

# DIGITAL LEADERSHIP DIVIDE

Without  
Visionary  
Leadership,  
Disparities  
in School  
Technology  
Budgets  
Increase







The Consortium for School Networking (CoSN), a national non-profit organization, is the premier voice in education technology leadership. Our mission is to advance the K–12 educational community’s capacity to use technology effectively to improve learning through advocacy, policy and leadership development. Our members represent school districts, state and local education agencies, nonprofits, companies and individuals who share our vision.

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## EXECUTIVE SUMMARY

A new survey of key decision makers in K-12 public schools reveals large and growing disparities in funding for school technology. These disturbing disparities signal a widening digital divide between the technology haves and have-nots in 21st century. Stagnant or declining technology budgets in many school districts threaten the real progress that schools have made over the past decade to improve their technology infrastructure, access and effectiveness for administrators, teachers and students.

Yet, with visionary educational leadership and strong community support, some school districts are bolstering their technology plans and budgets, according to findings from a nationwide, online survey of 455 technology decision makers in school districts.

With generous support from AT&T, Educational Testing Service and Microsoft, the Consortium for School Networking (CoSN) conducted the survey with Grunwald Associates, a leading market research firm specializing in technology. The survey is the first of a planned series of CoSN–Grunwald Associates surveys to monitor schools' technology spending and trends.

### POSITIVE ATTITUDES SPUR INVESTMENTS

Positive attitudes and strong commitment to technology are deciding factors in technology budgeting, the survey reveals. Schools that are committed to deepening the impact of technology are finding ways to raise or repurpose funds to maintain or increase their level of support for technology, even in difficult budgeting cycles. But schools that are less committed to using technology are falling behind — cutting budgets, reducing staff and forgoing the professional development that would enable educators to use technology more effectively.

We also explored the perceived benefits to technology use in schools — and discovered a surprising, widespread optimism that technology has the potential to make a profound difference in education. This sentiment is especially strong among the school leaders who already have witnessed the benefits of technology firsthand — those whose schools use technology the most.

### A WINDOW OF OPPORTUNITY

Currently, the survey reveals, schools are making excellent use of technology for administrative purposes, deploying networks and systems to become more efficient and productive. Where schools seem to lag, though, is in integrating technology into the classroom to improve teaching and learning. However, school leaders — especially those whose districts already use technology the most — seem poised for technology to take education to this next level of reengineering the classroom experience to meet 21st century expectations.

This is a window of opportunity for schools. Professional development is seen as the key to transforming teaching and learning, school leaders affirmed in the survey, as well as to using the data captured by technology to make better educational decisions. The good news is that school budgets may not be the biggest barrier to implementing comprehensive professional development. Instead, visionary leadership and community and parental support seem to drive change in the most technology-intensive schools. All schools can use the lessons learned from high-tech districts to build public support and participation in technology decision-making. The survey findings led us to recommend these approaches for schools to improve their use of technology to benefit students, teachers and administrators:

- Move from automating administrative practices to transforming teaching and learning.
- Invest in technology leadership.
- Create new professional development initiatives.
- Recruit the active support of parents and the community.

### ABOUT THE SURVEY

In March 2004, CoSN and Grunwald Associates conducted an online survey with 455 school district decision makers for technology, such as superintendents, assistant superintendents, directors of instructional technology, chief technology officers and administrators of management information systems. All of these decision makers:

- Work full-time as educators at the central administration for a district, and
- Influence decisions about instructional software, applications, hardware and other technology infrastructure.

Survey data were weighted by the districts' geographic location and size to ensure a representative sample.

### IS THERE A PARTICULAR PROJECT THAT HAS BEEN POSTPONED OR CANCELED DUE TO TECHNOLOGY BUDGET CUTS?

Here are some responses to this question.

- “The upgrade program has been canceled.”
- “Our hardware replacement cycle has been significantly impacted. We are now replacing computers on a seven- to eight-year cycle rather than the five-year cycle we prefer.”
- “Professional development training for teachers”
- “Online tutoring”
- “Our keyboarding program for 4th grade students”
- “Our Instructional Technology Specialist positions have been cut from 27 positions in 2000 to 9 positions in 2003. We have 107 schools.”
- “Purchasing new desktop and laptop computers”
- “A student/staff/community portal project”
- “Our computers are old and were to be refreshed several years ago. It has not happened.”
- “Wireless laptops/computers in the classroom for core instruction”
- “Design and implementation of a more cost effective and efficient telephone system. Significant progress in integration of technology into the curriculum.”
- “We are starting no new initiatives whatsoever because of this.”
- “Purchase of 250 new computers”
- “A distance learning initiative”
- “Yes. Parent access to student information system. Establishment of a hardware replacement cycle. Reduced training classes for teachers, administrators and support staff.”
- “We are in maintenance mode. New projects requiring large capital outlays are not being considered.”
- “Improving the bandwidth on the wide area network and bandwidth in LANs in 42 schools.”

## LOSING GROUND IN TECHNOLOGY SPENDING

Nearly half (48 percent) of all school leaders surveyed cite long-term planning and budgeting issues as a key challenge to technology use. Cumulatively, technology budgets have been stuck in neutral for the last three years, with school leaders in more than six in 10 districts (62 percent) reporting that their technology budgets have remained unchanged or decreased. More school leaders report budget increases (38 percent) than decreases (33 percent). On the other hand, more school leaders report “significant decreases” (18 percent) than “significant increases” (14 percent) in budget outlays.

Flat or unpredictable spending on technology is tantamount to losing ground. Schools, like other organizations, must continue to maintain, upgrade and invest in technology to make the most effective use of it. With increasingly powerful technologies available to them, schools need predictable budgets to keep their equipment up to date and useful to students, teachers and administrators for today and tomorrow — not for yesterday.

The laggards in technology spending may not be preparing their students well enough for the technology-saturated world they face in higher education, the workplace and daily life today. Without a doubt, increasing numbers of students have access to computers, cell phones, digital cameras, wireless devices and other technologies at home. Schools have a critical responsibility to provide all students with the opportunity to use technology to learn important life skills.

### DISTURBING DISPARITIES BETWEEN LEADERS AND LAGGARDS

There are disturbing disparities in technology spending among districts, with astonishing differences that may have serious consequences for the technology leaders and laggards in the future.

Districts whose technology budgets have increased over the past three years spend almost twice as much per student every year on technology as districts whose technology budgets have declined over the same period. Differences in expectations between these two groups may foreshadow even greater digital divides to come. School leaders whose budgets have increased over the past three years are the most optimistic that their budgets will continue to increase. Fifty-six percent of these survey respondents believe their districts’ technology budgets will increase going forward, compared to 17 percent of school leaders whose budgets have declined.

Despite the budget concerns about technology, however, the vast majority of school districts do not make any kind of return-on-investment (ROI) calculations to evaluate the effectiveness of technology purchases. Two-thirds (66 percent) of districts do not consider or use ROI calculations when they buy or evaluate technology. Ironically, school leaders in high-tech districts (43 percent) are the most likely to look for a return on their investments. School leaders say districts in the South (40 percent) and large districts (39 percent) also are relatively likely to make formal ROI calculations.

School leaders in one of five districts (20 percent) say their districts use student test scores as a basis for calculating ROI, while at least one in six report that their districts use more traditional economic indices such as teacher efficiencies (16 percent) or cost reduction (15 percent). Again, high-tech districts (27 percent) and districts in the South (26 percent) are the most likely to hold technology accountable for student test scores. High-tech districts (23 percent), districts with increasing technology budgets (22 percent) and districts in the South (21 percent) are the most likely to measure ROI in terms of time saved for teachers. The nation’s largest districts are the most likely to consider their technology investment effective if it simply helps them reduce costs (23 percent) or improve student attendance (13 percent).

Although relatively few districts make formal ROI calculations, more than four in 10 school leaders (43 percent) consider the total cost of ownership (TCO), such as technical support, maintenance and upgrading, important in evaluating technology. Again, school leaders in districts in the South (53 percent) and high-tech districts (52 percent) are more likely than their peers to track TCO. School leaders in large districts (49 percent) and suburban districts (48 percent) also appear relatively concerned about this measure of technology costs.



### TECHNOLOGY BUDGETS STUCK IN NEUTRAL

*Percentage of school leaders who report that their districts' technology budgets have increased, decreased or stayed the same over the past three years.* Source: Grunwald Associates

## POSITIVE ATTITUDES MITIGATE BUDGET THREATS

A startling finding that pervades our survey results is the differences in attitudes about technology and the effect that attitudes have on technology purchases and use. Where there's a will to deepen schools' commitment to technology, there seems to be a way — and this seems to be more important than funding. This presents an enormous opportunity for schools to build understanding and support for technology both in the community and among educators themselves.

A majority of school leaders believe that their communities are more supportive of technology purchases for classroom use than they were three years ago — a good sign that the public increasingly understands that students need to be able to use technology during regular classroom activities. Three times as many school leaders (53 percent) say their communities are more willing to dedicate resources in this area than say they are less willing (18 percent).

Community attitudes toward technology seem to yield results in the bottom line of technology budgets. School leaders whose district budgets for classroom technology increased over the past three years are particularly likely to cite strongly supportive communities (70 percent). By contrast, school leaders whose district budgets for classroom technology have decreased over the past three years are the least likely to cite strongly supportive communities (38 percent).

Likewise, 40 percent of school leaders report that parent groups in their districts are more supportive of school purchases outside the school budget than three years ago, compared to 13 percent who say parent groups are less supportive. Again, the districts that have experienced increases in their technology budgets are most likely to report increased support from parent groups. These survey findings indicate a clear connection between community support and spending on classroom technology.

There is a similar, albeit weaker, correlation between community support and technology budgets for administrative

purposes. More than twice as many school leaders say their communities are more willing to dedicate resources in this area (42 percent) than say they are less willing (20 percent). School leaders whose districts have experienced recent budget increases for administrative technology and districts in the South are particularly likely to cite community support in this area.

Again, school leaders whose districts have

experienced budget declines for administrative technology are the most likely to say that community support has declined as well. Moreover, as noted on right sidebar (What Happens When Budgets Are Cut?), some districts face technology budget cuts not by putting their plans on hold, but by repurposing other funds or even going out into the community to raise the funds they need. While this tack clearly is not an optimum long-term strategy, it can mitigate funding shortfalls in lean budget years. High-tech districts, which already are committed to technology and are likely to track their return on investments, are among the most likely to try these alternate funding avenues. These districts can, perhaps, make the best case to their communities for continued support of technology.

### A TOOL FOR MEASURING TOTAL COST OF OWNERSHIP

*The Consortium for School Networking has developed an online tool for school districts interested in measuring the Total Cost of Ownership (TCO) of technology. The tool is available on our Web site, [www.cosn.org](http://www.cosn.org).*

### VISIONARY LEADERSHIP SUSTAINS TECHNOLOGY GAINS

Meanwhile, school leaders report that district technology leaders have by far the most influential voice in district technology decisions. Ninety-three percent of survey respondents report that district technology leaders have high levels of influence, compared to the superintendents (75 percent) and assistant superintendents (50 percent), the only other groups cited by as many as half of the respondents.

However, in high-tech districts and in districts where technology budgets are increasing, school leaders report that a wide variety of people are heavily involved in decision making as well. School leaders in

### WHAT HAPPENS WHEN BUDGETS ARE CUT?

*Districts facing technology budget cuts have responded primarily by cutting back on equipment and supplies or postponing exploration of new hardware. They aren't likely to tap into reserves or engage in fundraising — with some key exceptions.*

*Eight in 10 school leaders whose districts have experienced declining technology budgets (80 percent) cut back on equipment and supplies. More than six in 10 (63 percent) say budget cuts have made them less likely to explore laptop programs — a marker, we believe, for disinvestment in innovative technologies under budget strains.*

*Nearly half (49 percent) of school leaders also report cutting staff in response to declining technology budgets. Seventy-three percent of school leaders in districts in the West, 67 percent in the poorest districts, 63 percent in large districts and 59 percent in urban districts report staff cuts because of technology budget decreases.*

*By contrast, only about three in 10 (29 percent) report that their districts tapped into reserves in response to technology budget cuts, while only 14 percent report engaging in new fundraising. Not surprisingly, school leaders in wealthy districts (26 percent) and high-tech districts are the most likely to engage in new fundraising in the face of budget cuts. However, nearly four in 10 (39 percent) of all districts have mitigated losses by repurposing other funds.*

### CUTTING BACK ON ESSENTIALS

80%—Cut back on equipment and supplies

63%—Postponed laptop programs

49%—Cut staff

**Percentage of district leaders who report these responses to declining technology budgets in the past three years** Source:

Grunwald Associates

high-tech districts are significantly more likely than low-tech districts to report that school boards (56 percent in high-tech districts compared to 45 percent in low-tech districts), classroom teachers (34 percent to 22 percent), the community (20 percent to 11 percent) and parents (20 percent to 8 percent) have high degrees of influence over technology decisions.

Further, school leaders in districts whose technology budgets have increased are significantly more likely than those in districts whose technology budgets have decreased to report high levels of influence on the part of superintendents (83 percent to 64 percent), assistant superintendents (57 percent in districts with increasing budgets compared to 40 percent in districts with decreasing budgets), school boards (60 percent to 36 percent), curriculum directors (54 percent to 42 percent) and assessment directors (28 percent to 18 percent).

These survey results strongly indicate that it takes school and community support, broad consensus and a shared vision to sustain funding for technology in schools. Yet more than a third of the school leaders surveyed from large districts (37 percent) report problems with district leadership viewing technology as an add-on rather than as essential to instruction. Nearly half of these school leaders from large districts (45 percent) also say a lack of technology understanding on the part of other district leaders they deal with poses a significant challenge.

In that light, it may not be surprising that school leaders surveyed widely identify leadership and vision (85 percent) as well as communication skills (51 percent) as key attributes for their profession. School leaders in high-tech districts (61 percent) and in districts whose technology budgets are increasing (58 percent) are especially likely to cite communications skills as paramount.

Indeed, school leaders view technical skills as far less important. Many more school leaders cite planning and budgeting skills (48 percent) and team building and staffing skills (39 percent) as key attributes than cite any form of technical proficiency. School leaders in large districts (48 percent) and poor districts (54 percent) are especially likely to see team-building and staffing skills as critical to the success of district technology leaders. Only about one in four (27 percent) identify education and training as key to success for district technology leaders. Only one in five (20 percent) cites systems management skills and only one in seven (14 percent) cites information management skills.

## BENEFITS, CHALLENGES HIGHLIGHT TECHNOLOGY NEEDS

Most school leaders believe that technology provides their schools with a wide variety of benefits, especially on the administrative side. Indeed, school leaders see technology mainly as a tool to improve productivity and efficiency: 74 percent say technology provides timely data for decision making; 71 percent say it improves support staff efficiency; 71 percent say it increases administrators' productivity; 70 percent say it improves communications among parents, teachers and the community; and 61 percent say it increases teacher productivity.

### QUICK GUIDE TO DISTRICT CHARACTERISTICS IN THIS SURVEY REPORT

*Poorest Districts — Districts with 75 percent or more of students receiving free or reduced-price lunches*

*Poor Districts — Districts with between 50 percent and 75 percent of students receiving free or reduced-price lunches*

*Middle-class Districts — Districts with 25 percent to 49 percent of students receiving free or reduced-price lunches*

*Wealthy Districts — Districts with fewer than 25 percent of students receiving free or reduced-price lunches*

*High-tech Districts — Districts that describe themselves as tech leaders rather than followers and tend to report above average student-to-computer ratios, teacher technology skills and/or classrooms with wireless Internet access*

*Low-tech Districts — Districts that describe themselves as tech followers rather than leaders and tend to report below average student-to-computer ratios, teacher technology skills and/or classrooms with wireless Internet access*

School leaders do, however, also cite important benefits from technology that affect student learning. More than two-thirds believe that technology motivates students (68 percent) and provides them with important life skills (67 percent). Smaller but majority percentages of school leaders believe technology levels the playing field for students in a variety of ways, including addressing the needs of disabled students (60 percent), helping educators individualize instruction (52 percent) and promoting academic equity (51 percent).

By contrast, school leaders in only four out of 10 districts (41 percent) believe technology helps raise student test scores. Leaders in key groups of schools do believe technology plays this focal role, including 50 percent of the poorest school districts, 50 percent in the South and 46 percent in districts where technology budgets are increasing.

Once again, regional differences surface with respect to perceived technology benefits. In general, school leaders in the South express stronger faith than their peers in other regions that technology is beneficial to their districts.

School leaders in nearly eight out of 10 districts (78 percent) also say they use data captured by technology to drive decision-making, including nearly nine out of 10 (89 percent) of large districts. Districts in the South (83 percent) are especially likely to use data-driven decision-making. Wealthy districts are somewhat less likely than poor districts to use data to make decisions —perhaps because they are under less pressure to improve test scores.

Half of school leaders (50 percent) cite lack of training as the most serious barrier to more effective data-driven decision-making. Lack of training is a particularly serious problem in the poorest school districts, according to 63 percent of school leaders in these districts, as well as in rural districts (55 percent) and low-tech districts (55 percent). More than half of school leaders in very poor districts (51 percent) also report that an

absence of clear priorities has been a significant challenge. Thirty-nine percent of all school leaders also say a lack of understanding about what to do with the data is a key challenge.

More than a third of school leaders cite other barriers to data-driven decision-making, including incompatibility of computer systems (42 percent), lack of data collection priorities (36 percent) and/or lack of uniformity in data collections (35 percent). At least one in five school leaders also say outdated technology (31 percent), inaccurate or incomplete data (24 percent), timing issues (24 percent) and/or user interface problems (22 percent) prevent them from using data effectively.

## THE KEY CHALLENGE: PEOPLE, NOT EQUIPMENT

The key technology challenge schools face is integrating it into classroom teaching and learning. More than half of survey respondents (56 percent) identify integrating technology into the classroom or learning experience as their top technology challenge. The same percentage (56 percent) also cites teacher professional development as their top challenge, another way of looking at the main impediment to effective use of technology — people with inadequate training. Only 1 percent of all school leaders say technology integration is no problem at all, while only 2 percent say inadequate professional development creates no barriers.

Fewer than one in 10 school leaders (7 percent) consider their teachers' skills at integrating technology into the learning experience to be "very good" or better. Overall, school leaders give their teachers a failing grade (5.3 out of 10) on this measure of professional competence. Even in districts with seeming advantages, teachers' skills remain the Achilles heel. Only 16 percent of school leaders in high-tech districts — those with the most technology equipment and highest reported use of technology — give their teachers high marks in this area. Only 15 percent of school leaders in small districts and only 13 percent of school leaders in

### COMMUNITY SUPPORT MAKES A DIFFERENCE

70%—Percentage of school leaders whose budgets for classroom technology have increased who cite strong community support

38%—Percentage of school leaders whose budgets for classroom technology have decreased who cite strong community support

Source: Grunwald Associates

### TOOLS FOR DATA-DRIVEN DECISION MAKING

*CoSN's initiative, Data-driven Decision Making: Vision to Know and Do, provides district leaders with the tools necessary to use data effectively in continuous school improvement. Further information is available on our Web site: [www.3d2know.org](http://www.3d2know.org).*

## STRONG PERCEIVED BENEFITS OF TECHNOLOGY IN SCHOOLS

74%—Provides timely data for decision making

71%—Improves support staff efficiency

71%—Increases administrator productivity

70%—Improves communications among parents, teachers and the community

68%—Motivates students

67%—Provides students with important life skills

61%—Increases teacher productivity

60%—Addresses the needs of disabled students

52%—Helps educators individualize instruction

51%—Promotes academic equity

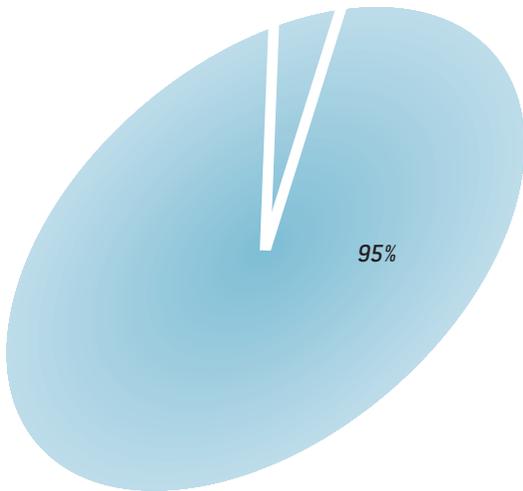
41%—Helps raise test scores

**Percentage of school leaders who strongly agree that technology provides these benefits.** Source: Grunwald Associates

wealthy districts rate their teachers highly in integrating technology into classroom teaching and learning. The need for professional development cuts across districts nationwide.

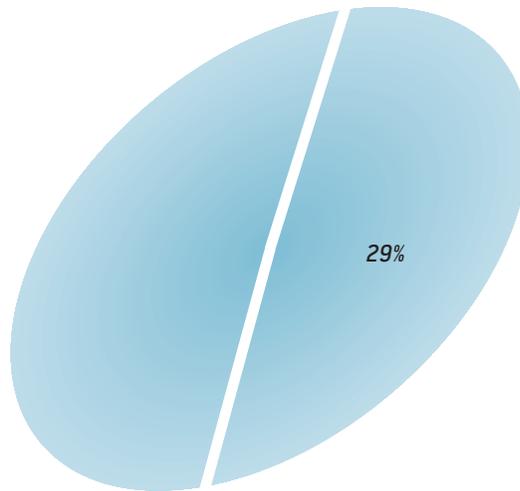
Integrating technology into classroom teaching and learning is especially problematic for the poorest school districts; 64 percent of school leaders in these districts cite technology integration as their top challenge. Similarly, 61 percent of school leaders in low-tech districts cite technology integration as problematic.

Another frequently cited barrier to technology use in schools also amounts to a people problem — the lack of technical support, including hardware maintenance, updating and upgrading. This is a particularly acute problem for the nation's poorest and largest school districts; 66 percent of school leaders in the poorest districts and 56 percent of those in the largest districts point to lack of technical support as a key challenge.



## A MISMATCH BETWEEN CLASSROOM ACCESS, STUDENT USE OF INTERNET

**Percentage of classrooms nationwide that school leaders report have high-speed Internet access**



**Percentage of school leaders who report that classrooms are the leading point of Internet access for students.** Source: Grunwald Associates

### IS TECHNOLOGY AVAILABLE TO STUDENTS?

Ninety-five percent of all classrooms nationwide now have high-speed Internet access, according to school leaders. Moreover, more than six in 10 (62 percent) report that every classroom in their district has broadband access to the Internet. Rural districts tie wealthy districts as the most thoroughly broadband-enabled demographics, with school leaders in these districts each reporting that 98 percent of their classrooms have broadband access. The schools least likely to have broadband access are those in large, urban and very poor districts — but even in these districts, school leaders report that as many as 93 percent of classrooms have broadband access.

Further, wireless Internet connections are an emerging trend in school technology access. More than one in five classrooms (21 percent) have wireless Internet connections, school leaders report, including more than a third (37 percent) in high-tech districts, more than a quarter (29 percent) in the Northeast, in small districts (27 percent) and wealthy districts (26 percent).

Despite this reported prevalence of computers and widespread, high-powered Internet access, however, more than half of school leaders (57 percent) say classrooms are the least likely points of Internet access for students in their schools. Instead, computer labs and media centers remain the major Internet access points for students. Nearly half of school leaders (47 percent) say students most often access the Internet in computer labs. Media centers are the second most common points of access, according to 49 percent of school leaders. Only about three in 10 of school leaders (29 percent) report that classrooms are the leading point of Internet access for students.

Surprisingly, school leaders in the poorest districts (42 percent) are the most likely to say classrooms are the most frequent point of Internet access, with relatively high proportions of school leaders in high-tech districts (37 percent) and districts in the South (34 percent) also reporting high degrees of classroom computer penetration. Districts in the West, large districts and urban districts have relatively poor student-to-computer ratios — and there are no significant differences in these ratios by district socioeconomic status.

These findings beg the question: Who is benefiting from the reported classroom computing power and speed? If most students have to go to computer labs and media centers to get online, Internet access does not seem to be an easy or everyday activity — underscoring the finding that schools have yet to fully integrate technology with classroom teaching and learning. The findings suggest that classroom technology is either widely underused or in need of maintenance, upgrading, expansion or replacement.

## RECOMMENDATIONS

Clearly, our survey of school leaders evoked strong sentiments about the perceived benefits of technology as well as strong concerns about the budgeting barriers to its effective use, both in classrooms and in administrative offices. The findings also indicate that educators' attitudes and community support can make the difference between increasing schools' technology budgets and losing ground.

Based on the survey findings, CoSN offers these recommendations for educators to improve results in the next frontier in technology use — integrating technology effectively with teaching and learning:

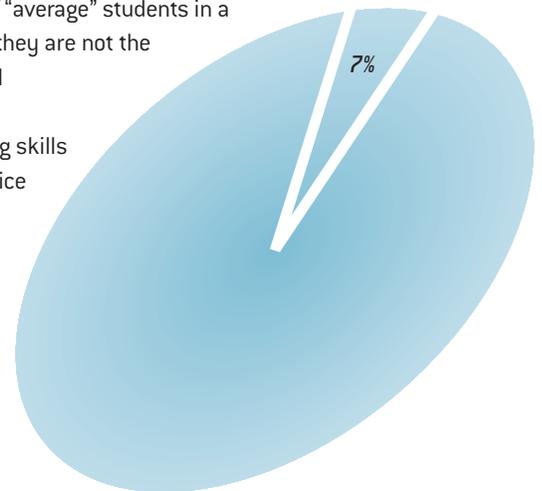
- Move from automating administrative practices to transforming teaching and learning.** Schools are at the tip of the iceberg in using data to drive decision-making. The challenge — and the opportunity — today is to manage the information that technology captures and channel it effectively to transform teaching and learning. Led by their chief technology officers, school districts should follow the lead of businesses and other intensive users of technology to realize more substantive gains from the technology they already have.

In the 1980s and early 1990s, investments in technology had not yet resulted in dramatic improvements in core business operations. In fact, technology actually proved to be a drain on productivity because it was layered on top of existing business processes. What changed by the late 1990s is that businesses and other organizations learned to use technology to reengineer key business functions. Retailers, for example, now rely on technology to monitor supplies and track purchases in real time, which enables them to customize their products, respond quickly to customer demand, and increase productivity and profits. Companies like Amazon.com use technology to customize product offerings that meet the specific needs/interests of the individual customer.

While schools have different goals and face different challenges, of course, they can use the lessons learned from early users of technology to improve their core mission — enhancing learning. Perhaps the most promising and powerful application of technology in education is the delivery of personalized instruction. We are only beginning to glimpse how technology can enable educators to assess students' knowledge and skills continually and get results immediately. Educators can use this data to customize instruction to meet the individual needs of every student, rather than the generic needs of “average” students in a classroom. While individual education plans are common for students with special needs, they are not the norm for most students. Technology could make this feasible so that the best instructional strategy is deployed for each child.

For example, teachers of young elementary students can monitor students' decoding skills in reading using computer software, then provide targeted instruction and additional practice to bolster the skills of students who have difficulty cracking the print–sound code, then reassess students to track progress. Technology enables schools to accelerate this cycle of continuous improvement. In addition, technology can be an effective tool for differentiating instruction for classrooms of students who learn in very different ways, including visual, spatial and kinetic learners.

- Invest in technology leadership.** School superintendents, district administrators and school boards need to understand that technology can dramatically reshape and improve not just administrative functions, but the teaching and learning experience in every classroom.



### TEACHER SKILLS IN TECHNOLOGY LACKING

**Only 7 percent of school leaders nationwide rates teachers in their districts as “very good” or better at integrating technology into the learning experience.** Source: Grunwald Associates

To create and sustain a vision for integrating technology into the enterprise of learning, large school districts should create a senior, full-time position for chief technology officer. This person should be deeply involved in district leadership, working as a senior member of the superintendent's team of key advisors to infuse technology into the district's educational vision, goals and strategies.

This will require a shift in focus for most school districts, which now relegate technology matters to a stand-alone department — often staffed by a part-time director of technology, whose main responsibility is managing equipment purchases and repairs. Smaller school districts should explore the possibility of pooling their resources and sharing the services of a chief technology officer. Investing in technology leadership will foster a strong, team effort to support deeper and more effective use of technology in classrooms.

■ **Create new professional development initiatives.** Federal, state and regional education agencies and school districts can and must address the “failing grades” for educators in technology integration revealed in our survey by providing adequate professional development for teachers and administrators. Unfunded mandates are not enough. Every school district in the country should schedule routine technology workshops to continue the learning process for educators.

This is the next big milestone on the path to effective use of technology to improve teaching and learning. Clearly, as our survey findings show, school leaders overwhelmingly recognize that teachers need support in learning to integrate technology seamlessly into their classroom practices. Likewise, superintendents, principals and other administrators need an increased understanding of how technology can be wisely applied in school settings. Now is the time for school districts to make this a priority.

Professional development should be a major part of technology budgets. We support the call by most experts who recommend that up to 30 percent of technology budgets should be allocated to professional development. In addition, all professional development in every academic discipline should incorporate training in effective use of technology to meet academic goals and improve student achievement.

At the federal level, we urge Congress and the Administration to renew their commitment to training teachers to use technology and integrate it into their classrooms by providing full funding (\$1 billion annually) for the the Enhancing Education Through Technology program; reauthorizing and funding the Preparing Tomorrow's Teachers to Use Technology program to ensure that pre-service teachers receive appropriate technology training before they begin their teaching careers; and enacting new programs within the Individuals with Disabilities Education Act that will allow teachers to receive training in using assistive and universally designed technologies.

■ **Recruit the active support of parents and the community.** School districts have proven they can succeed — despite budgetary constraints — when they tap into their communities to build understanding and support for technology spending and use. Parent and community support can be the make-or-break factor in moving schools forward in using technology effectively. Parents and community members can be critical advocates and experts in helping schools develop a vision and implement strategies for technology spending and use. Schools should not only make sure that parents and community members are active in technology planning, but also play an active role in determining the budget priorities for the district in technology.

School districts must be aggressive in seeking the support and collaboration of outside partners, such as businesses, professional groups, parent and community organizations, and after-school providers, to create an environment for better access and effective use of technology. Educators can learn from these outside groups — and they all can work together to strengthen technology use with programs in schools and in the community.

Further, school districts should create opportunities for the community to benefit from the technology available in schools. Parents and families who have no access to technology at home should be able to use technology after school hours. Schools alone cannot solve the enormous issues of equity that pervade education. However, they can do their part in helping to close the widening digital divide.

## ACKNOWLEDGMENTS

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