

2008 Survey: The Unique Challenges Facing the IT Professional in K-12 Education

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A research survey and report conducted by:

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Table of Contents:

Introduction	Page 2
Key Findings	Page 3
Summary Demographics	Pages 4-5
Staffing Levels	Pages 6-12
Staffing Issues	Pages 13-16
IT Assets	Pages 17-21
Software and Systems	Pages 22-24
Software as a Service (SaaS)	Pages 25-28
IT Funding	Page 29
Strategic IT Issues	Pages 30-31
Conclusions	Page 32
Survey Methodology	Page 33
Demographics	Pages 33-36
Notes and References	Pages 37-40

The Unique Challenges Facing the IT Professional in K-12 Education

As an information technology professional in K-12 education, you have quite a challenge...possibly one of the greatest challenges since the first computers were introduced to your schools. You are forced to manage this growing phenomenon of too much IT staff without enough staff. Budget constraints, changing technology and board requirements impact the abilities of school IT staff.

The evidence is sobering:

- Nearly \$2.25 billion is spent annually on e-Rate, and this multi-year investment has resulted in exponential growth in the IT infrastructure asset base in schools. The program does not provide any additional funding to increase personnel to help with these new infrastructure and asset demands.
- The advancement of 1:1 computing as a “gold standard” in public education is another noble initiative, and this will continue to dramatically expand this asset base that the IT staff must manage. Institutions that pursue a 1:1 computing initiative, without addressing the need for additional personnel and funding to manage and maintain the new assets, could see the IT staffing crisis exacerbated by four times.
- The condition of the technology infrastructure is crucial to student-based outcome and performance, affects teacher retention and impacts the requirements set forth in NCLB. More so than ever, the technology infrastructure is inextricably coupled to the learning environment and has become mission critical.

Technology has helped fuel this crisis, but a multifaceted approach can help stem it. Many administrators who have faced this dilemma have successfully executed a four-step plan, which includes:

1. Improving the image and professionalism of IT operations

It is important to build a business process for your IT operations that improves communication, incorporates good process and feedback mechanisms, and clearly defines service level expectations.

2. Establishing a respected methodology

Your methodologies for IT capital renewal, software license compliance, help desk prioritization and other aspects to your operation must be communicated and be based on sound methodologies.

3. Educating the decision maker

The administration may not be engaged in your daily process. It is your responsibility to use data driven decision making to build a clear understanding of demand, capabilities and shortfalls. A proven business process coupled with reliable data will showcase: (1) staffing levels; (2) areas of highest demand; (3) recurring problems; (4) staff productivity relative to demand; (5) how the district compares to service standards outside education; (6) how your district benchmarks against peer districts.

4. Asking for additional resources

With a professional image, business process and data, the time is right to ask for additional resources.

We hope this research report is the first tool you can use to improve your process and educate decision-makers.

Sincerely,

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Key Findings

K-12 Information Technology departments continue to face many challenges. Key findings of the survey include:

K-12 Staff Levels

- Mean number of computers per technician is 612
- Mean ratio of students to technicians is 1,934:1
- Mean ratio of students to all technical support staff is 1,021:1
- Mean ratio of students per total IT staff is 491:1
- Close to half do not have any IT staff with the responsibilities of help desk managers, LAN or WAN engineers.
- When asked about additional FTE needs, the most common areas were for instructional technology staff, technicians and web specialists.

Staffing Issues

- 72% do not have enough staff to integrate technology into classroom instruction. This is an increase from 2007 when 65% reported that they do not have enough staff for this critical function.
- 71% do not have enough staff to implement new technologies. 69% feel their staffing level does not allow them to effectively support the needs of the district/school.
- 55% reported that 50-100% of their department's workload is spent reacting to technical problems.
- Fewer schools/districts are outsourcing IT staff this year compared to 2007. However, it is still a common practice with half of the participants reporting that some of its IT staff is outsourced.

Computer Assets

- The majority of respondents indicated that compared to last year, the number of computers increased but their IT staffing level stayed the same.
- Indicating a possible shift in the historical upward trend of computer purchases, one quarter of the respondents (26%) reported the number of computers in their school system stayed the same compared to last year.

Software and Systems

- 51% have a functioning software-based help desk.
- 41% have a functioning software-based IT asset management system.
- 38% have implemented and use a secure remote access system.
- Most (81%) have fully-implemented an enterprise level anti-virus solution.
- Just over half (55%) have fully implemented a web content management system.
- 37% have fully implemented a faculty intranet.
- Almost half (45%) have a fully-implemented student/teacher/parent portal.
- 47% use at least one Software as a Service (SaaS) application. Ease of deployment (cited by 72%) and the fact that these applications require less technical support (selected by 65%) remain the two most compelling reasons for adopting this type of application.
- Of those using a SaaS application, data security was seen as the biggest challenge (72%).

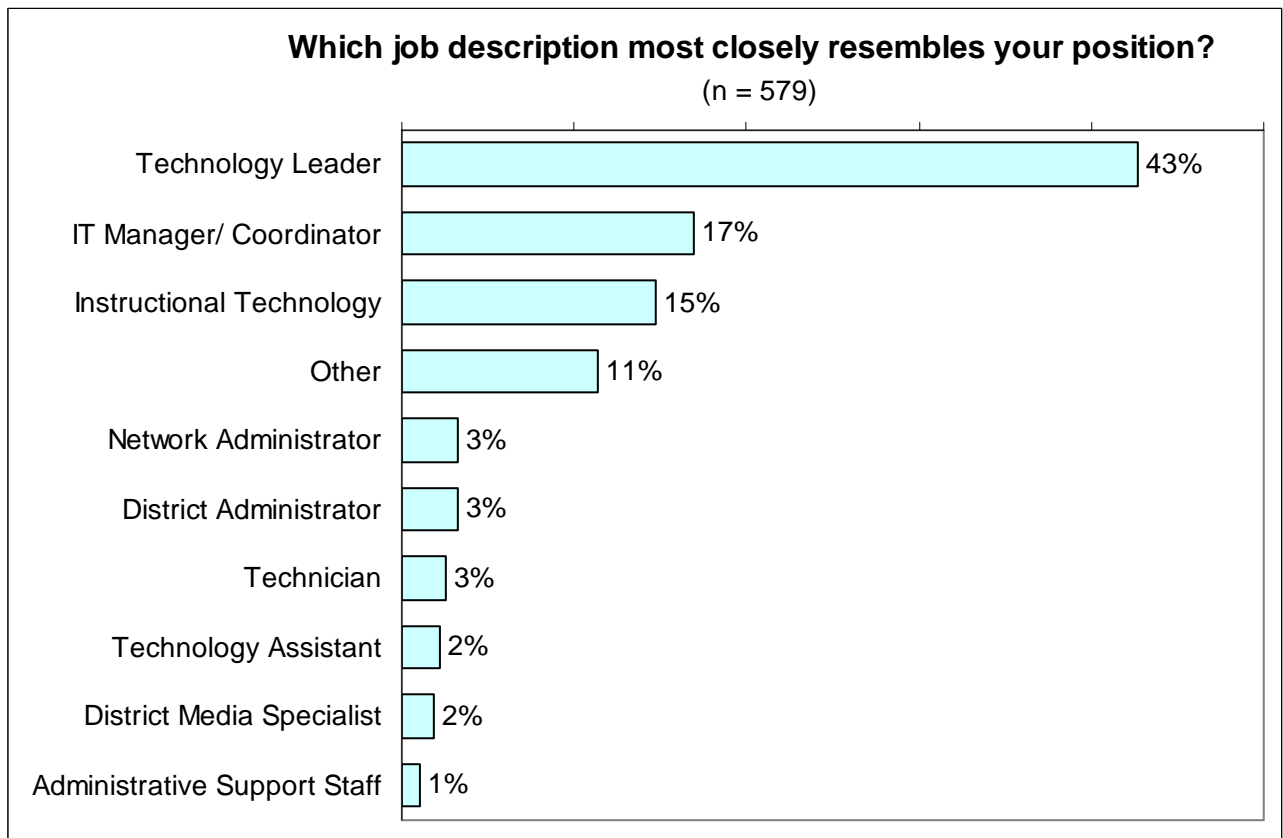
IT Funding

- Three quarters of the survey participants reported that the IT budget was less than they needed in order to meet the overall expectations of the school board/district leaders.
- 67% felt that their IT budget was less than they needed to support existing computer assets.
- 72% felt that not enough financial resources were allocated to invest in new computer assets to meet state requirements.
- As in 2007, IT funding was identified as the most important issue to resolve for strategic success in 2008.

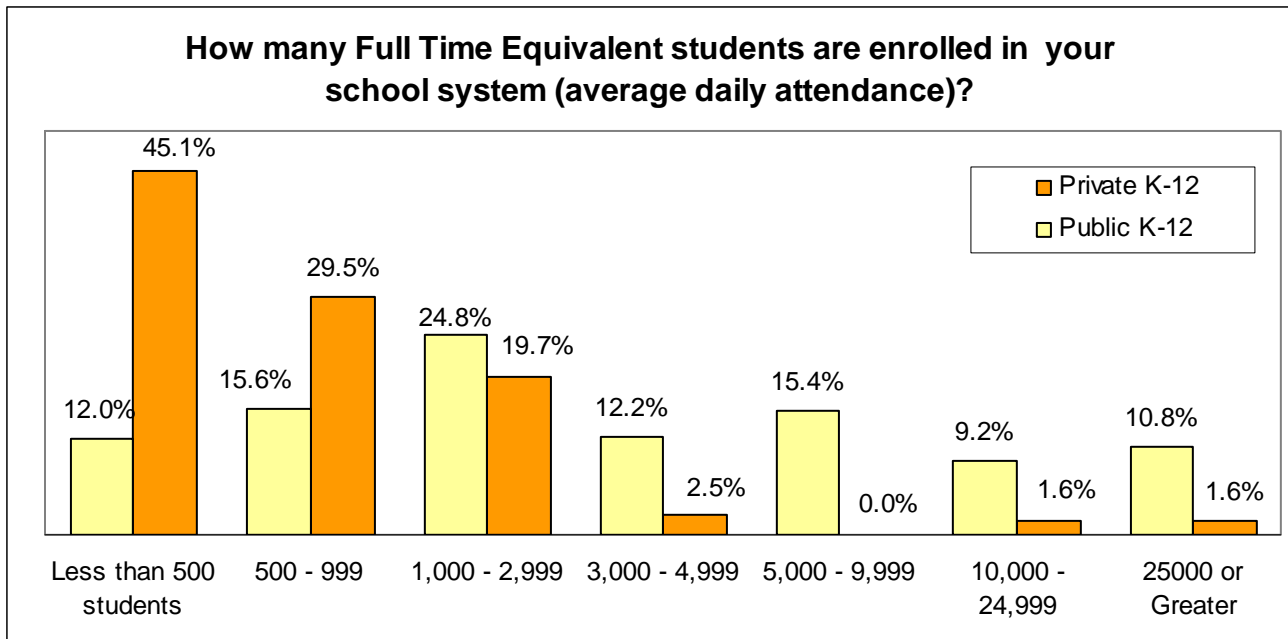
Summary Demographics

585 respondents completed the 2008 survey. Almost half (43%) identified themselves as the primary technology decision-maker in their organization.

Answer Options	Count
Technology Leader	247
IT Manager/Coordinator	98
Instructional Technology	85
District Media Specialist	11
Technician	15
Technology Assistant	13
Network Administrator	19
District Administrator	19
Administrative Support Staff	6
Other	66
answered question	579



Almost two thirds (62%) of the educational organizations that responded to the survey have fewer than 3,000 students enrolled. Almost half (45%) of the private schools who participated in the survey have less than 500 students.



Staffing Levels

One of the key elements this survey seeks to quantify is the number and types of IT staff. Given that job titles and responsibilities can vary widely among schools, it can be difficult to group IT positions for comparison purposes. Two people at different schools can have the same responsibilities but different titles. Add to the mix the issue that one staff person is likely to have multiple responsibilities and a variety of skill sets, and it becomes increasingly difficult to segment these job descriptions.

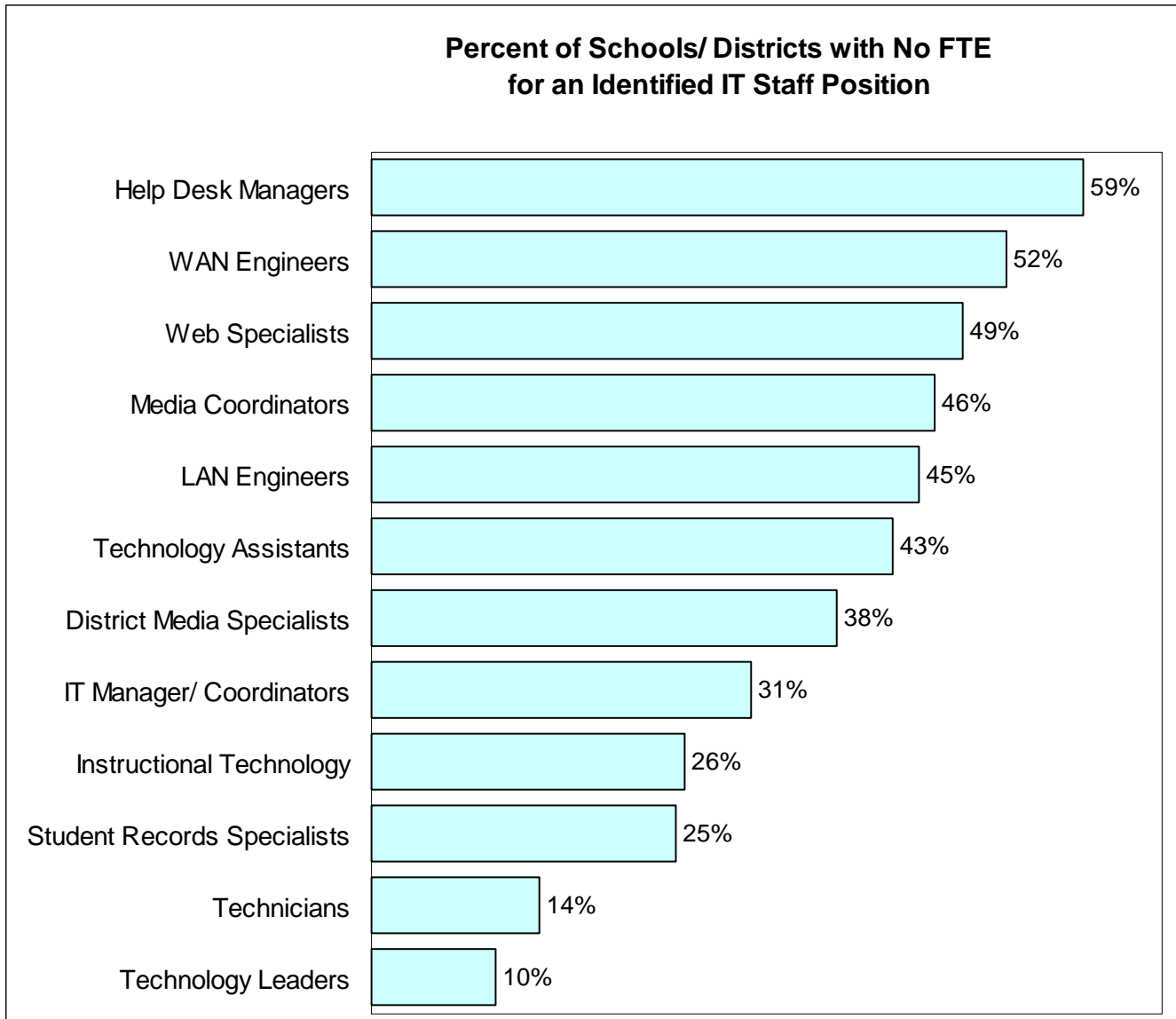
Building upon job classifications identified in the 2007 survey, 12 IT positions were pinpointed and the following job descriptions were defined.

Job Descriptions:

- **Technology Leaders (CTO, CIO...):** The primary technology decision-maker in your organization. Oversees all administrative and information technology systems and applications. Titles could include: Chief Technology Officer (CTO), Chief Information Officer (CIO), Assistant Superintendent for Technology, Technology Director or MIS Director.
- **IT Managers/Coordinators:** District-based personnel, performs tasks to aid in the on-going support of teachers and students. Provides hardware and software support to teachers.
- **Instructional Technology:** Focuses on how staff utilizes the technology resources available in and out of the classroom and provides on-going professional development to teachers.
- **District Media Specialists:** District-based personnel, oversees school library media applications.
- **Technicians:** Performs repair and maintenance of all technology-related equipment, as well as technical support for all technology-related systems. Supports and maintains administrative and instructional computers, software, networks, file servers and workstations.
- **Technology Assistants:** School-based personnel, performs tasks to aid in the on-going support of teachers and students. Provides hardware and software support to teachers.
- **LAN Engineers:** Designs, implements and maintains local area networks in a school environment. Supervises the installation, maintenance and operation of networks and associated computer hardware and software.
- **WAN Engineers:** Designs, implements and maintains wide area networks in a school environment. Supervises the installation, maintenance and operation of networks and associated computer hardware and software.
- **Student Records Specialists:** Performs technical and computer support functions for the student information system.
- **Web Specialists/Web Application Developers:** Designs and maintains internet, intranet and extranet sites.
- **Help Desk Managers:** Manage the process of ensuring accurate and timely technology support and problem resolution to requesters.
- **Media Coordinators:** School-based personnel, oversees school library media applications.

Survey respondents were then asked how many full-time equivalent (FTE) employees their school districts/institutions have for each position. Respondents were encouraged to use decimals for fractional FTE, such as “.5” for half of a position. And, as expected, the responses varied tremendously. The one staffing level that most of the survey respondents had in common was the technology leader position: 73% have 1 (one FTE) technology leader. Technicians and technology assistants were the job positions most likely to have bigger FTE staffing levels than the other positions.

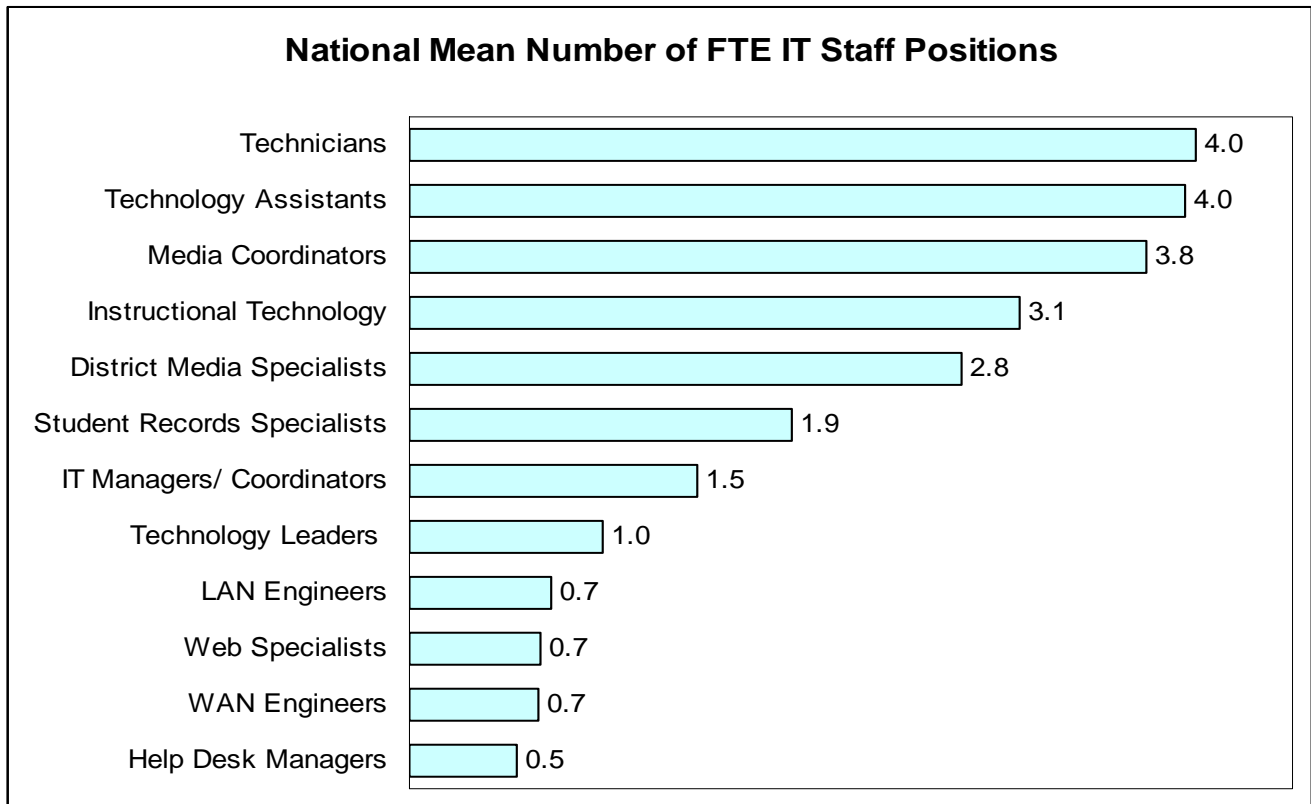
The distribution indicated that there is a solid group of schools that do not have any—even partial—FTEs, (those who indicated “0” FTE) for certain positions. More than half do not have any staff with the responsibilities of help desk managers or WAN engineers. Close to half do not have a web specialist.



Given the impact that the size of the school will have on FTE staff levels, the statistical data is most meaningful when segmented by school size or on a per student basis. The table below shows the mean FTE for each staff position cross tabulated by school size. This allows better comparisons to be drawn between the reader and the survey data.

MEAN NUMBER OF FTE BY POSITION	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
Technology Leaders	1.0	0.8	1.0	0.9	1.0	1.0	1.0	1.9
IT Managers/ Coordinators	1.5	0.9	0.9	0.8	0.9	1.1	4.6	4.4
Instructional Technology	3.1	0.7	2.2	1.2	1.7	1.8	5.3	20.7
District Media Specialists	2.8	0.5	1.3	1.4	2.9	5.3	4.3	9.1
Technicians	4.0	1.0	1.8	1.7	3.3	5.3	7.3	21.4
Technology Assistants	4.0	0.6	0.8	1.5	2.1	6.1	10.4	20.1
LAN Engineers	0.7	0.2	0.6	0.4	0.7	0.7	1.2	2.7
WAN Engineers	0.7	0.1	0.6	0.3	0.4	0.7	1.3	2.6
Student Records Specialists	1.9	0.5	0.9	0.8	1.2	2.1	3.6	10.1
Web Specialists	0.7	0.4	0.7	0.4	0.5	0.6	1.6	1.6
Help Desk Managers	0.5	0.2	0.6	0.3	0.4	0.6	1.2	1.2
Media Coordinators	3.8	0.5	1.9	1.3	2.1	3.4	18.3	11.5

Overall, IT departments are likely to have more technicians and technical assistants than any other FTE position (a national mean of 4 FTE). On average, less than one FTE is assigned to the LAN engineer, WAN engineer and help desk manager responsibilities.



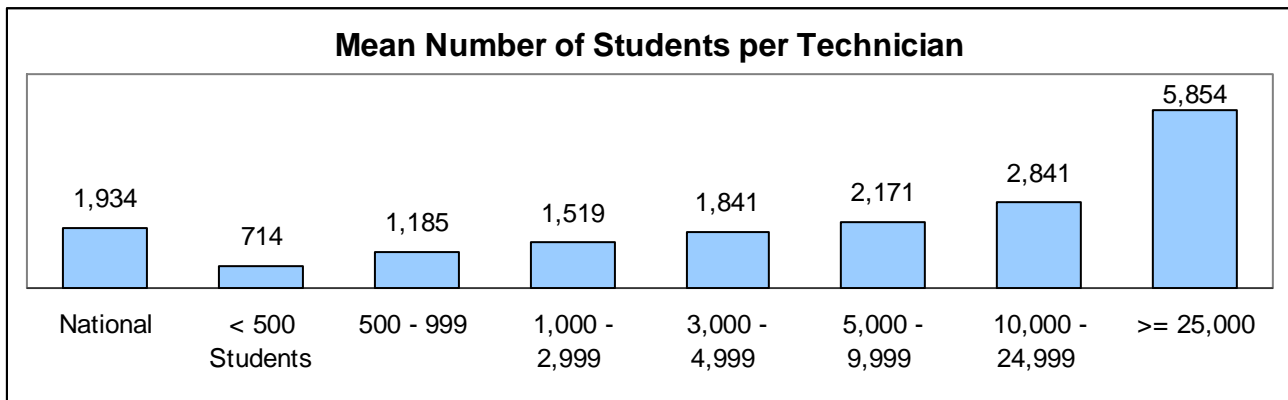
End user support is one of IT's most basic but time-consuming functions. A good benchmark is to compare the ratio of students per staff. Overall, the support staff ratios are very high.

MEAN NUMBER OF STUDENTS PER STAFF	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
Students per Technology Leader	6,543	502	1,320	2,207	3,890	7,184	16,076	42,490
(n=)	380	57	70	94	47	54	30	26
Students per IT Manager/ Coordinator	4,446	601	1,551	1,943	3,729	6,334	9,695	14,260
(n=)	243	43	50	44	22	31	25	26
Students per Instructional Technology	3,896	1850	1,442	2,069	3,150	5,513	8,856	10,816
(n=)	289	43	50	69	33	44	23	26
Students per District Media Specialist	5,918	565	922	1,493	2,976	2,838	13,283	31,900
(n=)	206	28	35	41	25	38	17	22
Students per Technician	1,934	714	1,185	1,519	1,841	2,171	2,841	5,854
(n=)	350	47	56	88	46	57	27	27
Students per Technology Assistant	2,755	488	1,689	2,462	3,356	1,566	2,896	10,344
(n=)	196	27	32	44	28	29	17	17
Students per LAN Engineer	8,107	1,190	2,014	4,342	5,490	7,208	12,840	26,691
(n=)	183	22	29	36	21	30	19	25
Students per WAN Engineer	10,733	703	2,123	6,148	5,277	8,245	14,350	29,233
(n=)	153	55	23	25	15	34	24	25
Students per "Tech Support" *	1,021	434	641	912	1,170	1,185	1,276	2,774
(n=)	385	57	66	98	48	58	29	27

* "Tech Support" is defined as technicians, technical assistants, LAN engineers and WAN engineers.

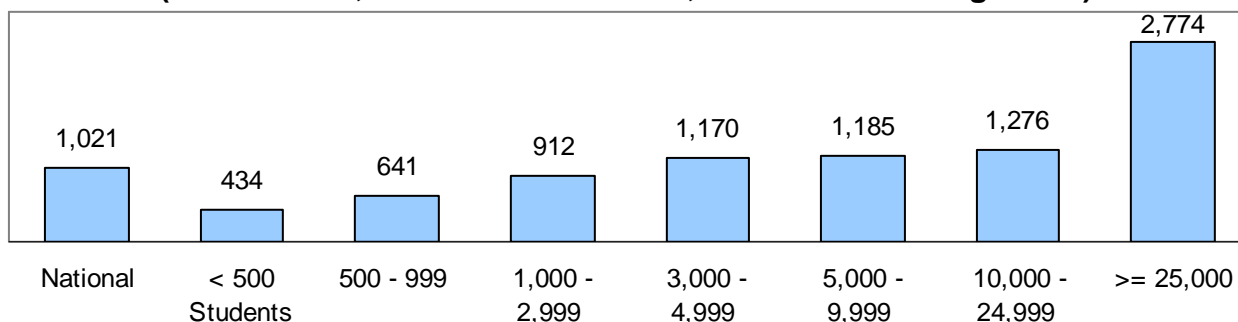
MEAN NUMBER OF STUDENTS PER STAFF	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
Students per Student Record Specialist	4,915	794	1,537	2,434	3,538	5,538	8,634	17,485
(n=)	267	36	37	51	39	50	27	26
Students per Web Specialist	12,486	609	2,436	4,904	6,430	9,032	18,016	43,824
(n=)	163	23	24	30	17	24	17	27
Students per Help Desk Manager	12,854	4,020	2,294	5,251	7,616	6,543	13,640	45,165
(n=)	127	13	20	20	12	22	18	21
Students per Media Coordinator	4,641	351	769	1,293	3,107	3,243	3,403	31,699
(n=)	176	23	36	41	16	22	20	17
Students per Total IT Staff	491	187	220	345	474	417	407	3241
(n=)	454	87	89	109	50	58	30	28

The mean number of students per technician is 1,934:1. This ratio is lower for small schools and increases disproportionately for large schools/districts. It is an increase from the 2007 ratio of 1,409:1, indicating the IT technicians are responsible for more students than they were last year.



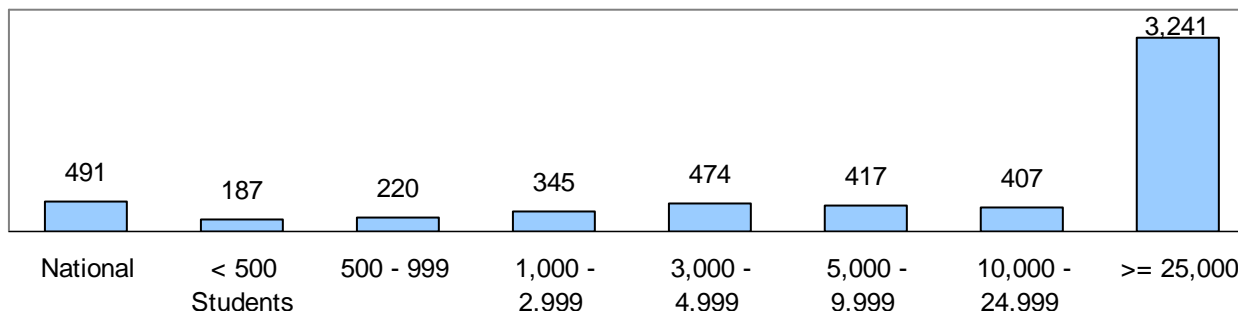
Combining technicians, technical assistants, LAN engineers and WAN engineers into a group called Tech Support, the mean number of students per tech support person drops to 1,021:1. Studies of the corporate world have shown that ideally one tech support staff is needed for every 100-200 end users.

**Mean Number of Students per "Tech Support"
(Technicians, Technical Assistants, LAN and WAN Engineers)**



Looking at the total IT staff as defined by these 12 job responsibilities, the students per IT staff member is 491:1. The 2007 EDUCAUSE Core Data Service report—which analyzes data for the higher education market—calculates a ratio of 154 students per 1 IT staff member.

Mean Number of Students per Total IT Staff



Survey participants were asked to indicate what other staff positions they have in their IT department. Responses included:

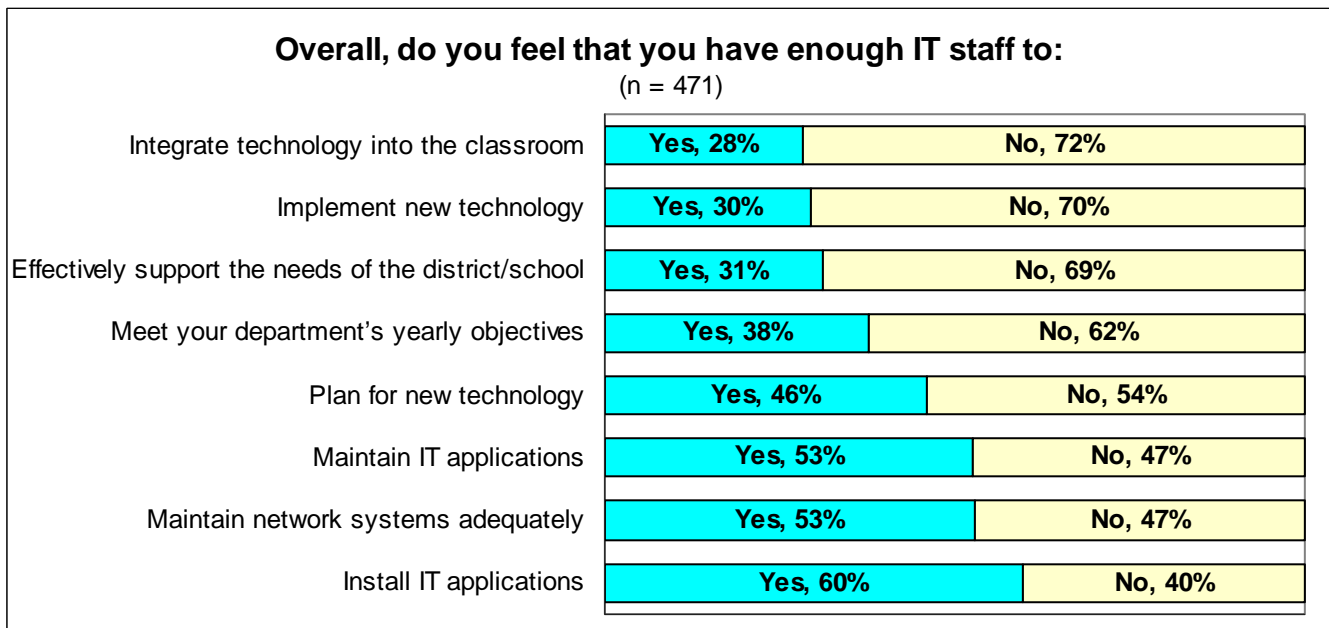
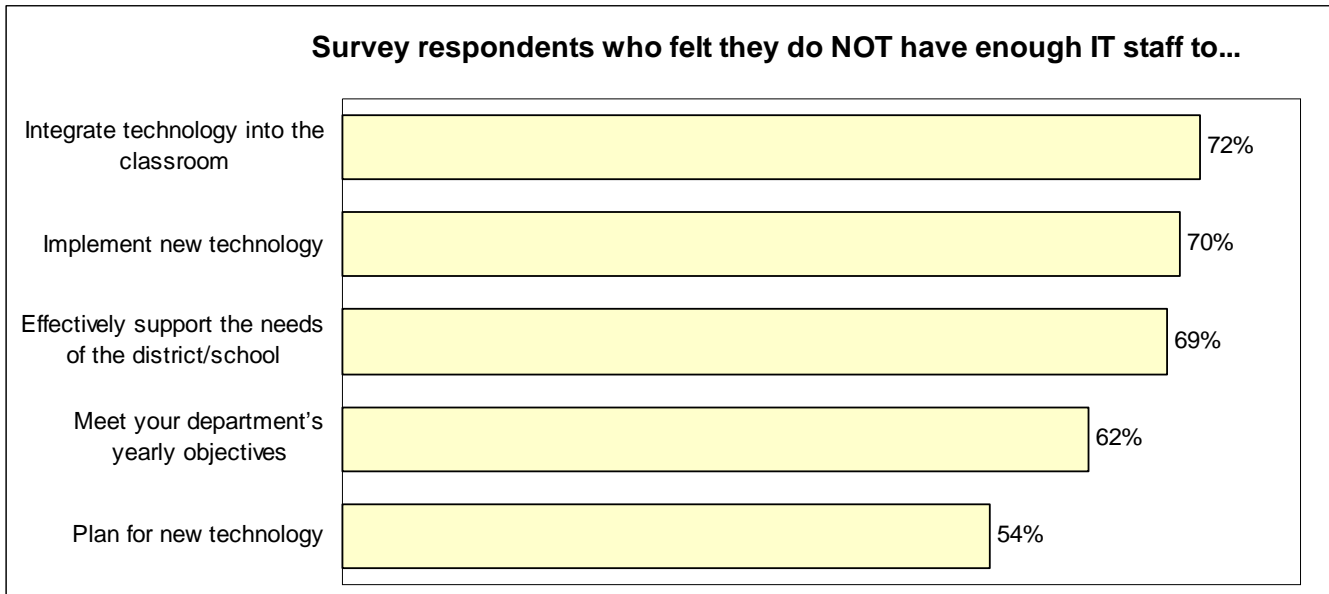
Admin Systems Support (fiscal, HR, transportation)
 Assessment Coordinator
 Attendance Clerk
 AV Specialist
 Building Tech Rep/Tech Coach
 Communications Coordinator
 Computer Lab Staff
 Consultants/Vendors/Outsourced
 Data Entry Clerk
 Graphics
 Help Desk Technician
 Network Managers
 Ordering and License Management

Programmers/Developers/Application Specialist
 Project Engineer
 Secretary/Administrative Assistants
 SecurityCamera and Fire Alarm Support
 Server Support/Network Managers/Email Manager
 Software Engineers
 State Reporting Administrators/Report Writers
 Systems Analyst/Info Systems Specialists
 Systems Security
 Teachers
 Team Managers
 Telecom/Telephone Support/Phone Technicians
 Volunteers

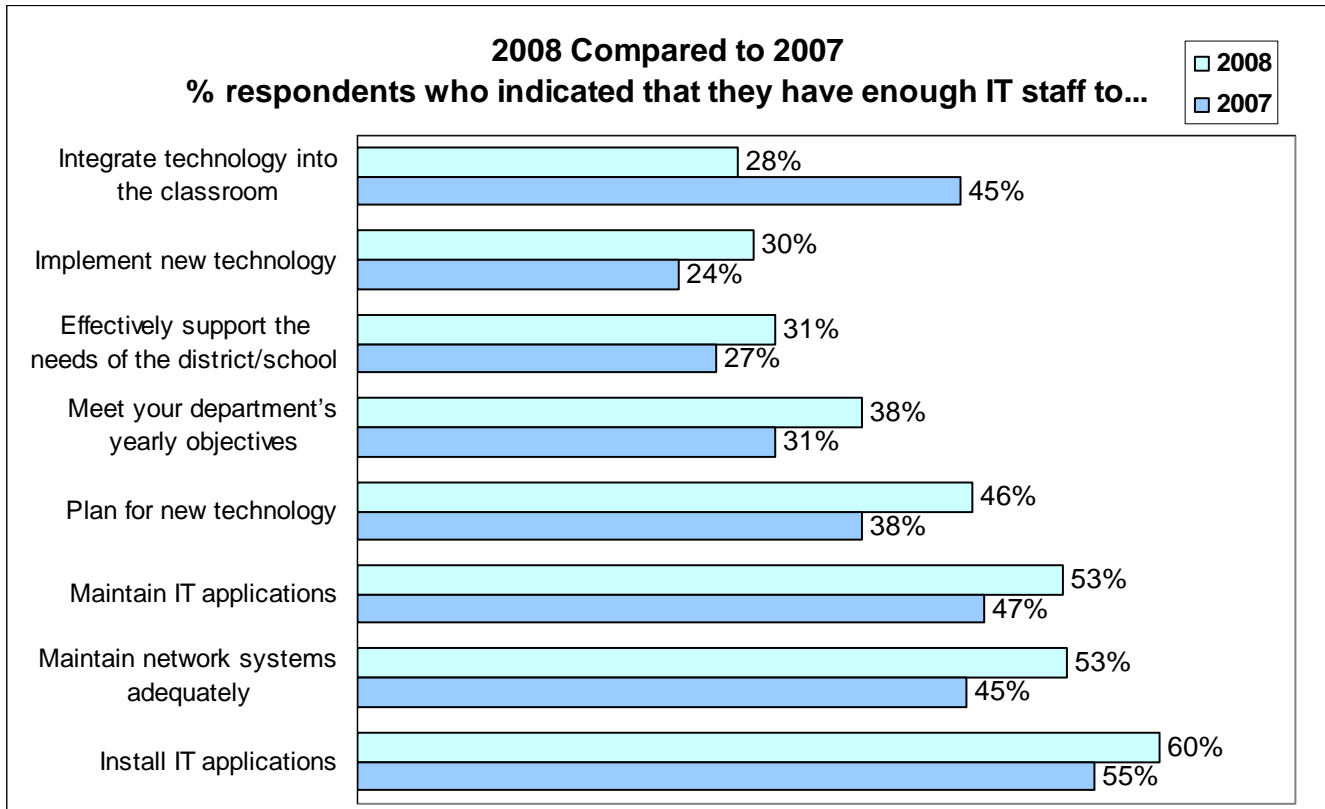
Staffing Issues

A reoccurring theme throughout last year's survey was that stretched IT departments were falling short when it comes to integrating technology into classroom instruction. In 2007, 65% reported that they do not have enough staff to do this. The picture gets worse in 2008, with 72% of the survey respondents reporting that they do not have enough staff for this critical function.

The majority of respondents indicated staffing shortages in other areas as well. Seventy-one percent do not have enough staff to implement new technologies, and 69% feel their staffing levels do not allow them to effectively support the needs of the district/school. In addition, the thin staff impacts the ability to meet the departments' yearly objectives (62%) and to plan for new technologies (54%).



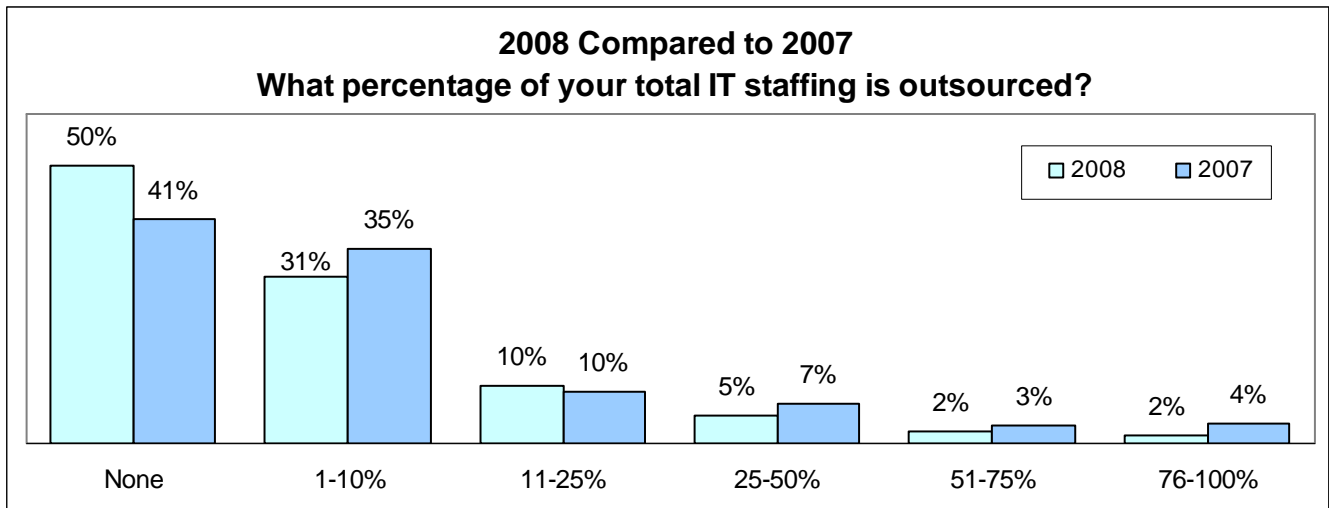
Staffing shortages are clearly having a negative impact on IT departments' abilities to achieve these strategic goals. However, it is encouraging that, with the exception of classroom integration, there was a small increase from 2007 in the percent of respondents reporting that they do have enough staff to handle these goals.



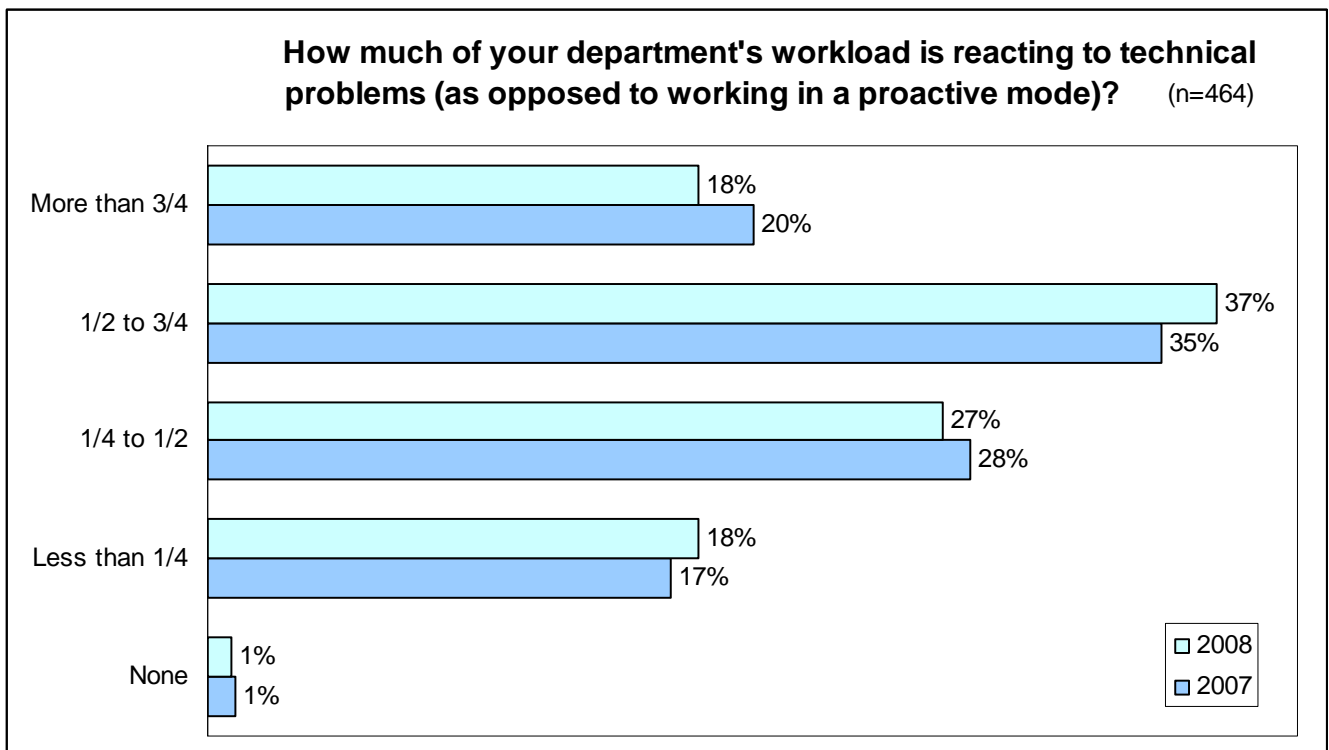
Survey respondents were asked how many additional FTE they felt needed in each position, allowing for fractional FTE (such as ".5" for a half FTE). "0" indicates no additional staff is needed. The most common areas of need appear to be for instructional technology staff, technicians and web specialists.

FTE employees	0	.1 - .9	1.0 - 1.9	2.0 - 2.9	3.0 - 3.9	4-6	>=7
Technology Leaders (CTO, CIO...)	59.2%	10.2%	22.4%	2.0%	2.0%	4.1%	0.0%
IT Manager/Coordinators	48.9%	7.7%	30.0%	6.0%	1.7%	3.9%	1.7%
Instructional Technology	14.6%	13.9%	32.9%	13.6%	6.6%	9.2%	9.2%
District Media Specialists	46.3%	7.0%	24.0%	7.4%	3.5%	7.0%	4.8%
Technicians	15.6%	10.5%	34.6%	19.4%	6.7%	7.9%	5.4%
Technology Assistants	40.4%	8.2%	18.8%	6.9%	4.1%	9.4%	12.2%
LAN Engineers	46.4%	16.9%	26.2%	6.8%	0.8%	2.1%	0.8%
WAN Engineers	59.0%	12.3%	19.8%	4.7%	1.9%	1.9%	0.5%
Student Records Specialists	41.7%	14.0%	33.1%	5.8%	1.2%	2.5%	1.7%
Web Specialists/ Web Application Developers	27.6%	18.5%	45.7%	5.5%	0.4%	1.6%	0.8%

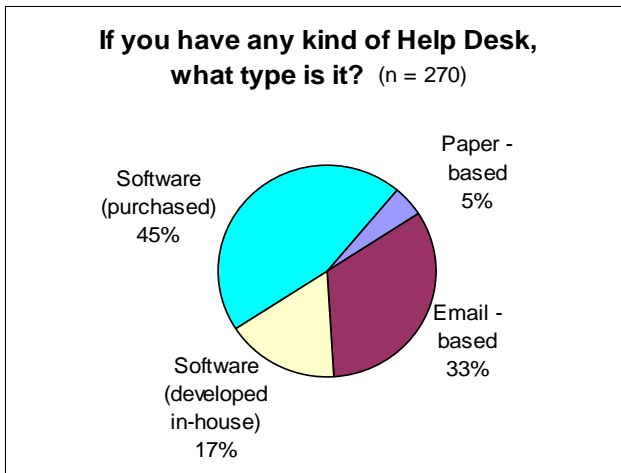
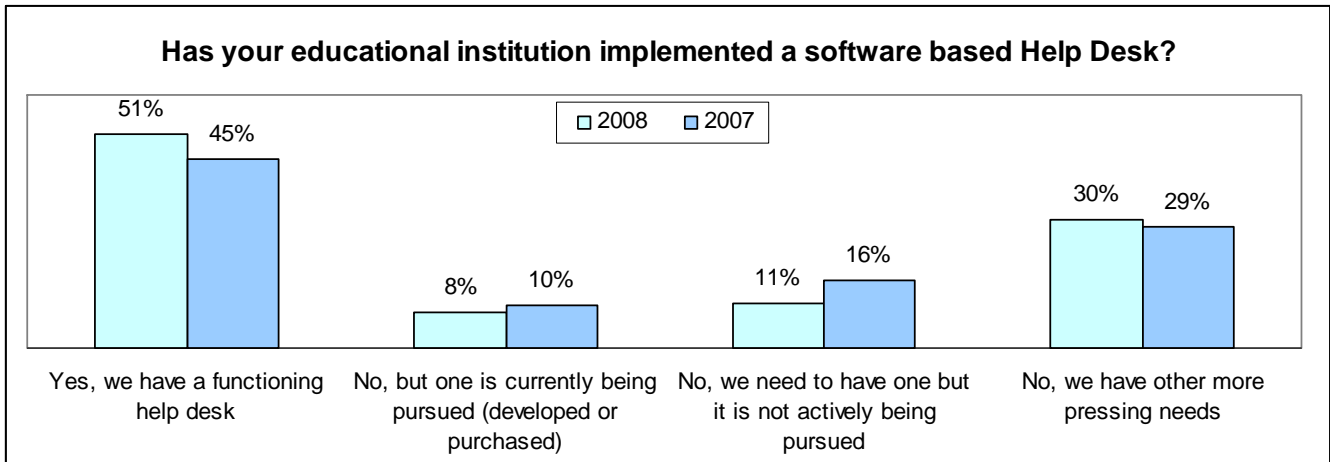
Fewer schools/districts are outsourcing IT staff this year compared to 2007. However, it is still a common practice with half of the participants reporting that some of its IT staff is outsourced. Thirty-one percent reported that between 1 and 10 percent is outsourced.



One of the most concerning findings of these surveys continues to be the percentage of the IT department's workload that is spent reacting to technical problems as opposed to working in a proactive mode. Just over half (55%) reported that 50-100% of their department's workload is spent reacting to technical problems. Working in a reactive mode makes it difficult to plan, test or implement new systems and software. With the rate at which some technology changes, it becomes easy to invest too much staff time in supporting outdated and ineffective applications.



Half of all respondents have a functioning software based help desk, up slightly from 45% in 2007. Another 8% are currently developing or implementing one. Commercial software systems make up 45% of the help desk systems; 33% are email based.



Schools that purchased help desk software were asked to specify the vendor they use. The responses covered 48 different vendors. The most common are shown in the table below.

Help Desk Vendors	
Most Common Vendors	Percent
SchoolDude	21%
Numara Track-IT	13%
Grouplink eHelpDesk	7%
Altiris	5%
Front Range HEAT	5%
Other Vendors (consists of 43 different answers)	49%

IT Assets

The National Center for Education Statistics has tracked a steady increase in the number of computers in schools over the past decade. Computers are used by administrators, staff and teachers to support daily school operations. In addition, students have access to common computers in labs and media centers, and personal computers are increasingly found in the classroom. Declining prices and funding programs have also encouraged more investment in school computers.

The 2008 survey found the average school to have about 1,495 desktop computers.

MEAN NUMBER OF COMPUTERS	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
# of PCs/desktops Designated as Lab Computers	556	53	102	260	444	799	1,188	4,594
# of PCs/desktops Designated as Staff Computers	549	50	99	197	402	768	1,455	4,449
# of PCs/desktops Designated as Student Computers	1,275	85	188	372	749	1,479	3,465	10,893
TOTAL NUMBER OF COMPUTERS	1,495	139	270	537	1,021	2,129	2,535	8,898

Anecdotally, there is a general feeling within the education industry that one technician typically supports 300-500 computers. This study found the overall mean ratio to be a little higher at 612 computers per technician. Since the level of support needed can vary by the use of the computer, distinctions were made between the number of computers designated as staff computers, lab computers, and student computers.

MEAN NUMBER OF COMPUTERS PER TECHNICIAN	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
Lab Computers per Technician	166	110	157	173	144	208	115	266
Staff Computers per Technician	150	97	132	131	140	193	130	295
Student Computers per Technician	296	127	318	217	229	391	355	632
TOTAL COMPUTERS PER TECHNICIAN	612	334	608	521	512	792	600	1194

This year's survey found the mean ratio of students per student computer to be 12:1, still considerably higher than most standards. Some states recommend a student to computer ratio of 5:1, while other studies have shown ratios closer to 3:1.

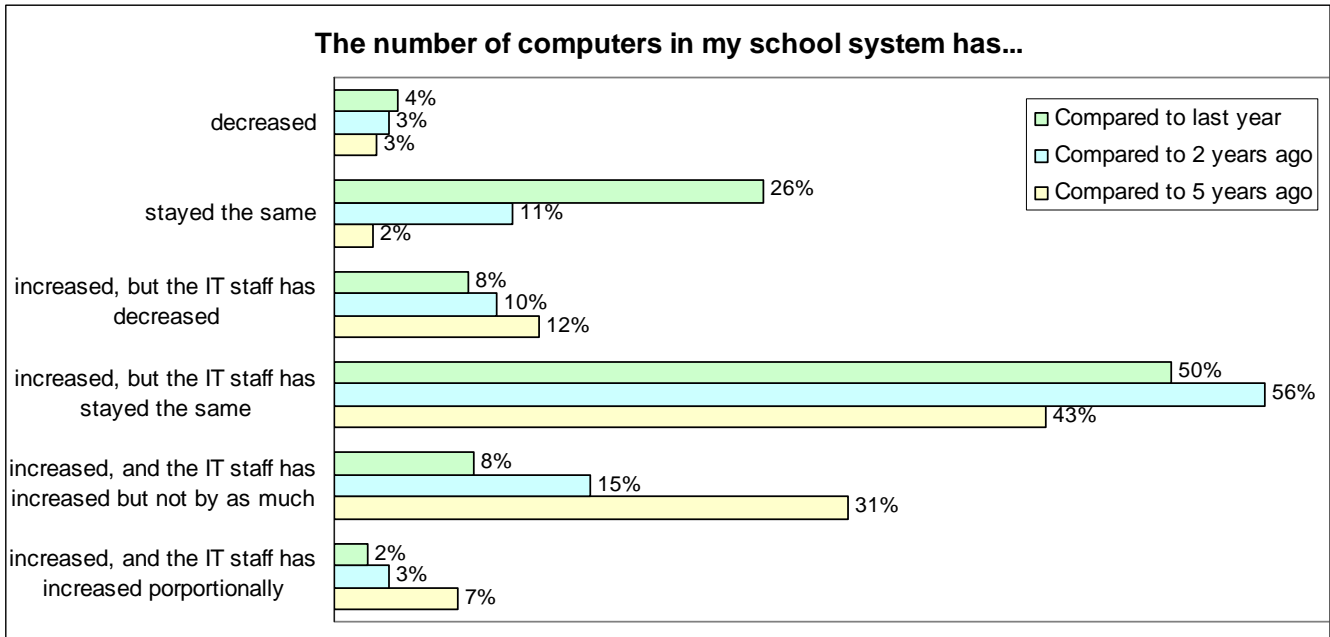
MEAN NUMBER OF STUDENTS PER COMPUTER	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
Students per Lab Computer	38	8	18	12	12	14	36	447
Students per Student Computer	12	7	10	14	13	11	12	31

Recommended best practices suggest that one support person is needed for every 6-20 servers. As with desktops, the use of the server has an impact on the amount of technical support needed.

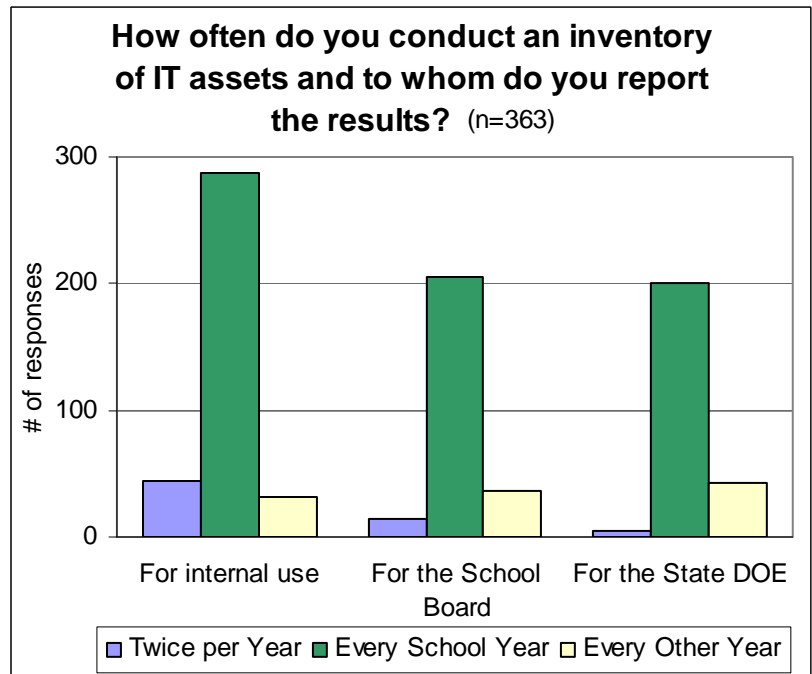
MEAN NUMBER OF SERVERS	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
# of File Servers	17.9	3.3	4.2	8.4	15.6	24.7	33.5	130.0
# of Database Servers	5.3	1.2	1.7	2.7	4.7	5.9	11.5	35.2
# of Application Servers	11.8	1.8	3.0	4.3	8.6	11.2	38.7	88.5
TOTAL NUMBER OF SERVERS	21.7	4.5	6.0	9.9	18.8	27.9	35.9	114.2

MEAN NUMBER OF SERVERS PER TECHNICIAN	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
File Servers per technician	6.2	6.1	8.8	5.3	4.6	6.9	3.4	8.2
Database Servers per technician	1.7	1.8	2.2	2.0	1.4	1.2	1.1	1.7
Application Servers per technician	3.5	3.3	3.2	3.7	3.6	3.2	3.6	4.1
TOTAL SERVERS PER TECHNICIAN	11.4	11.2	14.3	10.9	9.6	11.3	8.1	14.0

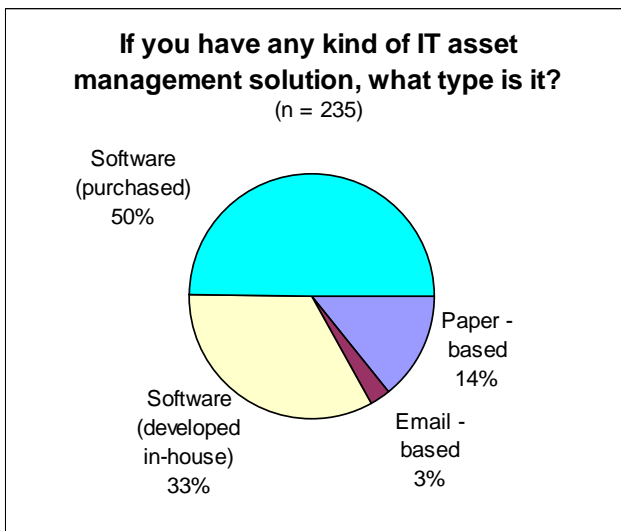
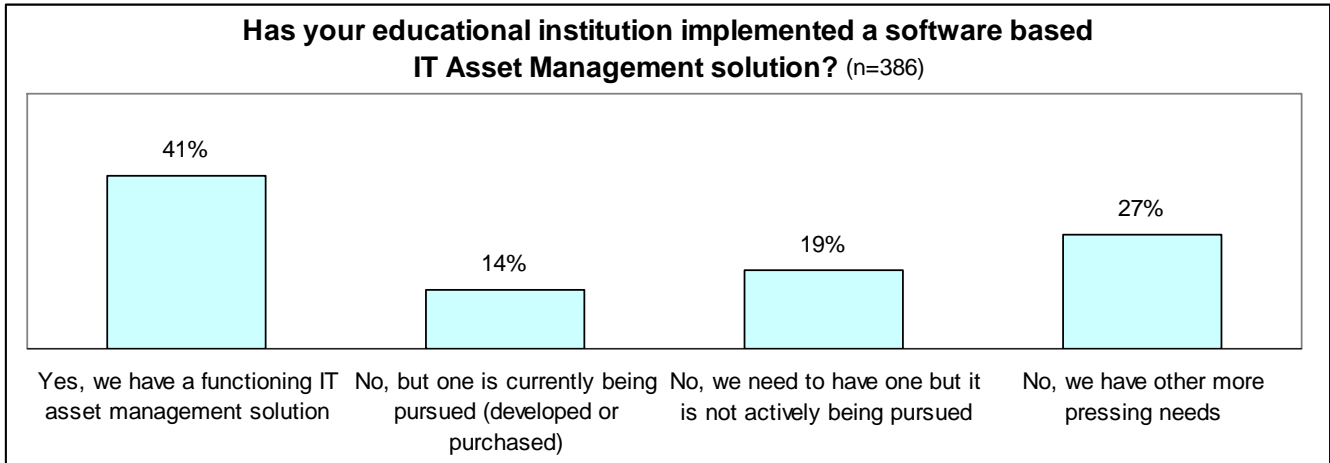
Survey participants were also asked about the qualitative relationship of staffing levels to IT assets compared to last year, two years ago and five years ago. For all three timeframes, the majority of respondents indicated that the number of computers has increased but the IT staffing level has stayed the same. Not surprisingly, only a small percentage indicated that over the five year period the number of computers has decreased.



Of those who conduct an inventory of IT assets, 95% do so for internal purposes. Two thirds (67%) report the results to the school board, and 65% report the results to the state. Regardless of the audience, inventories are most commonly conducted once per year. Some state DOEs require less frequent reports: every other year, every three or every five years. Several respondents indicated that they are continually monitoring assets in real time using computerized tracking programs. A few schools/districts noted that they also prepare inventory audits for town auditors and insurance assessors.



This year, the survey also asked if the school/district had implemented a software-based IT asset management system. Forty-one percent reported that they have a functioning solution, and another 14% are currently pursuing one. Half of these IT asset management solutions consisted of purchased software, and one-third use software that was developed in-house.

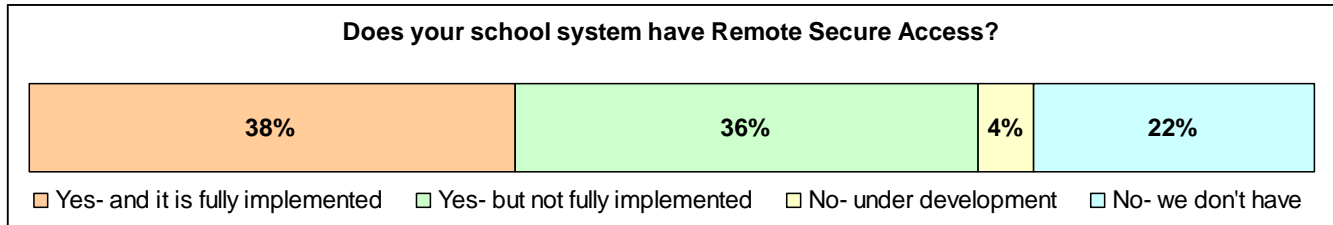


Schools that purchased IT asset management software were asked to specify the vendor they use. The responses included 51 different vendors. The most common are shown in the table below.

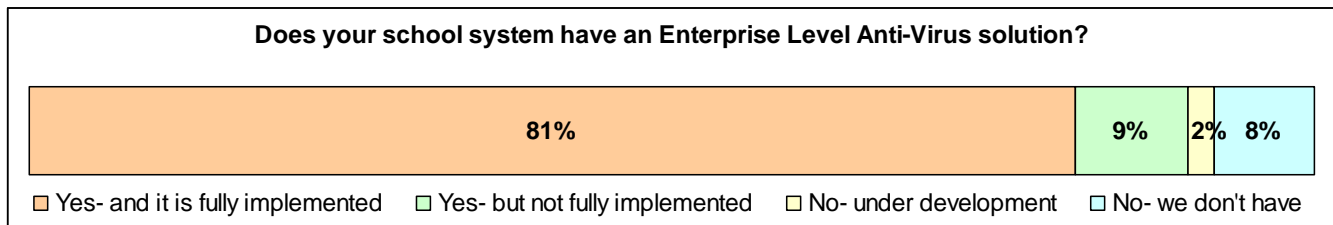
IT Asset Management Vendors	
Most Common Vendors	Percent
SchoolDude	14%
Novell-Zenworks	10%
Numara Track-IT	9%
Altiris	5%
Open Source OCS Inventory	5%
Follet Asset Manager	4%
Other Vendors (consists of 45 different answers)	52%

Software and Systems

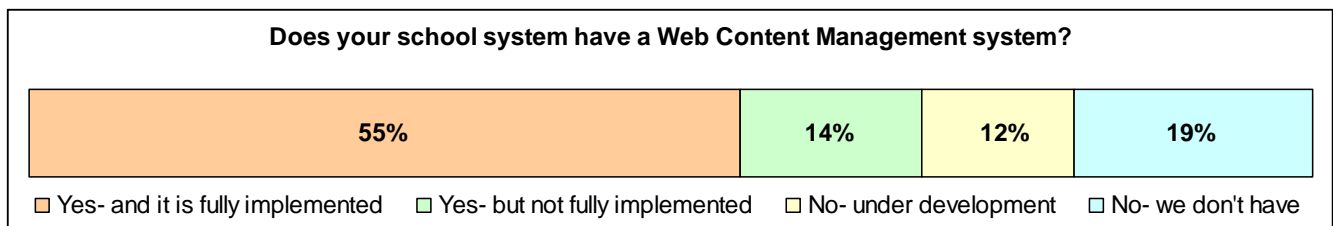
Only 38% of those surveyed have fully implemented secure remote access, although another 36% have a system in place but it is not fully implemented. Almost one quarter (22%) do not have secure remote access and are not currently working on it.



Most of the school systems (81%) have fully implemented an enterprise level anti-virus solution.



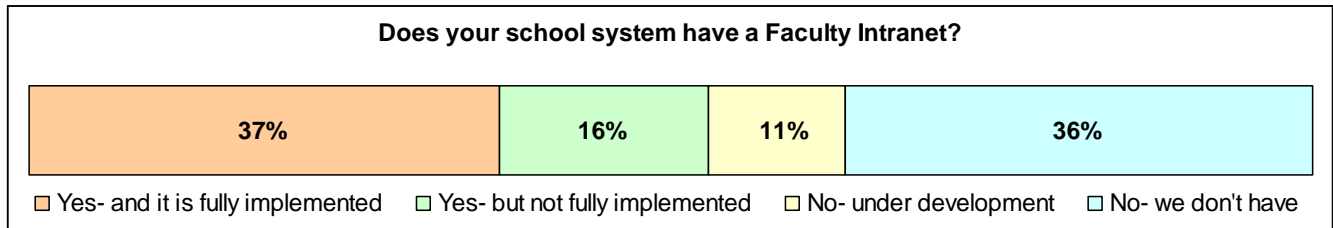
Just over half (55%) have fully implemented a web content management system. Fourteen percent have a system that is not fully implemented, and another 12% are developing a system.



The respondents who have a system were then asked what vendor they use, and the results varied greatly. Those schools/districts with a web content management system use 98 different vendors. The most common response was a solution developed in-house.

Web Content Management Vendors	
Most Common Responses	Percent
In house	7%
Schoolwires	7%
SonicWall	5%
WebSense	5%
LightSpeed	5%
8e	3%
Barracuda	2%
Whipple Hill	2%
Moodle	2%
Other (consists of 89 different responses)	61%

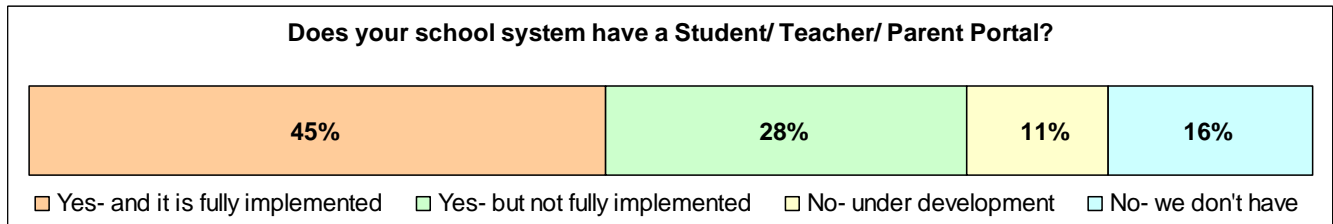
Thirty-six percent of those surveyed do not have a faculty intranet and are not currently under development. Thirty-seven percent have one that is fully implemented.



Those who have a faculty intranet, or are working on one, reported using 53 different vendors. One-third of those are using solutions developed in-house.

Faculty Intranet Vendors	
Most Common Responses	Percent
In house	33%
MS Sharepoint	7%
Microsoft	6%
Schoolwires	5%
FirstClass	4%
Novell	3%
Moodle	3%
Other (consists of 46 different responses)	40%

Almost half (45%) have a fully implemented student/teacher/parent portal, and another 28% have one that is not fully implemented.



Those with a system use 102 different vendors. The most common responses are shown here.

Student/Teacher/Parent Portal	
Most Common Responses	Percent
Pearson PowerSchool	15%
Edline	6%
In house	6%
Infinite Campus	5%
Skyward	5%
Blackbaud	2%
JMAC	2%
Whipple Hill	2%
Other (consists of 94 different responses)	57%

In 2007, 82% of the survey respondents said that it was very or somewhat important to have a single sign-on of all of their school applications and have an integrated security model. To follow up on this, the 2008 survey asked an open-ended question about the strategy respondents are using to manage single sign-on and found that the majority did not have a strategy. Of those who do, Active Directory is the most common approach.

Single Sign-On Strategy	
Aggregated Responses	Percent
None	30%
Don't Know/Done at District	8%
Being Developed	10%
Active Directory	19%
LDAP	8%
User Lists/Passwords	7%
In House	2%
Novell	2%
Keberos and LDAP	1%
Stoneware	1%
eDirectory	1%
Limited or No Servers	1%
Mac Workgroup Manager	1%
RADIUS	1%
Windows	1%
Others (14 answers, 1 each)	6%

Software as a Service (SaaS)

Software as a Service (SaaS) is a computer application that is delivered as a service rather than being physically installed on school servers or individual desktops. Users access the software via their PC web browser or mobile device. SaaS applications free up IT staff from installation, upgrade and software maintenance chores.

There are a number of key benefits that can be attributed to subscribing to SaaS-based solutions, including:

Time: SaaS solutions often provide significant implementation cycle time benefits and are quite often considerably less complex to configure and launch. This typically delivers a higher return on investment (ROI) and time to value for your software subscription. The overall project management planning and execution is quite straightforward and results in rapid implementation of your software solution.

Risk: Because the implementation complexity is greatly reduced with a configurable SaaS-based solution, the overall risk to your enterprise is lessened considerably, and the success rate of meeting your initial implementation goals is appreciably improved.

Scalability: Most SaaS solutions are designed and architected to be quite agile and are equipped to quickly and easily scale your software application solution to meet the requirements of your institution with no hardware, IT resource, or procurement lead time requirements.

IT Resources: SaaS-based solutions position your internal IT organization to continue to focus on strategic and mission-critical projects, and rely on considerably less on-going internal IT support resource commitments than traditional client/server and mainframe-based software applications. SaaS solutions are appealing to many higher education IT organizations that are currently over-committed and under-staffed.

Cost: Most experts and analysts agree that SaaS solutions deliver a lower total cost of ownership (TCO) (total of hardware, software licensing, infrastructure, support staff and overhead costs over time) than traditional client/server and mainframe-based software solutions. SaaS solutions also require lower upfront costs while making planning and budgeting easier with more predictable costs throughout the subscription agreement.

Simplicity: SaaS solutions offer less technology complexity than traditional IT solutions, which require internal staff members to deal with various issues surrounding the application hardware, application software, operating system software, middleware software, and infrastructure software and hardware. There are also change, release, and configuration management procedures that need to be designed and implemented for each of these layers of technology to manage the on-going maintenance, upgrades and support for each component.

Configurability: SaaS solutions typically offer many configuration options versus the ability to be customized. Although this model limits the ultimate flexibility of the application software, it generally is in the best interest of each customer in that on-going updates and enhancements can be applied on a frequent basis without “breaking” the application or creating extended version upgrade outages. In most enterprises, customized software is considerably more expensive to operate and maintain than software where vendor configuration options are administered.

Enhancements: Most SaaS solution providers today have maintenance and enhancement release schedules that are considerably shorter than traditional client/server and mainframe software applications. The updates also do not require scheduling internal IT resources and application experts to review and apply the software changes.

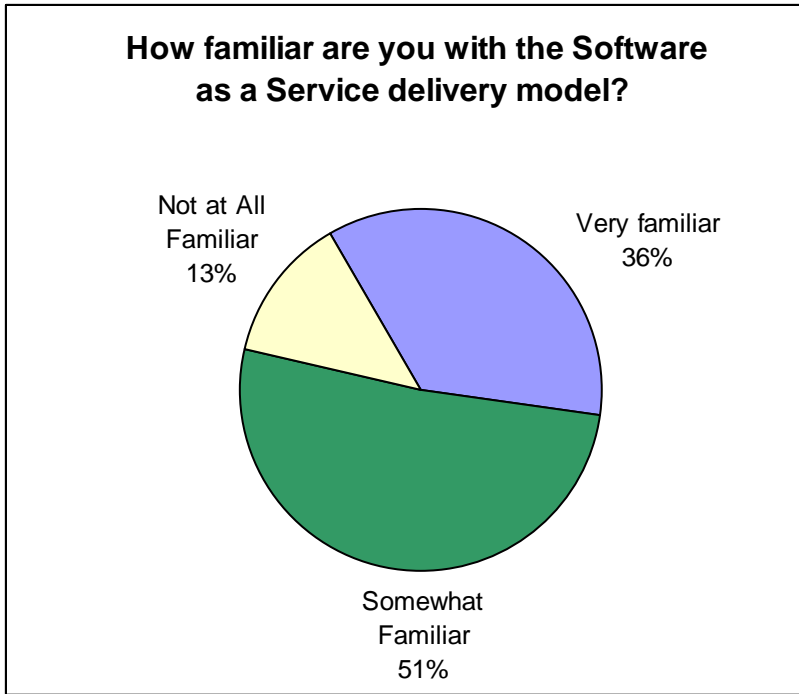
Access: SaaS solutions leverage Internet access, which is ubiquitous for most organizations today. A key advantage is that they provide secure access from anywhere at any time for your facilities and maintenance team, administration and staff, faculty, and students.

Business Continuity: Proven SaaS solution providers have made a thoughtful and considerable investment in comprehensive business continuity and disaster recovery plans and procedures to ensure that their customers do

not experience any serious application outages. Internally hosted software applications require an appropriate investment of time to ensure that contingency plans are defined, developed and implemented accordingly.

There are two additional benefits that SaaS solutions offer that appeal to many IT organizations. First is that these solutions are typically “green” in that they do not require additional internal investments in data center floor space, cooling and power. Secondly, SaaS solution providers typically leverage the latest “virtualization” techniques to maximize their investments in hardware and software to support their application offerings.

In order to gauge the awareness of and practical issues concerning SaaS applications, a series of questions regarding this delivery model was asked in both the 2008 and 2007 surveys. In both years, more than 80% of respondents reported that they are very or somewhat familiar with SaaS.

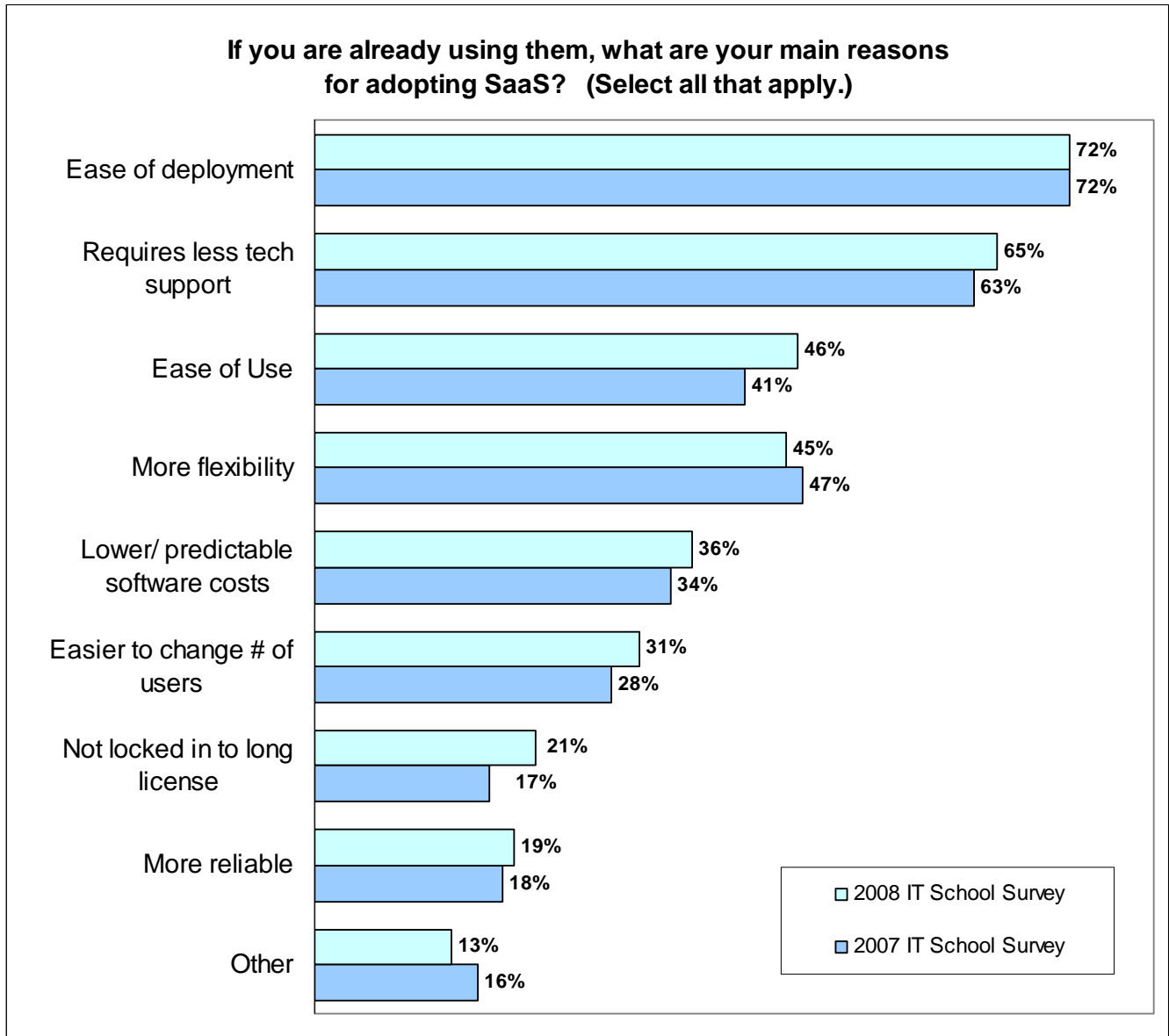


Forty-seven percent of schools/districts indicated that they are currently using one or more SaaS applications.

Do you currently use any SaaS applications?	
Answer Options	
Currently use for one or more applications	47%
Plan to adopt in within next 12 months	3%
Plan to adopt in more than 12 months	1%
Under consideration, but no decision yet	23%
Don't plan to use any	26%

Of those who are already using SaaS applications, the main reasons for adopting them have basically remained the same. Ease of deployment (cited by 72%) and the fact that these applications require less technical support (selected by 65%) remain the two most compelling reasons.

The top four reasons all reflect ways for IT leaders to better manage the workload for their technical support staff by reducing the need for IT help.



“Other” reasons for adopting SaaS applications included: access from school and home; only option for software offered; safety of the database; no compatibility issues; and don't have to use server space.

In 2008, schools/districts saw data security (72%) and integration with non-SaaS applications (60%) as the biggest challenges. Almost half (45%) listed data control as a big issue. The “Other” category primarily consists of concern about bandwidth, although cost, reliability, availability and longevity were also cited as major obstacles.

This year, 72% reported that they were concerned with data security, a significant increase over the 40% who saw this as a major challenge in 2007. This jump in concern over data security may be due to the prevalence of data breaches reported in both the mainstream and technical press during the past year. High profile cases included The TJX Companies Inc. disclosure in January 2007 that unknown intruders had broken into its networks and stole 45.6 million card numbers. In recent months, two more large payment processors—RBS WorldPay Inc. and Heartland Payment Systems Inc.—have also disclosed that personal data of card holders had been compromised in a breach of their systems. Financial services companies aren't the only businesses making the news with data security issues. Companies in healthcare, job services, hospitality, telecommunications and government have had their systems hacked in the past year. In fact, the Identity Theft Resource Center (ITRC) counted 656 breaches in 2008 from a range of well-known U.S. companies and government entities. And the education sector was not immune. In recent months, The Ohio State University, Lorain County Community Schools, University of NC School of the Arts and University of North Carolina-Greensboro all had student/employee personal data put at risk when their servers were breached. Other educational institutions (Ohio University-Chillicothe Health and Wellness Center and Austin Peay State University) recently had data breaches from laptops or hard drives being stolen.

All of this suggests that the large increase among our survey respondents regarding the challenges of data security may be due to broad, overall concerns about this issue. Incidents such as the ones cited above are increasing awareness over data security and thereby causing concern regardless of the application type (client server versus SaaS). In cases such as the TJX Companies', the breaches weren't because of a software as a service business model but because of poor controls, loose access and not enough oversight.

SchoolDude clients want to know that any information pertaining to them is safe and secure.

First and foremost is the physical security of the SchoolDude servers. The servers and networking equipment that compose the infrastructure of the SchoolDude network is housed in two secure data centers in separate regions in the USA. One site serves as primary and the second as redundancy. Access to the data center equipment at all sites is limited to SchoolDude's mission critical personnel.

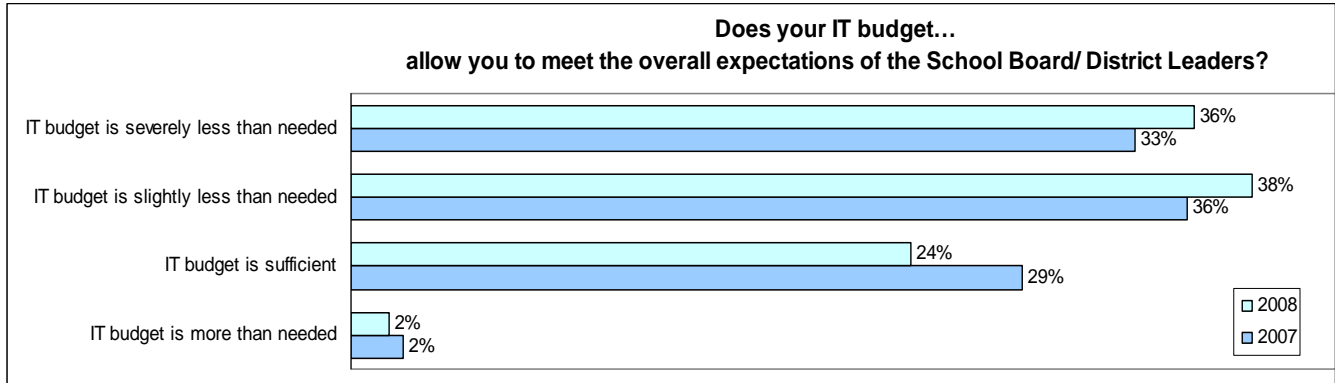
Beyond securing the data center site access, the individual servers are secured by a combination of IIS, database, and operating system logins. The number of individuals having logins to access to information is limited to SchoolDude's product delivery team members and application deployment engineers. In addition, individuals are granted access to various functions of the servers that falls within the area of assigned responsibility.

Our network is secured from intrusion by a high capacity firewall that filters all incoming traffic. SchoolDude's network is secured from intrusion by a high capacity firewall that filters all incoming traffic except traffic utilizing port 80. SchoolDude also has a failover firewall to protect against outages when the primary firewall fails. We proactively maintain the infrastructure by applying patches and updates on all infrastructure devices as well as server operating systems and supporting applications during maintenance periods. Critical updates or patches are performed immediately after testing.

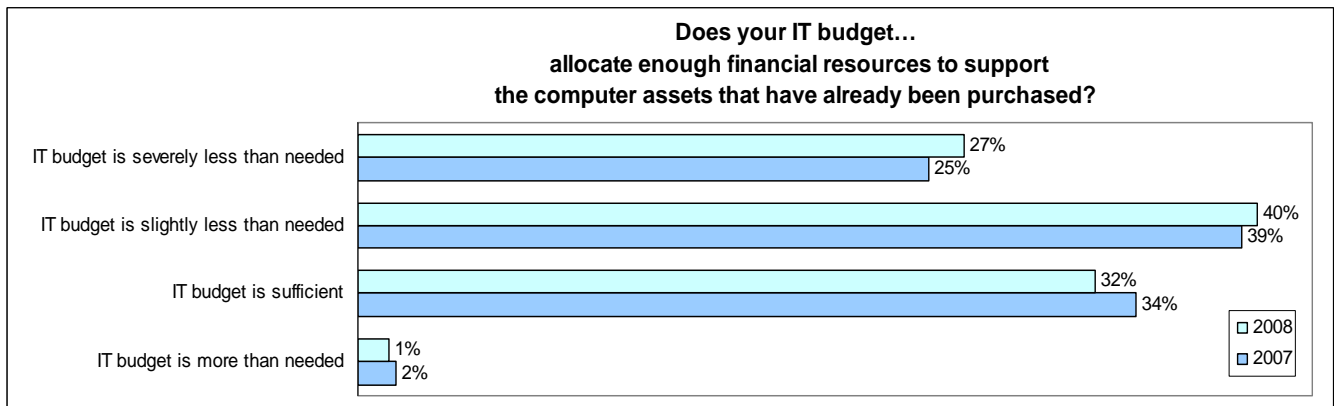
For more information on our general infrastructure, please refer to our online document found at: http://www.schooldude.com/elements/media/article_file/Data_Center_Operations.pdf

IT Funding

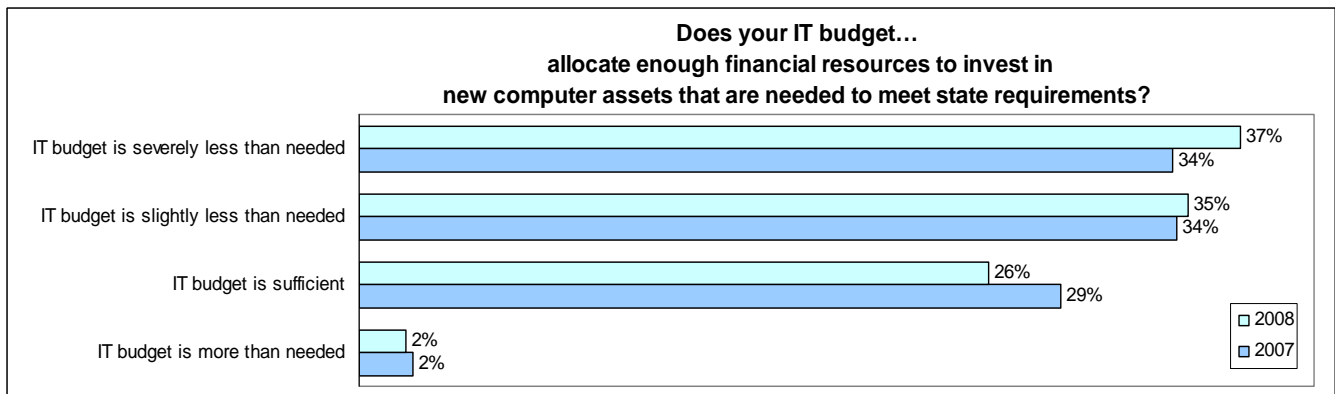
Three quarters of the survey participants reported that the IT budget was less than they needed in order to meet the overall expectations of the school board/district leaders. In fact, 36% felt that their budget was severely less than needed to meet expectations. This is a slight increase from 2007.



Forty percent of the 2008 respondents felt that their IT budgets were slightly less than needed to support existing computer assets, while another 27% indicated that their budgets were severely less than needed. This is similar to the 2007 results.



Regarding the financial resources needed to invest in new computer assets to meet state requirements, 37% reported that their IT budgets were severely less than needed and another 35% felt that they were slightly less than needed.



Strategic IT Issues

For nine years, EDUCAUSE has conducted a *Current Issues Survey* asking higher education information technology leaders to “rate the most critical IT challenges” facing them, their campuses and/or their systems. To see if the issues facing K-12 IT leaders were the same as in higher education, a similar set of questions was included our survey last year and again this year. For the K-12 group, IT funding remained the most important issue to resolve for strategic success. Among those in higher education, security was reported as the number one concern, followed by administrative/ERP systems. The K-12 group also continued to indicate that faculty development and staffing/training are important for strategic success.

Which issues are most important for your school/district to resolve for strategic success?	2008 K-12 IT Survey	2008 EDUCAUSE	2007 K-12 IT Survey
Number 1 Concern	Funding IT	Security	Funding IT
Number 2 Concern	Faculty Development, Support and Training	Administrative/ERP/Information Systems	Faculty Development, Support and Training
Number 3 Concern	Staffing/Training	Funding IT	Staffing/Training

In both 2007 and 2008, the K-12 school survey found IT funding to be the primary issue with potential to become more significant in the coming year. The EDUCAUSE survey found identity/access management to be the number one issue with potential in the higher education market.

Which issues have the potential to become more significant in the coming year?	2008 K-12 IT Survey	2008 EDUCAUSE	2007 K-12 IT Survey
Number 1 Concern	Funding IT	Identity/Access Management	Funding IT
Number 2 Concern	Infrastructure	Security	Faculty Development, Support and Training
Number 3 Concern	Faculty Development, Support and Training	Funding IT	Security

This year, faculty development, support and training was identified by the K-12 group as the issue on which most their time was spent. The EDUCAUSE survey found funding to be the number one most time-consuming issue in higher education.

Which issues are you spending most of your time addressing?	2008 K-12 IT Survey	2008 EDUCAUSE	2007 K-12 IT Survey
Number 1 Concern	Faculty Development, Support and Training	Funding IT	Infrastructure
Number 2 Concern	Funding IT	Governance, Organization, and Leadership	Faculty Development, Support and Training
Number 3 Concern	Infrastructure	Administrative/ERP/Information Systems	Funding IT

Again in 2008, the K-12 IT leaders reported that most of their financial resources were spent on infrastructure. The higher education leaders said that their schools were spending most of their financial resources on administrative/ERP/information systems (which was also their biggest expense in 2007).

On which IT issues is your school spending the most financial resources?	2008 K-12 IT Survey	2008 EDUCAUSE	2007 K-12 IT Survey
Number 1 Concern	Infrastructure	Administrative/ERP/Information Systems	Infrastructure
Number 2 Concern	Administrative/ERP/Information Systems	Infrastructure	Administrative/ERP/Information Systems
Number 3 Concern	Faculty Development, Support and Training	Security	Faculty Development, Support and Training

Conclusions

Information technology professionals in the K-12 education sector continue to be understaffed. Key ratios calculating the number of IT FTE staff in relation to the number of end users and IT assets they support show that IT departments are stretched even thinner than in 2007. In fact, around half of the schools reported that the number of computers had increased while the number of IT staff has stayed the same (this was also the situation when compared to two years ago and to five years ago). In addition, the percentage of IT jobs that were outsourced in 2008 declined slightly.

Many of the stressors remain the same. The percentage of schools that feel they do not have enough staff to integrate technology into the classroom has increased. The majority of technology leaders report not having enough staff to implement new technology or to sufficiently support the districts' needs. More than half of the school departments' workload is reactive.

Advances in technology continue to help K-12 schools operate more efficiently. Most schools now have fully implemented an enterprise level anti-virus solution. Around half have a functioning software-based help desk, and just under half have a functioning asset management system. Faculty intranets and student/teacher/parent portals are becoming more prevalent. Although the use of "Software as a Service" applications was down slightly from 2007, ease of deployment and the fact that these applications require less technical support remain the key reasons for adopting this software model.

Not surprisingly, it all comes down to money. IT funding remains the number one strategic issue identified by K-12 technology leaders. Given the current economic outlook, most school districts will be unlikely to add new staff even if the need is established. Tight budgets and reduced federal funding will also impact the purchase of new or additional IT assets. The majority of schools were already reporting that not enough financial resources were allocated to invest in new computer assets. There is also the beginning of a shift in the historical upward trend of computer purchases, with one quarter of those surveyed reporting that the number of computers in their districts did not increase in 2008. However, older computers will likely result in even more "reactive" work for IT staff. And with two-thirds of the schools already indicating that their IT budget was less than needed to support existing computer assets, maintenance of increasingly older technologies will add even more pressure. All of this indicates that K-12 information technology departments will be challenged to do even more with even less.

Survey Methodology

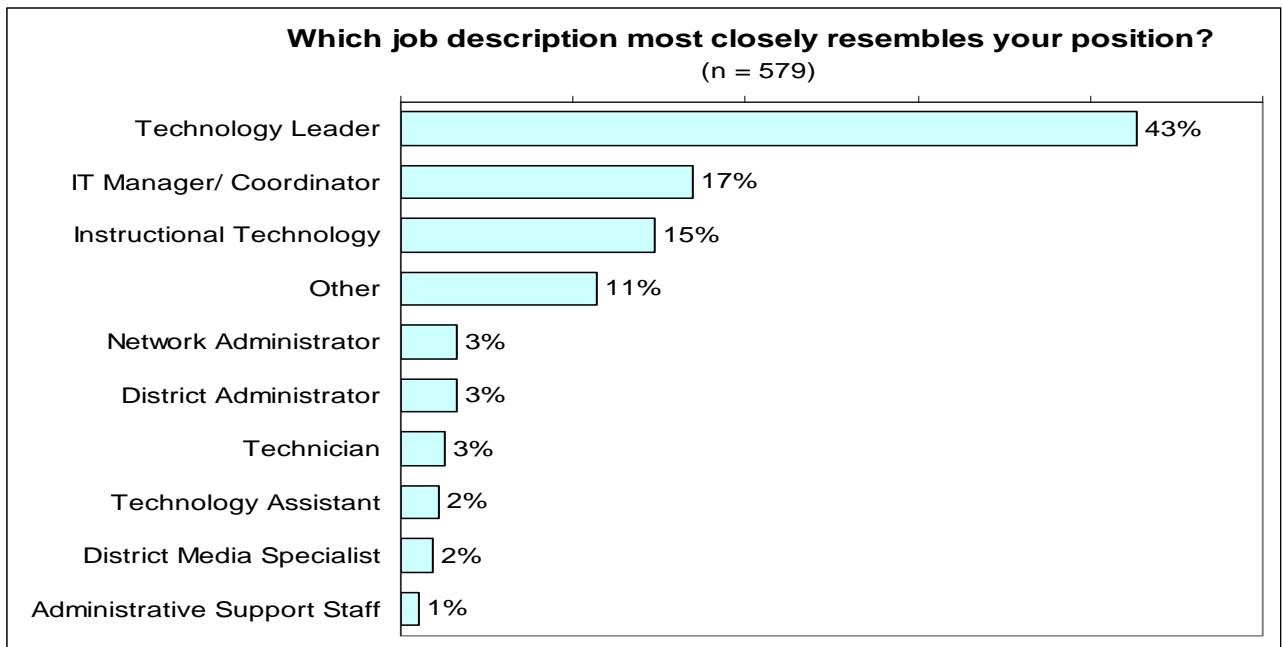
For the second year in a row, eSchool News and SchoolDude.com worked together to develop an online survey to address the many unique challenges facing the IT professional in education. This year, we also partnered with the Consortium for School Networking (CoSN) on this ground-breaking survey. During November 2008, an introductory letter was sent to school district leaders and IT administrators that included a hyperlink to the 30-question survey.

Respondents included both members and non-members of the SchoolDude community, subscribers and non-subscribers to eSchool News and the membership of CoSN. However, the 2008 survey was more narrowly aimed at IT leaders at the enterprise level, meaning that it was targeted at the highest district level personnel or school level leaders in the case of single school organizations. At the close of the survey in mid-December, 603 people had answered the questionnaire.

At the end of the survey, respondents were asked if they would like to be considered to participate in a virtual focus group to further explore the challenges facing IT in education today. One quarter—83 respondents—indicated an interest. During December 2008 and January 2009, eSchool News organized four sessions using EDRoom's Online Research Discussion forum. The results from this extension of the study were reported by eSchool News in March 2009.

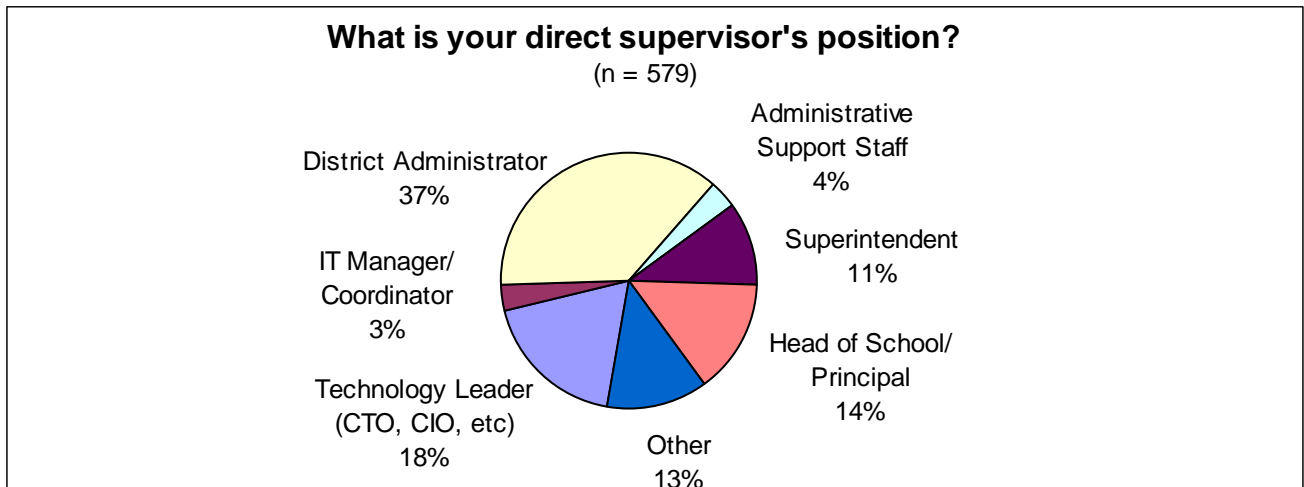
Demographics

The survey was fielded in November and December 2008 to a focused target audience: technology leaders responsible for the overall organization (district, diocese, etc.). By better targeting the survey, there were fewer respondents this year than to the 2007 survey (585 versus 899). However 43% of the 2008 respondents identified themselves as the primary technology decision-maker in their organization. This compares to 31% reporting that they were the technology leader in 2007. By getting more responses from the highest level decision makers at the highest level of operations, the quantitative data is likely to be more complete, accurate and encompassing. All of this helps to provide a better understanding of the overall situation in the IT sector of the K-12 market.



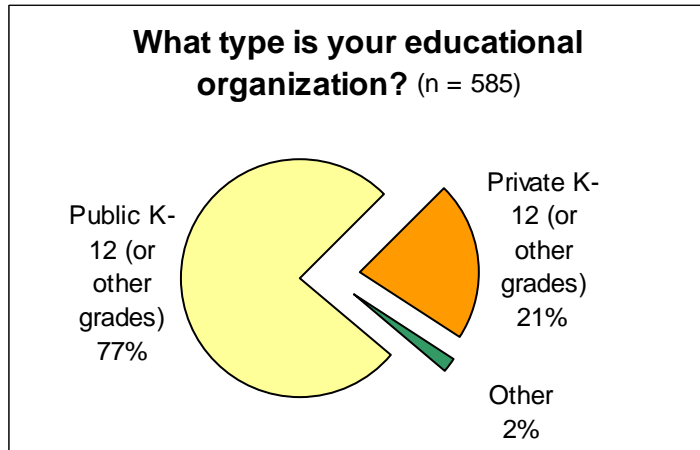
Answer Options	2008		2007	
	Frequency	Count	Frequency	Count
Technology Leader	42.7%	247	31.5%	281
IT Manager/Coordinator	16.9%	98	26.3%	234
Instructional Technology	14.7%	85	2.7%	24
District Media Specialist	1.9%	11	2.8%	25
Technician	2.6%	15	10.8%	96
Technology Assistant	2.2%	13	4.5%	40
Network Administrator	3.3%	19	4.2%	37
District Administrator	3.3%	19	2.6%	23
Administrative Support Staff	1.0%	6	3.0%	27
Other	11.4%	66	11.7%	104
answered question		579		891

In addition to their title and job description, participants were asked to whom they report. Given the large number of technology leaders in the survey, many indicated that they report to a district administrator, superintendent or head of school/principal. Most of the non-leader respondents report directly to the technology leader, indicating they are senior level staff themselves. The “Other” group includes responses such as business manager, CFO, COO and various assistant superintendent positions.

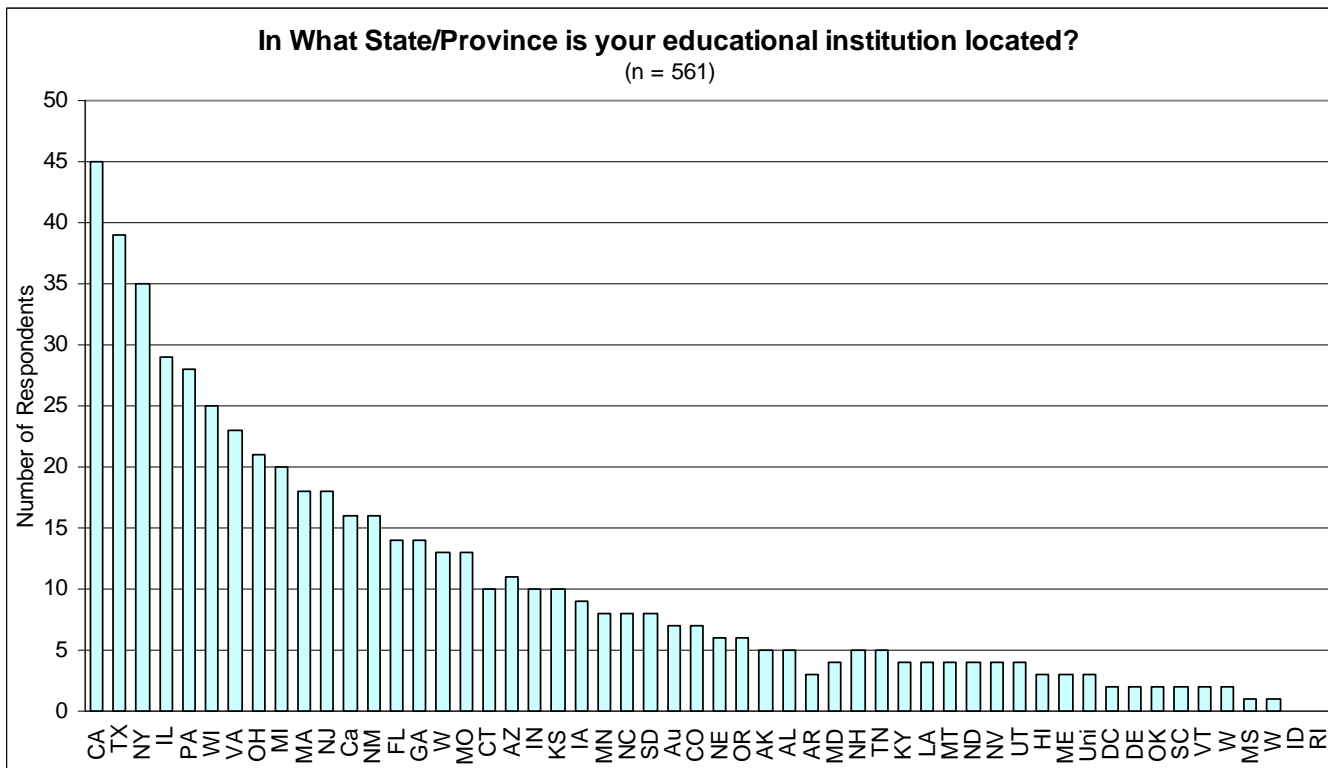


The majority of respondents (77%) were from public K-12 schools or school districts. One-hundred-twenty-four were from private schools, enough to allow valid segmentation for this group.

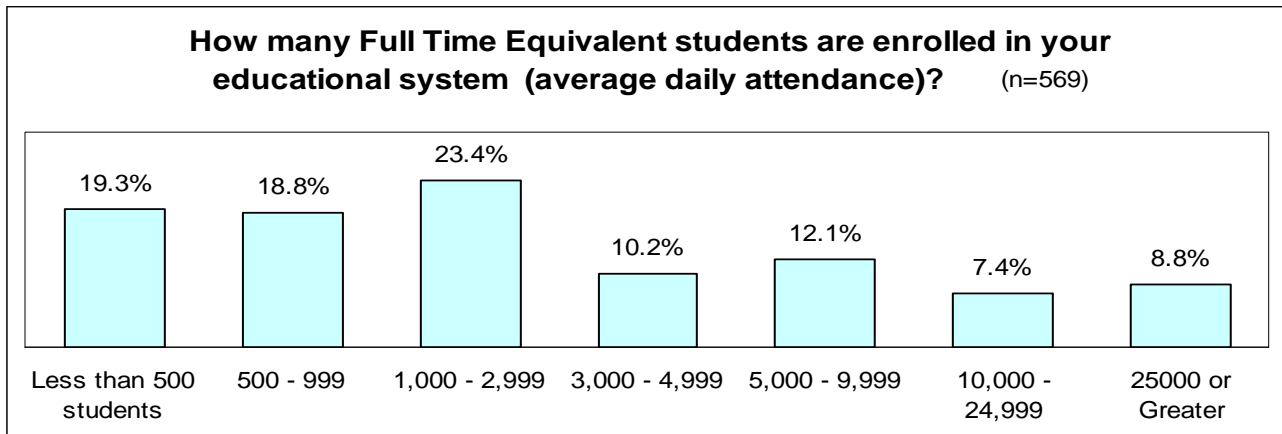
Respondents who reported being from higher education institutions, associations, vendors or consultants were filtered out of the analyses in this report. The remaining "other" includes technical and alternative schools.



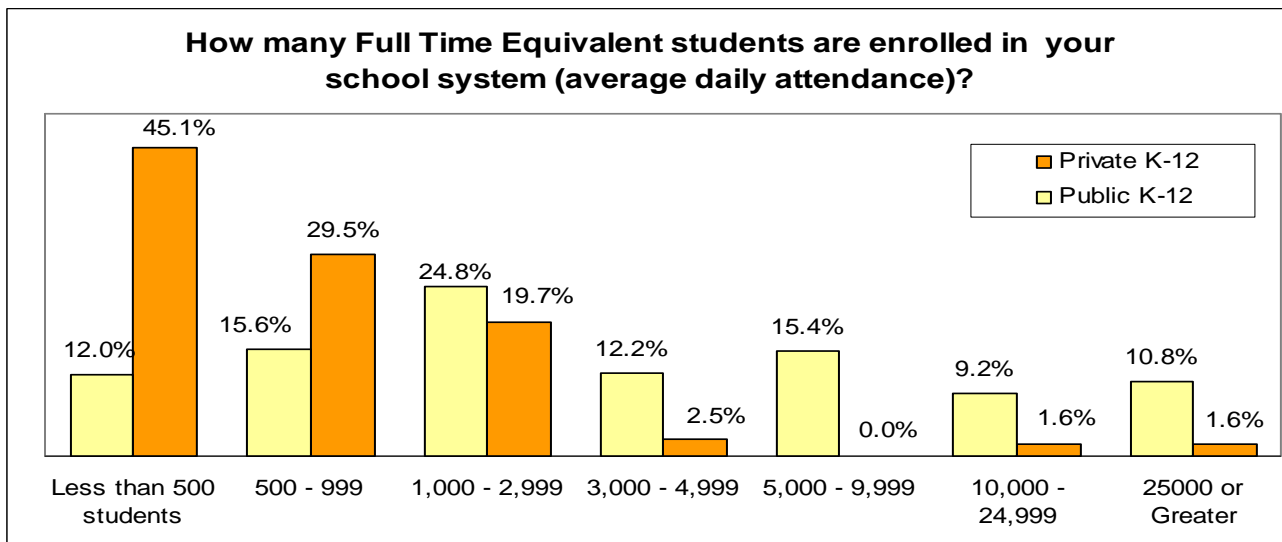
The survey respondents represent a balanced mix of demographic characteristics. Participants came from 48 states (Idaho and Rhode Island were the only 2 states not represented) plus the District of Columbia, Canada, Australia and the United Kingdom.



Almost two-thirds (62%) of the educational organizations that responded to the survey had fewer than 3,000 students enrolled. Similar to the 2007 survey, almost one-quarter of all responses came from schools/districts with 1,000-2,999 students.



Almost half (45%) of the private schools who participated in the survey had less than 500 students; whereas only 12% of public schools/districts were this small.



Although the majority of schools/districts had fewer than 3,000 students, the number of FTE students for these educational institutions ranged from 14 to 725,000 students. The large school districts and dioceses tend to skew the overall statistics, resulting in an average student enrollment of 10,963 (13,580 for public compared to 1,751 for private schools). Because of this, staffing and asset data should be studied on a per student basis.

MEAN NUMBER OF STUDENTS	National	Less than 500 Students	500 - 999 Students	1,000 - 2,999 Students	3,000 - 4,999 Students	5,000 - 9,999 Students	10,000 - 24,999 Students	25,000 or More Students
All Schools	10,963	280	706	1,738	3,761	7,050	16,111	90,380
Public Schools	13,580	284	708	1,812	3,776	7,111	16,192	92,008
Private Schools	1,751	270	698	1,399	3,487	0	14,500	50,300

Notes on Statistical Analysis and Survey Limitations

1. Although 603 individuals responded to this survey, some were not members of the targeted audience (public and private K-12 schools). The raw survey data was cleaned based on the answer to question 3: What type is your organization? The answer choices were "Public K-12 or other grades," "Private K-12 or other grades" and "Other." Ten respondents who answered "other" and then indicated that they were from higher educational facilities were thus dropped from the analysis. In addition, there were eight respondents who skipped this question and therefore were also dropped. This resulted in 585 respondents being included in this analysis.
2. There was a considerable drop-out rate with only 361 participants completing the survey. Interestingly, the majority completed the more quantitative questions, which often is the cause for survey drop out. Data from the incomplete surveys was considered valid and used in this report. However, the reader should note the number of responses when analyzing the results.
3. Statistical calculations were derived by eliminating responses that were: significantly different from the distribution (outliers), left blank and, when appropriate, equaled zero.

References and On-Line Resources

1. EDUCAUSE QUARTERLY, *Current Issues Survey Report, 2008*
2. EDUCAUSE Core Data Service, *Fiscal Year 2007 Summary Report* (Table 1-11)
3. SchoolDude.com, <http://www.SchoolDude.com>
4. eSchool News, <http://www.eSchoolNews.com>
5. CoSN, <http://www.cosn.org>
6. National Center for Education Statistics, <http://nces.ed.gov/>
7. National Clearinghouse for Educational Facilities, <http://www.edfacilities.org/>
8. Identity Theft Resource Center, ITRC Breach Report, http://www.idtheftcenter.org/BreachPDF/ITRC_Breach_Report_2008_final.pdf

About SchoolDude.com

SchoolDude is the #1 provider of on-demand software for facility, IT and business operations—designed exclusively for education! We help more than 3,800 educational institutions (school districts, colleges and universities, and private schools) save money, manage support services, and make a difference.

In 2008, 697 educational institutions selected SchoolDude to more effectively streamline work orders, IT incidents, preventive maintenance, event scheduling, utility analysis and more.

While we have long been known for our facility operations solutions, what is not as well known is that SchoolDude is one of the top vendors serving the senior-level IT decision maker. To help solve the challenge of “*too much stuff...and not enough staff*,” we launched our IT suite of products—[ITAMDirect \(hardware and software inventory management\)](#), [ITDirect \(incident and help desk management\)](#) and [ITWireless \(wireless incident management\)](#). Beginning in 2005, these IT products provided breakthrough pricing and performance unique to the education industry.

SchoolDude’s accomplishments serving the CIO/CTO/IT Director include:

- The rapid adoption of our three IT management solutions by more than 1,500 IT departments.
- Achieving market-leader status, becoming the #1 education-specific company serving educational institutions with the software as a service (SaaS), on-demand model.
- Our launch of ITAMDirect, which has provided a breakthrough in price/performance for managing hardware and software assets. With just a simple installation of an agent on a MAC or PC, instant and rich information on hardware and software assets is available. More than 300 educational organizations have adopted this new breakthrough approach.
- Our comprehensive, [integrated suite of products](#) that serves multiple departments—leveraging IT costs and training across the entire educational institution.

Being recognized by *Inc.*, *Deloitte*, and the *Triangle Business Journal* as one of the fastest growing private companies. We are also a three-time recipient of the *Best Places to Work Award* as well as the 2009 Stevie Award winner for Front-Line Customer Service Team of the Year.

Learn how SchoolDude’s IT operations management solutions:

- Save up to 30 minutes on every incident
- Streamline software license compliance, management and reporting by 30%
- Reduce the need for field audits of IT assets by 50% or more
- Website: www.schooldude.com
- Telephone: (877) 868-3833
- Email: sales@schooldude.com

About eSchool News

eSchool News covers education technology in all its aspects—from legislation and litigation, to case studies, to purchasing practices and new products. First published in March of 1998, eSchool News is a monthly print newspaper providing the news and information necessary to help K-20 decision-makers successfully use technology and the Internet to transform North America's schools and colleges and achieve their educational goals. The print newspaper is read by more than 300,000 school leaders, and a companion web site—eSchool News Online (<http://www.eschoolnews.com>)—is visited by more than 300,000 unique visitors each month, including 135,000 registered members.

eSchool News is a marketing solutions company serving the education technology industry. Throughout our 25-year history, we have created the most comprehensive portfolio of products and services in the industry. We offer access to the broadest reach and deepest range of education technology professionals worldwide across the entire technology spectrum: the creators, sellers and buyers of technology around the world.

Every day, our editorial, sales and marketing professionals share their content expertise to help our customers grow their businesses. We leverage the immediacy of online, the networking of face-to-face opportunities, the expert interaction of web seminars, and the breadth and depth of print to create compelling, focused media that delivers measurable results.

Mission

eSchool News helps educators succeed by:

- Providing the latest news, resources and reports on the applications of technology to improve learning
- Providing resources and tools to evaluate the funding, purchasing and the evaluation of technology in the education systems
- Assisting educators in forming collaborative alliances and providing a valuable resource bank for the exchange of information, ideas and best practices

To contact eSchool News:

- Online news: <http://www.eschoolnews.com>
- Free subscription: <https://www.eschoolnews.com/freeesn/index.cfm>
- Telephone: (800) 394-0115 ext. 199
- Email: CustServ@eschoolnews.com

About CoSN (Consortium for School Networking)

Founded in 1992, the Consortium of School Networking (CoSN) is the premier professional association for school district technology leaders. CoSN is committed to providing the leadership, community and advocacy tools essential for the success of these leaders.

Mission: Empowering K-12 school district technology leaders to use technology strategically to improve teaching and learning.

CoSN Core Beliefs:

- The primary challenge we face in using technology effectively is human.
- Technology is a critical tool to personalize learning and overcome barriers of time and space for each learner.
- Equitable and ubiquitous access to technology is a necessity.
- The effective use of technology for the systemic transformation of learning cannot occur without strong organization, leadership and vision.
- Technological fluency allows our children to be prepared for the world of today and tomorrow.
- Technology enables innovation in our educational systems, resulting in greater efficiencies and productivity.
- To maximize the benefits of technology solutions, the district technology leader should be part of the executive leadership team (CTO, CIO, etc.) of the education organization.
- Global connections are vital to transforming the education process and improving learning.

CoSN Initiatives:

Broadband Knowledge Center
Budgeting with Total Cost of Ownership
Calculating the Value of Investment
Cyber Security
Data-Driven Decision Making
Emerging Technologies
Empowering the 21st Century Superintendent

Green Computing
IT Crisis Preparedness
One-to-One Computing
Open Technologies in K-12
Student Tech Support
Web 2.0 in Policy & Leadership

To contact the Consortium for School Networking:

- Website: <http://www.cosn.org>
- Telephone: (202) 861-2676
- Email: irene@cosn.org