1

15

30

← Less Influential

→ Most Influential

Collaboration and Social Media are Important.

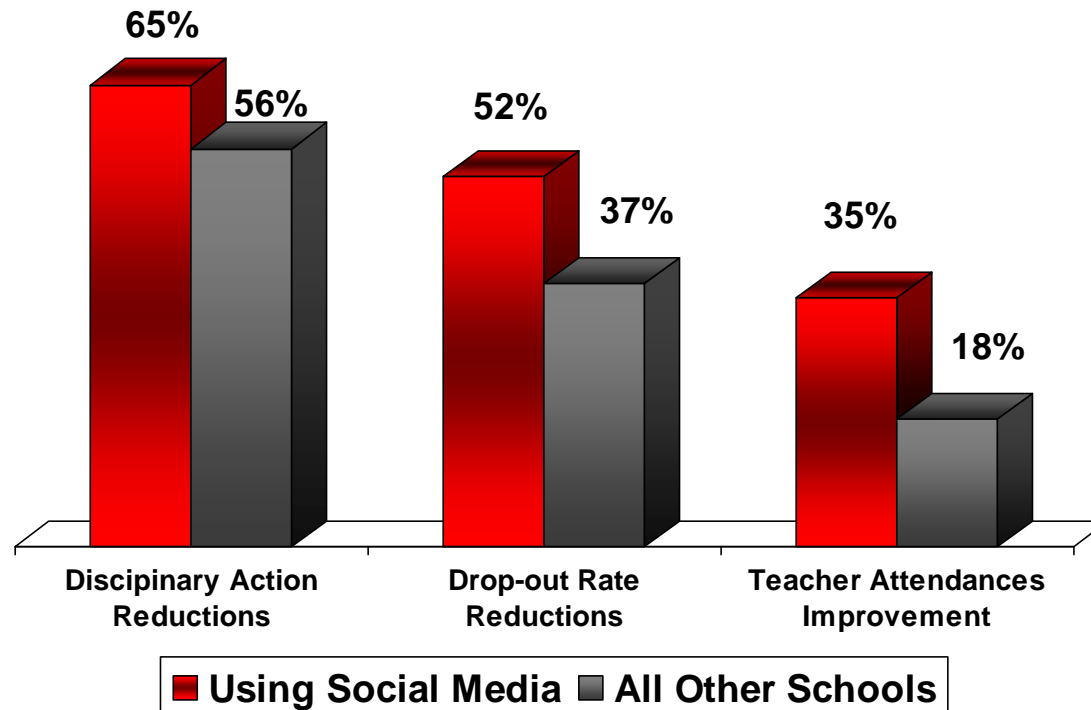
In the past, collaboration and study groups were generally limited to face-to-face interaction but with the advent of the Internet, students quickly adopted IM or “chat,” allowing for many new collaboration experiences.

Web 2.0 social media substantially enhance collaboration productivity, erasing the barriers of time, distance, and money. Collaboration can now extend beyond the immediate circle of friends to include mentors, tutors, and experts worldwide. Real-time collaboration increases student engagement, one of the critical components for student success.

Schools using Social Media

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Pct. of Respondents



Frequency of Technology Use is Important.

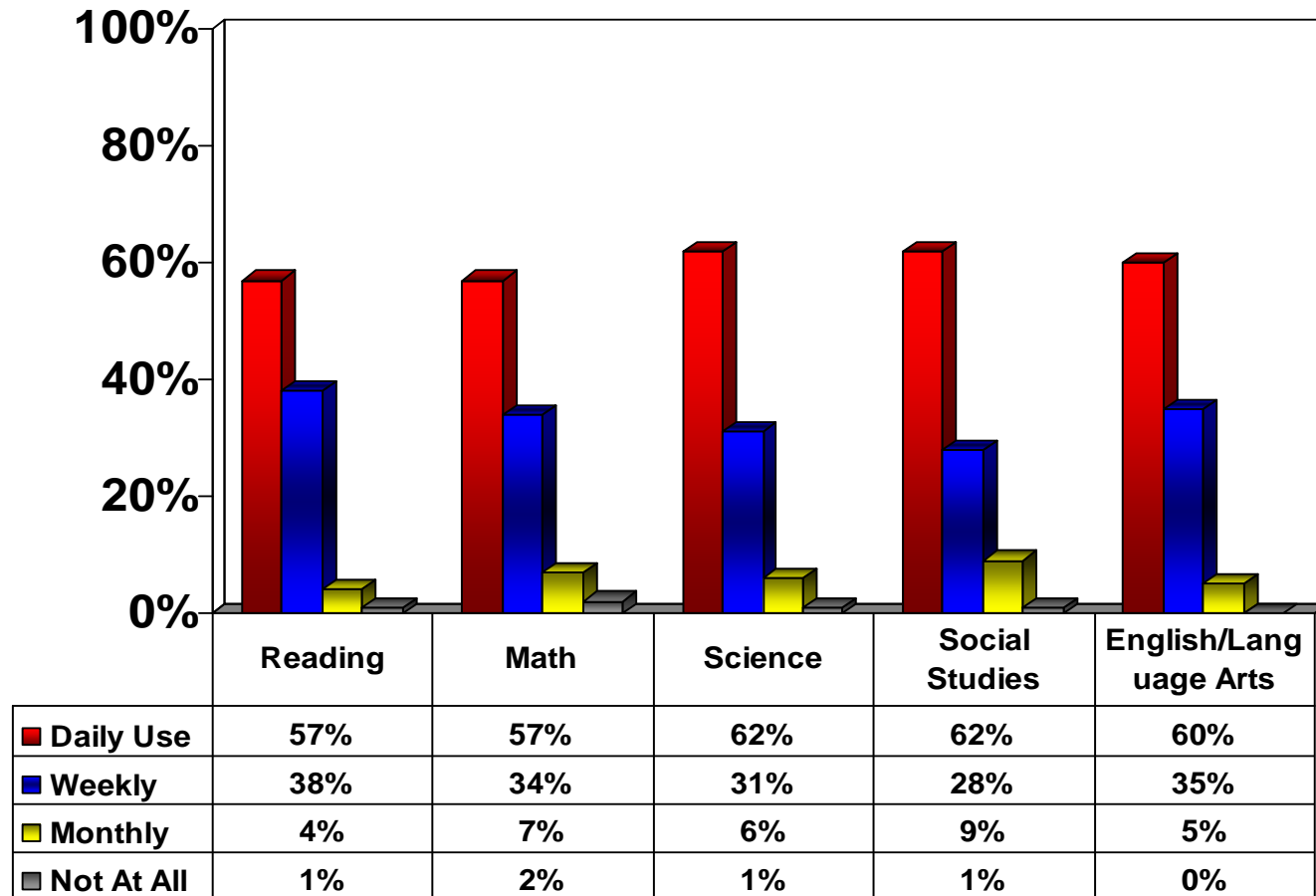
The daily use of technology in core classes correlates highly to desirable Education Success Measures. Daily technology use was one of the top five indicators of better discipline, better attendance, and increased college attendance.

In 1:1 schools, daily use in core curriculum classes ranged from 57% to 62%. Unfortunately many schools reported using the technology only weekly or less frequently for many classes.

Use of Digital Content: 1:1 Schools

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Pct. of 1:1 Respondents



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