



2018

K-12 IT Leadership Survey Report

DUDE SOLUTIONS®



FORECAST⁵
ANALYTICS

Table of Contents

Overview	3
Introduction	3
Top 10 Findings	4
About the School Systems	5
Demographics	5
IT Leader Profiles	6
Education	6
Professional Background	7
Experience	8
Diversity	9
Technology Leadership in School Systems	10
Titles	10
Responsibilities	11
Purchasing Involvement.....	12
Salaries	14
District Initiatives	14
Top Priorities	14
Privacy & Security	15
Digital Instructional Materials	16
1:1 Goals.....	17
Closing the Homework Gap	20
Online Assessment Readiness	21
Open Educational Resources (OER).....	22
Interoperability	24
About Technology	25
Peer-to-Peer Reviews	25
Outsourcing	26
About Budgets.....	27
About Staffing	30
About Professional Development	33
In Closing.....	35
Summary.....	35
About CoSN	35
CoSN Resources	36
About Our Sponsor.....	37
About Our Partners	37

Overview

Introduction

CoSN has been supporting K-12 IT Leaders since the organization was established 26 years ago. Since then, technology and its uses have changed dramatically. So, too, have the roles and responsibilities of the K-12 IT Leader. No longer focused solely on infrastructure issues—the boxes and switches—IT Leaders now play an integral role in shaping the learning environments for students as well. To gain a better understanding of the changing responsibilities of IT Leaders and their educational technology challenges, CoSN launched its first IT Leadership survey in 2013. That survey had just 35 questions. This year’s survey has over 50. Questions have been added about new educational technology initiatives, such as Project Unicorn, and CoSN’s national aspirational leadership certification—Certified Education Technology Leader (CETL[®]). Survey respondents are also asked about relevant topics such as Open Education Resources (OER) and Single Sign-On (SSO). To better understand and address diversity issues, the survey started to collect data about sex, race, and ethnicity in 2015, establishing a baseline from which progress can be measured.

The report was undertaken with the support of Dude Solutions. With the help of our partner MDR, the survey was deployed to 12,781 districts. 41,384 data points from over 478 completed surveys¹ were collected and sorted by our partner Forecast5 Analytics.

Each year, the survey results help to inform CoSN’s programming and initiatives. Year-over-year and trend results provide unique insights into how the world of the IT Leader is, or is not, changing. This survey report provides valuable information for CoSN, IT Leaders, school districts and the organizations that serve and support those districts.

¹ The margin of error (4.4) was calculated based on completed surveys. americanresearchgroup.com/moe.html However, responses from incomplete surveys have also been included meaning the margin of error is smaller for some questions.

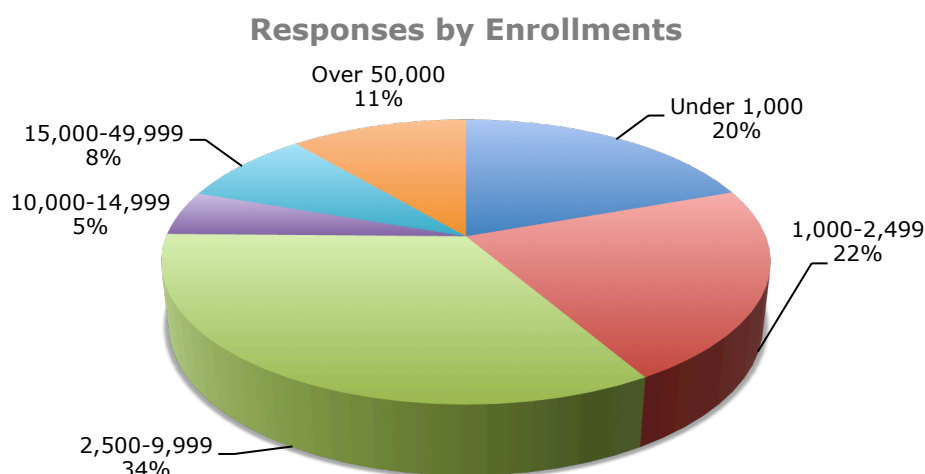
Top 10 Findings

1. Cyber Security and Broadband/Network Capacity tie as the top priorities for IT Leaders.
2. Budget constraints are ranked the top challenge for the fourth straight year.
3. Integrating technology into the classroom continues to be the most understaffed IT function.
4. Transition from print-to-digital is taking longer than projected.
5. Twice as many districts that are seeking to create a 1:1 (device to student) environment are providing the device versus using Bring-Your-Own-Device strategies.
6. IT Leaders are increasingly involved in digital content purchasing decisions. For 28% of districts, digital content cannot be purchased without their approval.
7. IT Leaders are outsourcing less than they used to.
8. Men and Women tend to take different paths to IT Leadership. More than half of women come to their role with an academic background in education and instruction, as compared to just a third of men. Whereas men primarily come from a technical background.
9. Significant progress has been made in the transition to digital assessments, with 80% ready or almost ready to conduct Common Core or statewide high-stakes online assessments.
10. IT Leaders are predominately White (90%). This is the same percentage as prior years and shows no progress towards diversifying the field to include more district IT Leaders of color.

About the School Systems

Demographics

As in all prior years, an overwhelming majority of survey respondents work in public schools. This year they comprised 95%. When segmenting respondents by district size, the breakdowns are consistent with prior years. A third of all respondents (34%) work in districts with enrollments of 2,500—9,999. The next largest group (22%) have enrollments of 1,000-2,999, and 20% support districts with less than 1,000 students. Eleven percent (11%) of respondents work in the largest districts—more than 50,000 students.



For consistency with the segmentation categories used by the National Center for Education Statistics (NCES), the new category of “Town” has been added to the breakdown of respondents by metropolitan status.² More than a third (36%) of survey respondents work in Suburban districts, 27% in Rural districts, 18% in Towns, and the smallest percentage of respondents (outside of 6% “unreported”) work in Urban districts (13%). Since Urban districts comprise only 5% of all districts by type—they are overrepresented in the survey results. Conversely, the majority of districts (57%) is Rural so those districts are underrepresented in the survey.³ However, in terms of enrollments, Rural districts account for only 18% of all students while Urban districts account for 30%.⁴

² https://nces.ed.gov/Programs/EDGE/docs/LOCALE_CLASSIFICATIONS.pdf

³ https://nces.ed.gov/programs/coe/indicator_tla.asp

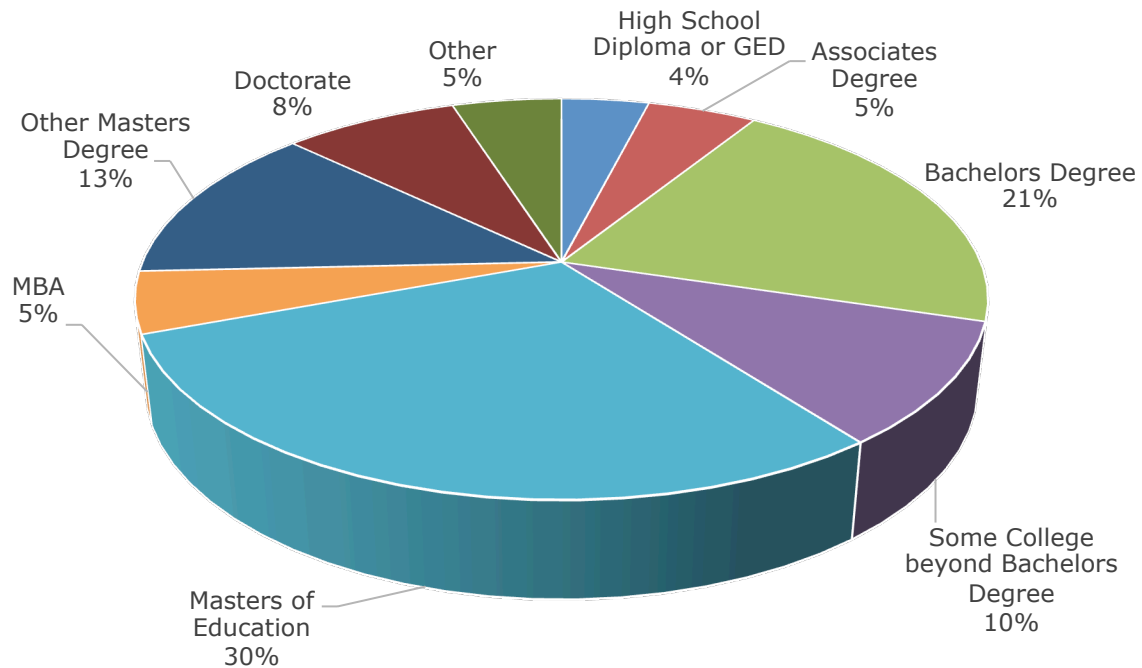
⁴ https://nces.ed.gov/programs/digest/d17/tables/dt17_214.40.asp?current=yes

IT Leader Profiles

Education

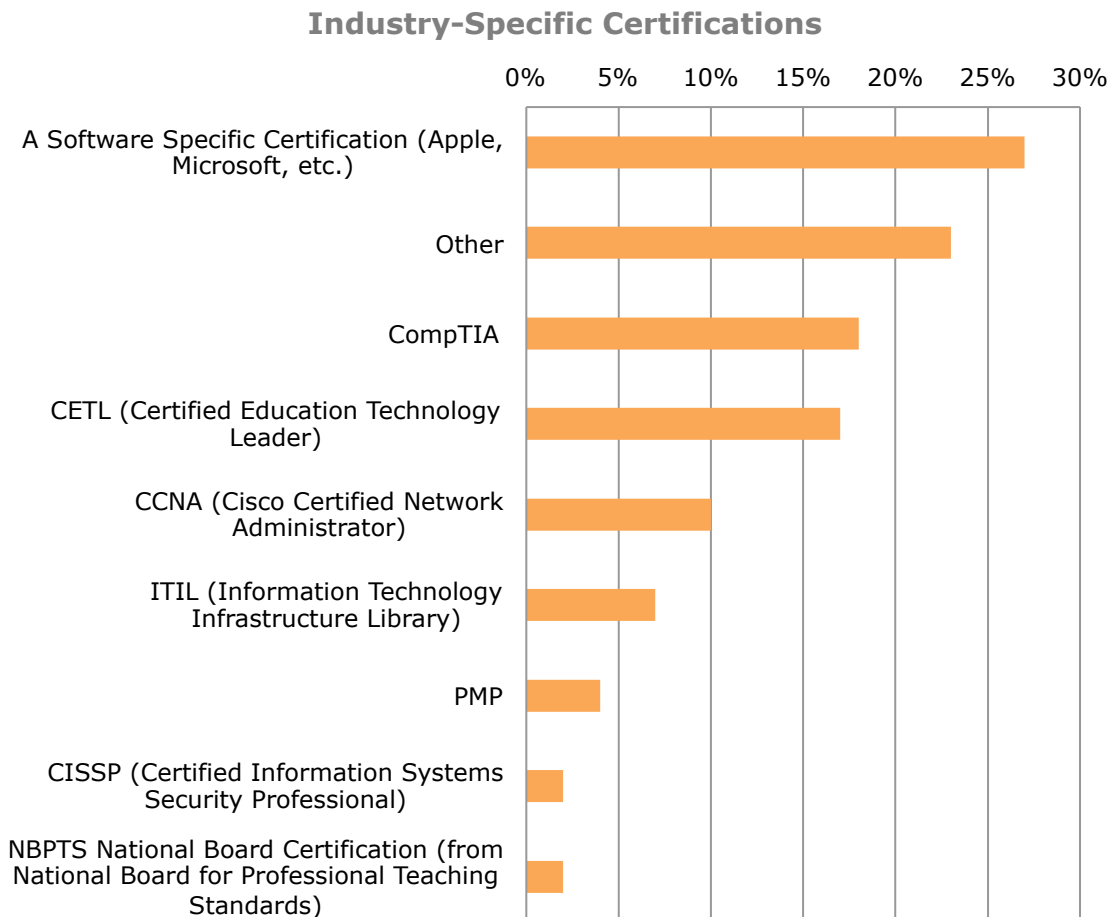
Consistent with findings from previous year's surveys, IT Leaders are high academic achievers. Almost three-quarters, 71%, of respondents have some college beyond a Bachelor's degree. Of those, 8% have Doctorates and 53% have Masters degrees. This is the second year that survey respondents were asked about the type of Masters degree they hold. A Masters of Education continues to be the most widely held degree, with 30%. The percentage of respondents with a Masters of Business Administration (MBA) has held steady at 5%.

Highest Level of Education



When looking at results for industry-specific certifications, a downward trend emerged in the percentage of respondents with these additional credentials. This year, not a single certification category hit the 30% response rate. While software-specific certifications continue to be the most commonly held credential with 27%, that percentage represents a significant drop from 38% in 2016 and 35% in 2017. Even the "Other" category, which serves as a wide net to catch all other types of additional credentials, hit a three-year low of 23%, down from 31% and 32% in prior years. These numbers suggest that IT Leaders who have held certifications in the past have chosen not to recertify or that departing and retiring credentialed IT Leaders are being succeeded by those without certifications. In the open comment area of the survey one

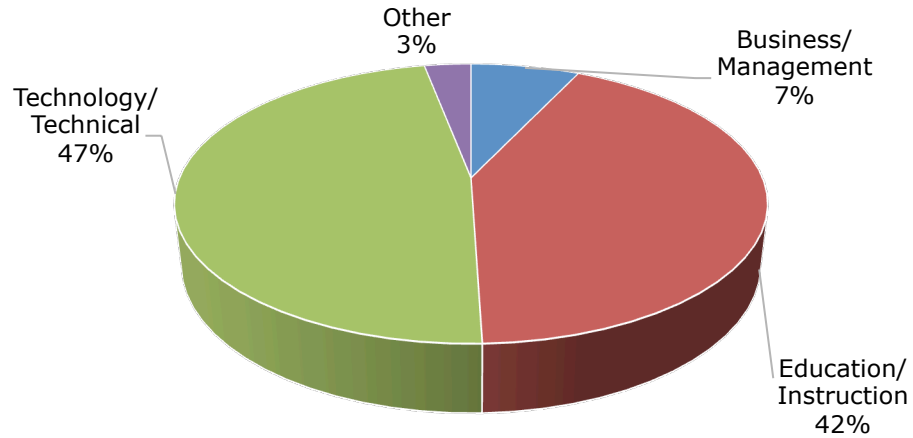
respondent wrote that they “need help for advocacy on the importance of staff certifications.” This comment suggests getting financial support for the credential is the problem. The district leaders responsible for approving expenditures, rather than IT Leaders, may be the cause for the declining certification rates.



Professional Background

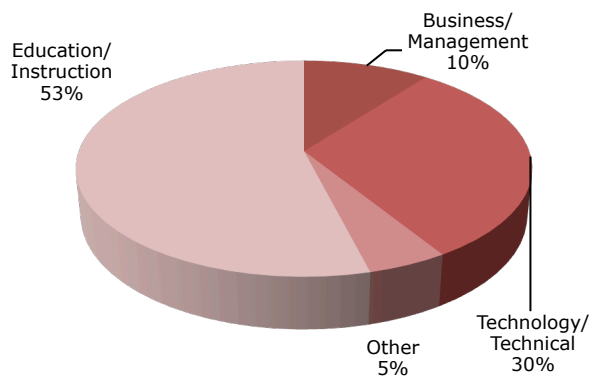
There are two main paths to becoming an IT Leader—a professional background in “Technology/Technical” (47%) and “Education/Instruction” (42%). However, these percentages represent shifts from prior year, when a majority of respondents reported they came from an education background (52%) and only 38% reported having a technical background. This increase in respondents with technical backgrounds appears to be linked to the increase of male respondents this year. The majority of men come to their IT Leadership roles with a background in technology. There were no significant differences from prior year in the percentages for “Business/Management” (7%)—which roughly correlates with the 5% of respondents with a MBA—or “Other” with 3%.

Primary Professional Background

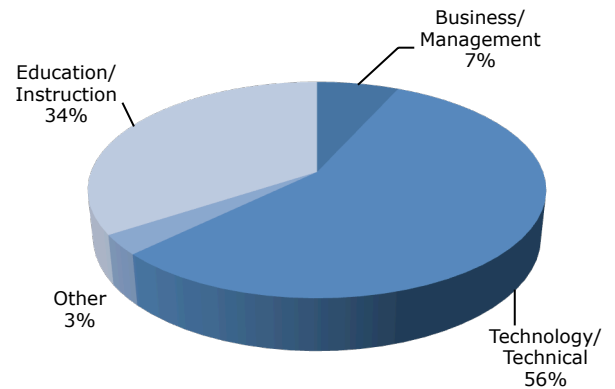


When looking at educational background segmented by sex, separate paths to leadership become apparent. The majority of women (53%) come to their role with an academic background in education and instruction, as compared to just a third (34%) men. The majority of men (56%) but only a minority of women (30%) have technology/technical educational backgrounds.

Female Respondents



Male Respondents



Experience

As in the prior year, about half of the respondents (49%) have been in their current position for less than six years. However, the percentage of those with less than one year was 7% in 2017 compared with only 1% this year—the lowest percentage in this category since 2013, when the rate was 2%. Although a multi-year analysis cannot be done for each category due to different breakdowns that were used, we can directly compare breakdowns for 10 years and less. The percentage of respondents in the 1-5 year category has steadily increased from (32%) five years ago to 48% today. This suggests that new IT Leaders are staying in their positions. .

Years in Current Position	2017	2018
Less than 1 year	7%	1%
1-5 years	43%	48%
6-10 years	21%	23%
11-20 years	23%	21%
More than 20 years	6%	7%

Diversity

Achieving racial and ethnic diversity in IT Leadership continues to be a challenge for school districts. There are large discrepancies between the make-up of their IT Leadership and the student population they serve. As in prior years, 90% of survey respondents of IT Leaders are White, compared to a student body which is 49% White. Only 2% of respondents identified as Black or African American, while 15% of all students are Black. The ratio is even worse when looking at ethnicity— 2% of respondents are of Hispanic origin, while Hispanic students account for more than a quarter (26%) of all students.⁵

This is the second straight year in which approximately two-thirds of all respondents are male— 70% this year and 64% in the prior year. In 2015, the first year the survey collected demographic data by sex, 54% of respondents were male. So while the majority of respondents has consistently been male, the size of that majority has increased. While further analysis is necessary, this data seems to suggest that IT Leadership is becoming more male dominated. However, even this smaller percentage of women compares favorably to the percentage of women in IT Leadership roles in the business sector, where according to a recent industry study, only “9% of senior IT leadership are women.”⁶

⁵ <https://eddataexpress.ed.gov/state-report.cfm?state=US&submit.x=34&submit.y=12&submit=View>

⁶ https://www.harveynash.com/usa/news-and-insights/HarveyNashKPMGCIOSurvey2017_US.pdf

When looking at breakdowns by district size, the female/male ratios tend to match the general survey respondent rate of 30% female and 70% male. Proportionally speaking, women and men are fairly equally represented in districts of all sizes. The only exception is in the largest districts—over 50,000 students—where men are disproportionately clustered. These positions tend to be the most highly paid in the sector with more status and responsibility for a large staff.

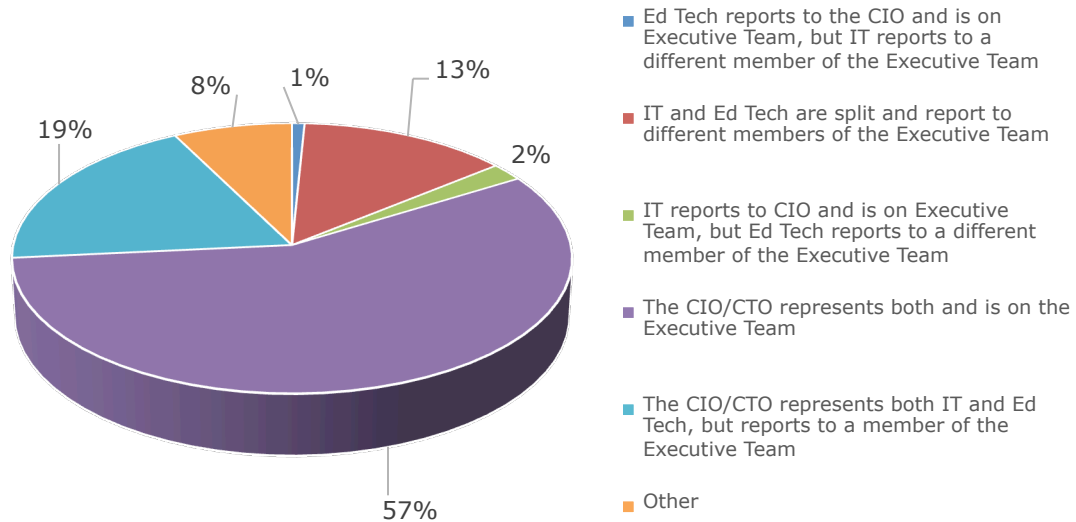
	Under 1,000	1,000 to 2,499	2,500 to 9,999	10,000 to 14,999	15,000 to 49,000	Over 50,000
Female	28%	25%	29%	31%	30%	4%
Male	72%	75%	71%	69%	70%	96%

Technology Leadership in School Systems

Titles

A clear majority (57%) indicated the CIO/CTO represents both IT and Ed Tech on the Executive Team—a CoSN best practice. The next most common scenario, a distant second with 19%, was the CIO/CTO that represents both functional areas but reports to a member of the Executive Team. The third most common scenario where IT and Ed Tech report to different members of the Executive Team (13%). Much less common are scenarios where IT and Ed Tech have different levels of representation on the Executive Leadership Team. Only 2% indicate that IT reports to the CIO/CTO and sits on the executive team (while their Ed Tech counterpart reports to another Executive Team member). Still fewer, only 1%, report the reverse—Ed Tech reports to the CIO/CTO and sits on the executive team (while their IT counterpart reports to another Executive Team member). The category for “other” reporting scenarios accounts for the remaining 8%.

IT and Ed Tech on the Executive Leadership Team



Responsibilities

Over the six years CoSN has conducted this survey, respondents have been asked about their primary job responsibility. Each year the answer receiving the highest response rate is “Both Instructional and Administrative Tech.” It has consistently been the majority response, with almost three-quarters (74%) this year. However, as one respondent commented:

“Replacing Technology Directors who have both an educational background and IT skillset is difficult in rural districts.”

Another survey respondent shared this perspective:

"In larger school districts, the complexities of networks, virtualization, compliance with FERRA/HIPAA/SOX/PCI and other laws; and the amount of devices running on these networks provide a good argument to separate the instructional tech from the Operational Tech. While they must work together, the function is separate."

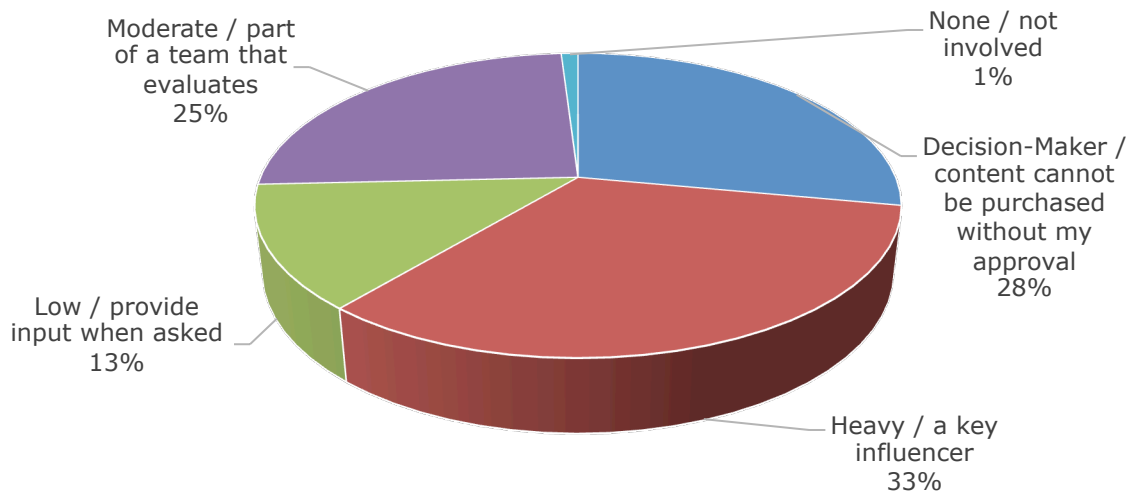
Responsibilities	2013	2014	2015	2016	2017*	2018*
Instructional Tech	2%	6%	6%	8%	11%	4%
Administrative Tech	8%	10%	10%	10%	10%	11%
Both Instructional & Administrative Tech	83%	77%	55%	65%	61%	74%
Specific Department, Division, or School	2%	2%	13%	8%	7%	4%
Other	5%	6%	16%	9%	12%	8%

* 2017 and 2018 totals more than 100% due to rounding of the nearest whole percent.

Purchasing Involvement

The IT Leader's role in digital content purchasing decisions is increasing. Eighty-six percent (86%) of respondents report having at least moderate involvement in their district's decisions to purchase digital content, as compared to 75% in the prior year. Correspondingly, the categories of "not involved" decreased from 5% to 1% and "low input" decreased from 20% to 13%. The "Decision-Maker/content cannot be purchased without my approval" response had the most significant year-over-year change, increasing from 16% in 2017 to 28% this year. In 2016, only 8% of respondents indicated they made the final decision. This double-digit increase over three years suggests a growing realization that the purchase of digital content needs to take into account considerations beyond the quality of its pedagogy and its price. Technical aspects need to be evaluated to ensure that digital content can deliver on its promise.

Involvement in Purchase of Digital Content



While the overwhelming majority of IT Leaders have some responsibility for purchasing digital content, their involvement varies considerably according to the type of content being purchased. More than three-quarters of respondents (79%) are involved in the purchase of productivity tools—the category with the highest involvement. However less than a third (32%) are involved in purchasing decisions for Teaching Aids. The overall ranking of most-involved to least-involved has been consistent year-over-year. Productivity Tools and Content Creation Tools, this year with 79% and 69% respectively, have always ranked first and second. Supplemental digital content, this year with 48%, continues to rank a distant third. It is important to note that Core Curriculum and Formative Assessments show the most significant increases over the three-years. Districts purchasing digital content for Core Curriculum and Formative Assessments have recognized that IT Leaders need to play a larger role in assessing the products in those areas.

Digital Content	2016	2017	2018
Core Curriculum	28%	38%	42%
Supplemental	38%	48%	48%
Formative Assessments	28%	38%	44%
Literacy Aids	24%	35%	35%
Library & Reference Tools	39%	47%	43%
Teaching Aids	28%	33%	32%
Productivity Tools	67%	68%	79%
Content Creation Tools	57%	59%	69%

Salaries

Almost a quarter of all respondents (23%) selected “prefer not to provide” when asked about their salary. Therefore, a clear conclusion that can be made with salary data is that a significant minority of IT Leaders don’t like to talk about how much money they make. The reason for the steep increase—from 2% or 3% in all prior years to 23% this year —is likely the result of the change in question construction and survey deployment. This year, respondents were asked to enter an exact salary amount instead of selecting a range. Also, surveys were sent to specific IT Leaders in each district and responses were limited to one per district. This modification enhanced data quality but eliminated anonymity. (NOTE—CoSN does not see any personally identifiable information or have access to it for preparing this report. Data is only provided in the aggregate.) While data was collected for each salary range, the picture it paints is blurred because of the almost one quarter of respondents who opted-out.

Salary	2013	2014	2015*	2016	2017	2018
Under \$70K	30%	24%	30%	24%	29%	15%
\$70K-99,999	36%	35%	39%	35%	32%	29%
\$100K-129,999	26%	27%	23%	26%	25%	22%
\$130K-159,999	5%	10%	6%	8%	8%	9%
\$160K-200K	1%	1%	1%	4%	3%	2%
More than \$200K	Less than 1%	Less than 1%	Less than 1%	Less than 1%	Less than 1%	Less than 1%
Did not provide	2%	3%	2%	3%	2%	23%

* 2015 totals more than 100% due to rounding of the nearest whole percent.

District Initiatives

Top Priorities

Mobile learning, the number one priority in 2017 and ranked second or third since 2014, failed to make the top three in 2018. This year there is a tie for number one— Broadband & Network Capacity and Cyber Security. This reflects a jump of one place for Broadband, which ranked second in the prior year. Cyber Security jumped two places from its third place rank. Breaking into the top three for the first time is Data Driven Instruction & Decision Making. All three of these priorities are connected and make it clear that data is a district priority—accessing, managing, leveraging, and keeping it secure.

	2013	2014	2015	2016	2017	2018
1	BYOD	Assessment Readiness	Assessment Readiness	Broadband & Network Capacity	Mobile Learning	Broadband & Network Capacity Cyber Security *
2	Assessment Readiness	Mobile Learning	Wireless Access	Wireless Access	Broadband & Network Capacity	
3	Broadband Access	Wireless Access	Mobile Learning	Mobile Learning	Cyber Security	Data Driven Instruction & Decision Making

*Tie for number one

Privacy & Security

Cyber Security's leap to a number one priority does not come as a surprise. A recent study on network security across business sectors found that "education is the most vulnerable vertical."⁷ In Higher Education, Information Security has been ranked as the number one issue for IT Leaders for the past three years.⁸ At the time of this writing, there have been over 300 K-12 cyber security incidents reported since 2016, "resulting in the disclosure of personal information, the loss of taxpayer dollars, and the loss of instructional time."⁹ The threats are real and the consequences are severe when it comes to data breaches or the misuse of students' personally identifiable information (PII). When asking IT Leaders to rate the importance of privacy and security of student data, 68% rated it as more important than the prior year, including 30% who rated this issue as "much more important." What is most revealing is the response rate for "less important"—zero.

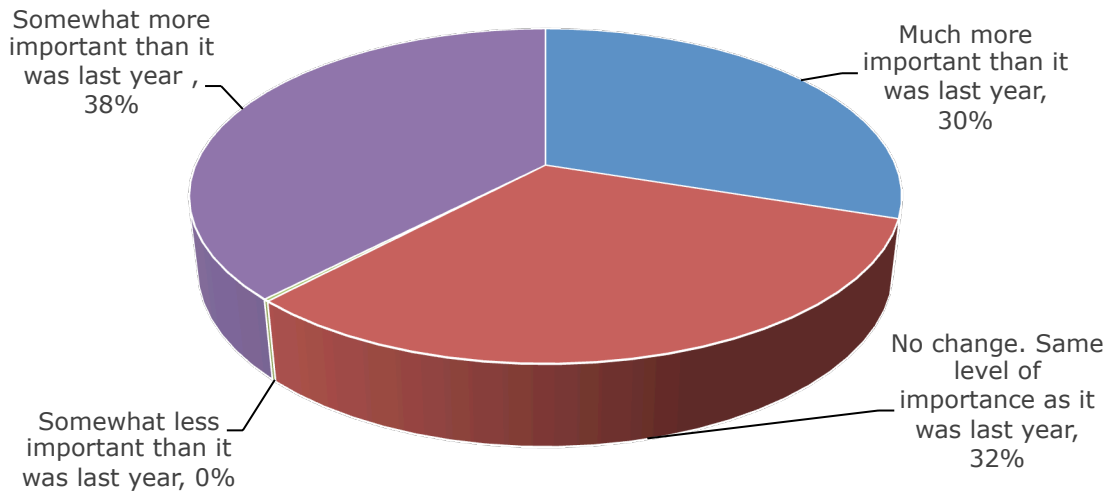
⁷ Global Application & Network Security Report 2016-2017, radware

<https://www.radware.com/assets/0/314/6442478110/01f31b9e-6dfb-49de-86fe-5dd0954bdeac.pdf>

⁸ <https://www.educause.edu/research-and-publications/research/top-10-it-issues-technologies-and-trends/2018>

⁹ <https://www.edtechstrategies.com/k-12-cyber-incident-map/>

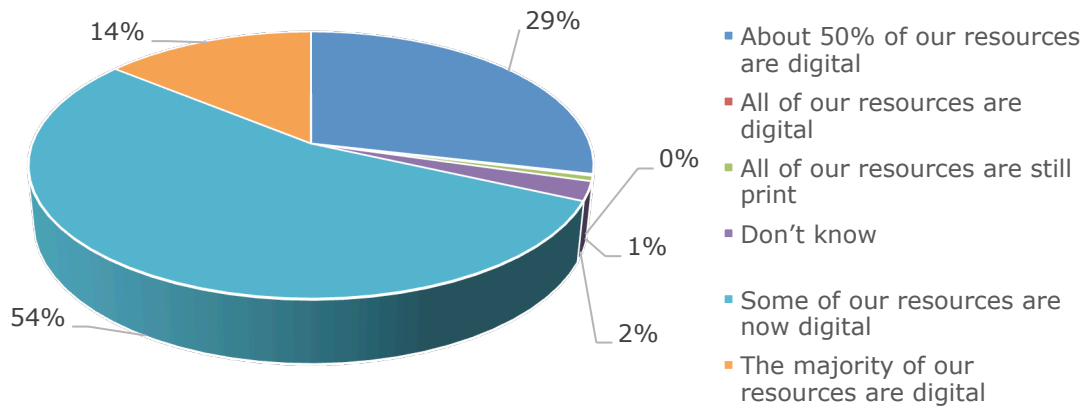
Privacy And Security Of Student Data



Digital Instructional Materials

In 2015, survey respondents were asked to project the degree to which print instructional materials would be replaced by digital materials over the next three years. This year, we asked to what degree that transition from print to digital had actually taken place. Looking at the extreme ends the spectrum—print-only and digital-only—the projections were on target. Very few districts expected to be, or actually are, print-only (less than 1%). While no districts reported being digital-only, less than 3% of districts expected to be at this point. Projections for a 50/50 ratio of print/digital were roughly in line as well. Three years ago, 34% of survey respondents projected that their districts would be 50% digital in 2018, compared to 29% who reported they are 50% digital in 2018. The greatest discrepancy between expectations and attainment was the degree to which the use of print materials persists. Three times as many districts (54%) are primarily print-based than were projected (16%). Three years ago, 84% of respondents expected instructional material to be at least 50% digital. Three years later, only 43% of respondents reported that is the case. While districts are transitioning to digital materials, it is not at the pace predicted. A possible explanation could be the lack of interoperability between digital content and district content platforms. As noted earlier, IT Leaders are playing a larger role in digital content purchasing decisions, with the most growth in core curriculum. Perhaps their greater involvement is a result of issues that arose when digital materials were adopted without technical vetting.

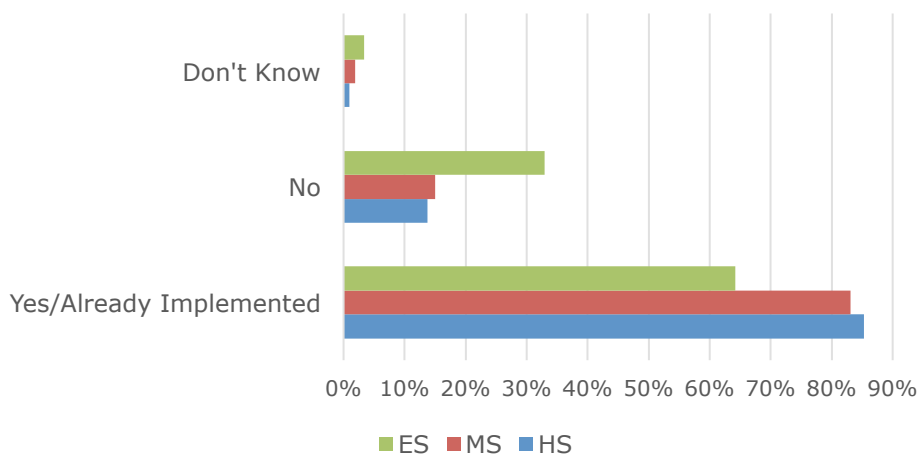
Print Instruction Materials Replaced By Digital



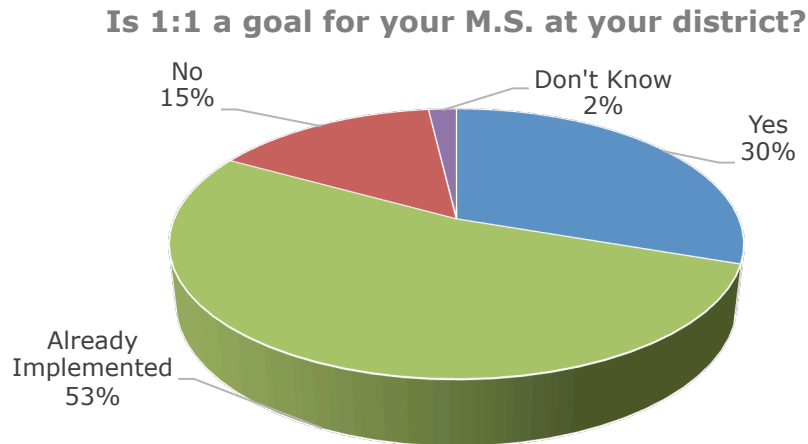
1:1 Goals

Technology can enable a personalized learning environment for individual students. 1:1 initiatives support personalized learning goals. In this survey, 1:1 was defined as “the approach that every child has an assigned device whether this is provided by a district program or BYOD.” Respondents were asked about their districts’ 1:1 goals for each school level. A majority of respondents indicated that for every level, 1:1 is a current goal or is a goal already achieved.

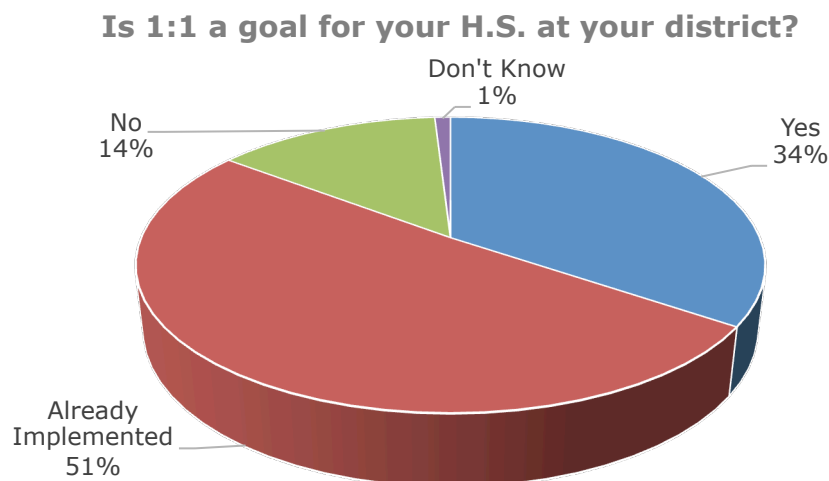
1:1 Goals by School Level



Middle Schools have the highest rate of 1:1 implementation with 53%. Combined with the 30% of those who indicated 1:1 is a goal for their district, Middle School implementation of 1:1 can be expected to grow to 83% in the near future.



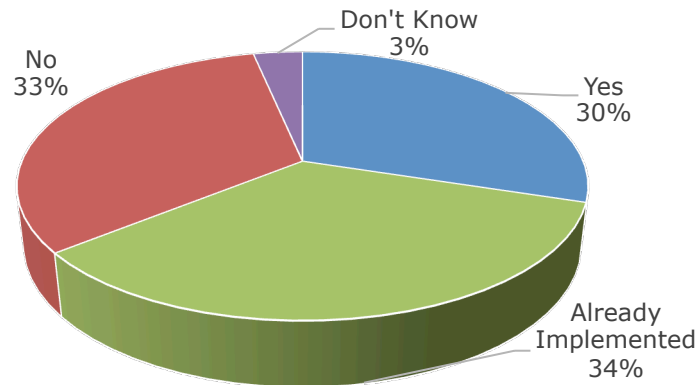
High School 1:1 responses closely mirror those of Middle School, with 47% implementation rates and 32% citing 1:1 as a goal. These numbers combine for a 79% response rate for 1:1 as a goal for High Schools.



Elementary Schools had the least interest in 1:1. A third of respondents (33%) reported that 1:1 was not a goal for their Elementary schools, compared to response rates of 15% and 13% respectively for their Middle and High Schools. However, for the majority (64%) of Elementary

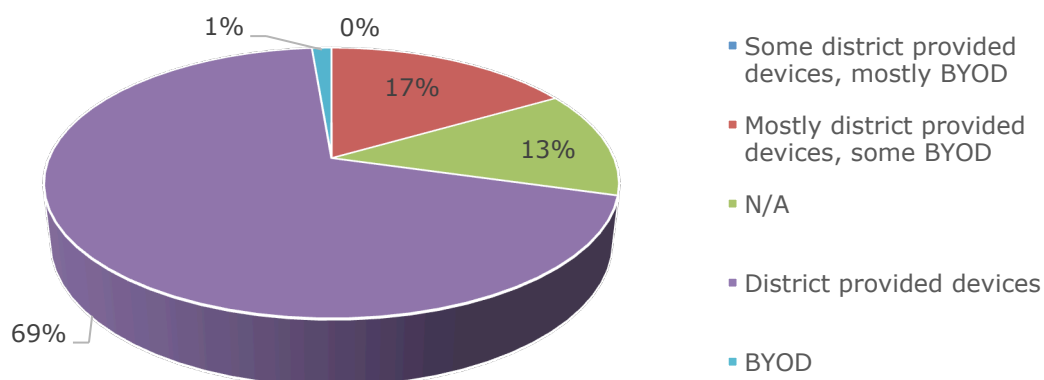
Schools 1:1 is a goal or has already been implemented. While the debate continues about how and how often young children should use devices, these response rates indicate that devices will be increasingly leveraged for young students in their educational environments.

Is 1:1 a goal for your E.S. at your district?

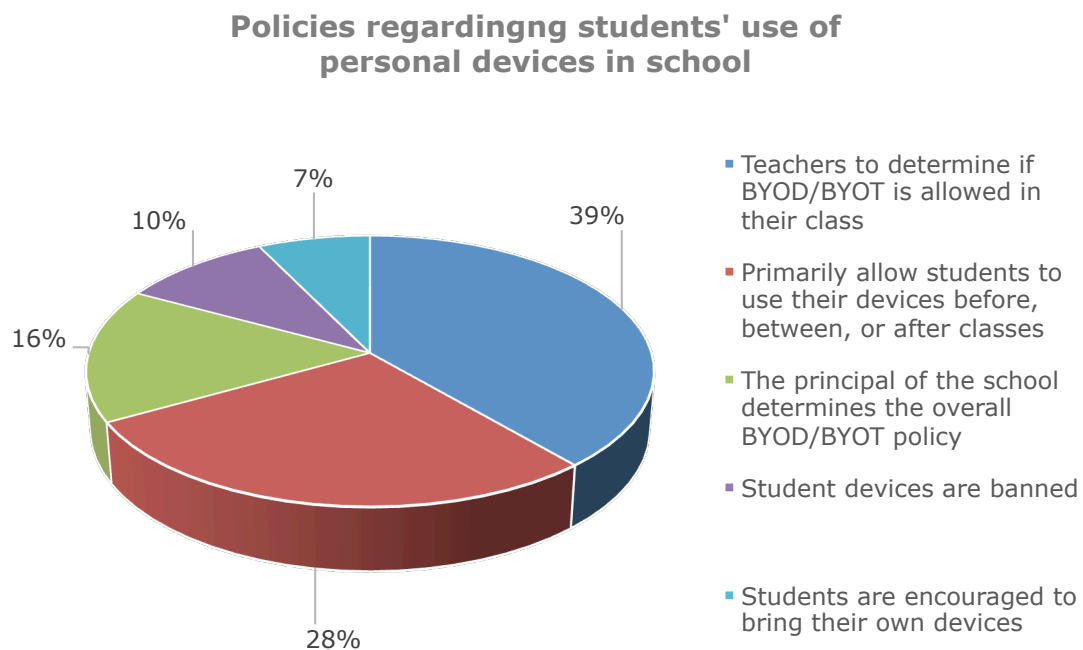


When asked about the methods being used to achieve 1:1 goals, across all school levels, the vast majority (69%) of districts are providing devices. Bring Your Own Device (BYOD) solutions are used by only 18% of districts. This aligns with prior year survey responses that indicated a trend away from BYOD initiatives. The availability of affordable devices, most notably Chromebooks, and other devices designed for the education market, interoperability requirements, and equity issues are likely the key factors accounting for the popularity of providing devices rather than the development of BYOD programs.

1:1 methods



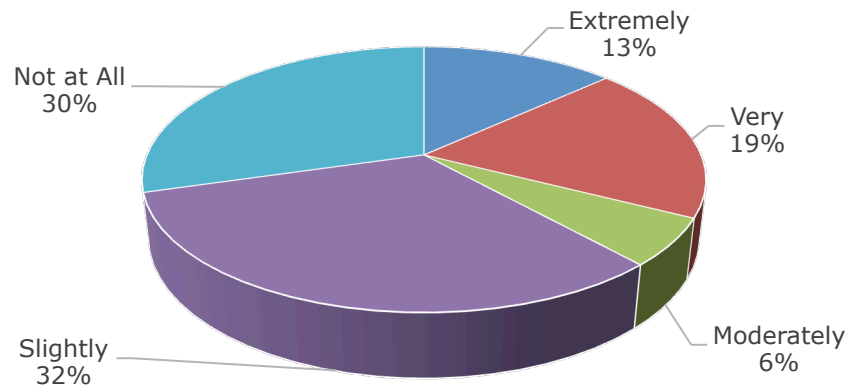
With the same response rate (39%) as the prior year, the most common district policy regarding students' use of personal devices in school is allowing teachers to decide about their use at the classroom level. The next most common policy, with 28%, is allowing "students to use their devices before, between, and after classes," an increase from 20% from the prior year. Only a tenth of districts have policies completely banning devices, slightly outpacing districts (7%) who actively encourage their students to bring their own devices. When results were segmented by metro status, Urban districts were the least likely to encourage BYOD (15%) compared with Suburban districts (41%). However, Urban districts were also least likely to ban devices (7%) as compared to Suburban districts with 43%.



Closing the Homework Gap

Digital Equity/lack of broadband access outside of school for learning, often referred to as the homework gap, is a concern for 70% of all respondents, with a third (32%) rating the issue as "very" or "extremely" important. However, roughly the same percentage of respondents (30%) indicates the issue is "not at all" important. The relatively large size of that percentage made a bit more sense when segmenting the responses by metro status. Two-thirds (66%) of those that are not concerned with homework gap issues are in Towns (22%) and Suburban districts (44%) as compared to just 7% of Urban districts.

Importance of Digital Equity Outside of School



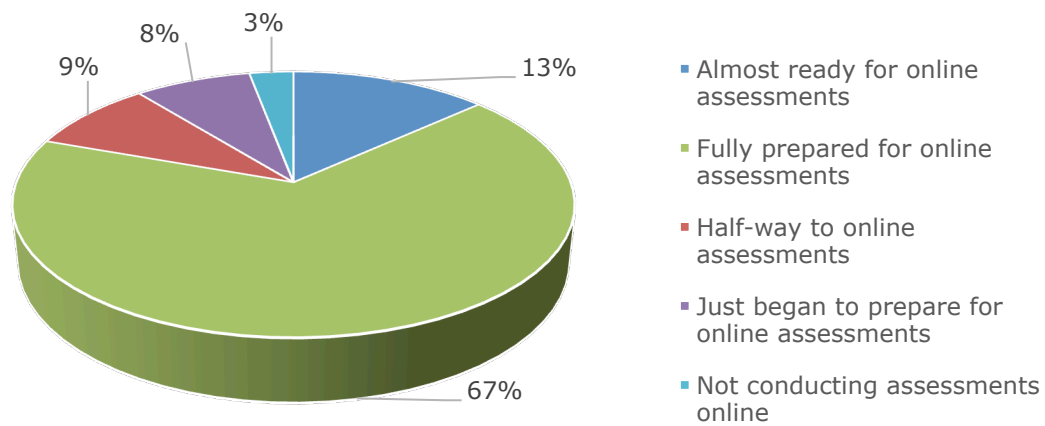
Online Assessment Readiness

The vast majority (80%) of respondents report their districts are ready or almost ready to conduct online assessments. This is a complete reversal from 2013 when the Assessment Readiness Survey conducted by the Partnership for Assessment of Readiness for College and Careers (PARCC) found that 80% of schools would not meet the requirements for online assessments.¹⁰ Unlike the print-to-digital transition, which has been slower than expected, the transition to digital assessments has been swift. It is important to point-out that “assessment readiness” was a top-ranked priority for several years and the number one priority for two years running—a strong indicator that once key goals are identified, districts know how to achieve them. However, resolve alone is not enough. As one respondent put it—

“...the current financial climate does not allow the full support needed to implement all that we want to implement.”

¹⁰ www.parcconline.org

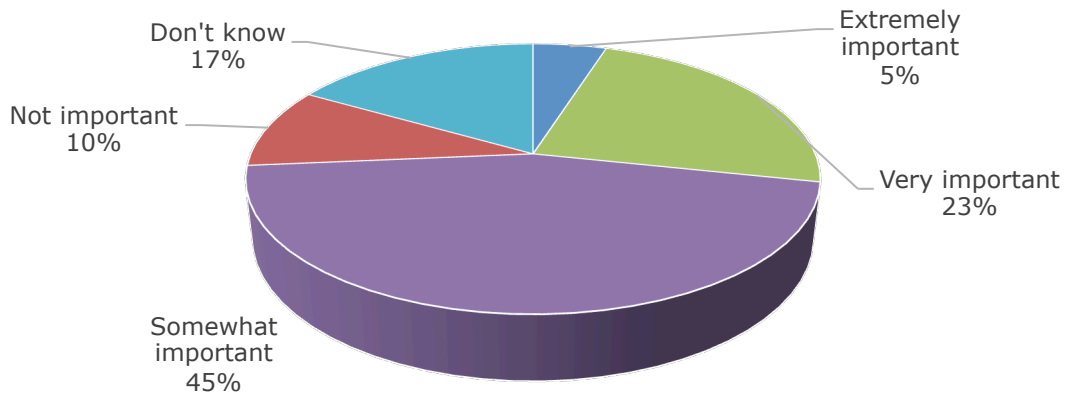
Ready to implement Common Core or statewide high-stakes online assessments



Digital Open Educational Resources (OER)

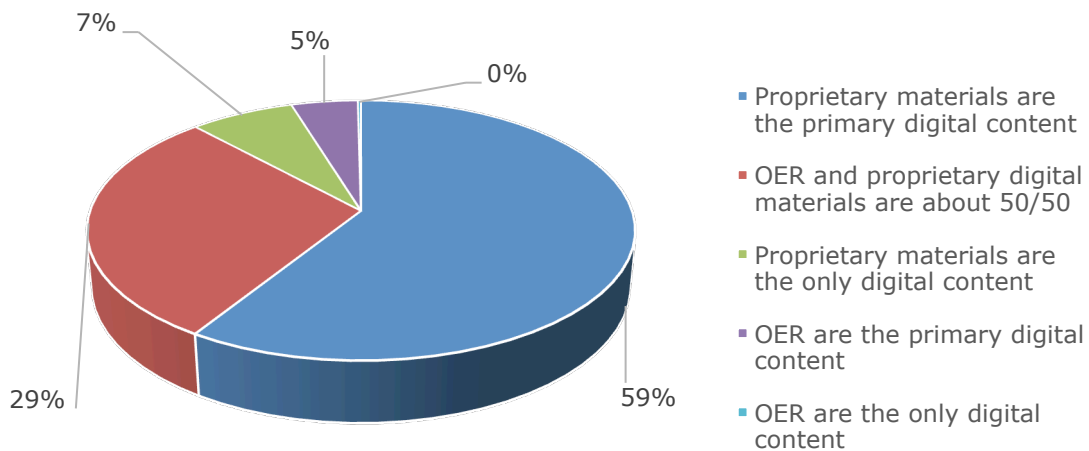
The importance of digital OER has consistently been recognized by a large majority of districts since this question was first asked in 2015. This year 73% of respondents reported that OER is important to their district's digital content strategy. However, this rate indicates a slight dip in the degree of importance, compared to 2017 and 2016, which had rates of 79% and 78% respectively. While the "somewhat important" category has been fairly consistent—45% this year, 44% in 2017, and 41% in 2016—the response rates have been creeping up and taking percentage points from the "very important" category and the "extremely important" categories. The 5% rate for "extremely important" is less than half of the rate (11%) of the two previous years. These rates suggest that digital OER may be becoming less important, an unexpected finding, especially in light of the recent federal push and the number of organizations promoting OER use. One factor that might be skewing results is 17% of respondents who "don't know" how important OER is to their district's digital content strategy, almost twice the 9% of the prior year. This result in itself might suggest that districts are in the process of reevaluating the importance of digital OER.

OER Importance to digital content strategy



When looking at the current use of digital OER, the majority (59%) of respondents indicate that proprietary materials are still the primary source of digital content. However, only 7% report that propriety materials are the only digital content indicating that 93% of districts are using digital OER to some extent. More than a quarter (29%) report that digital OER comprise about 50% of all digital content. This 29% appears to directly correlate with the 29% of respondents who rated digital OER either “very” or “extremely” important to their district’s digital content strategy.

OER replaced proprietary digital content



Interoperability

A fifth of respondents (20%) indicate that their districts have fully implemented Single Sign-On (SSO), with 53% reporting SSO as partially implemented. With a combined rating of 73% in both categories, SSO ranks as the most implemented of the four interoperability initiatives in the survey. Data Interoperability is the second most popular initiative with a 70% implementation rate. Content Interoperability is third with 61% and just one percentage point behind Data Dashboards is a very close fourth with 60%. We also asked about districts' awareness of Project Unicorn, a new initiative that advocates for schools to sign an interoperability pledge. Over a quarter (26%) of respondents noted an awareness of this early effort.

Interoperability Initiative	Fully Implemented	Partially Implemented	Planning	Don't Know	Not at All
Single Sign-On	20%	53%	12%	2%	13%
Content Interoperability	9%	53%	13%	11%	13%
Data Interoperability	10%	60%	12%	9%	9%
Data Dashboards	13%	47%	19%	7%	13%

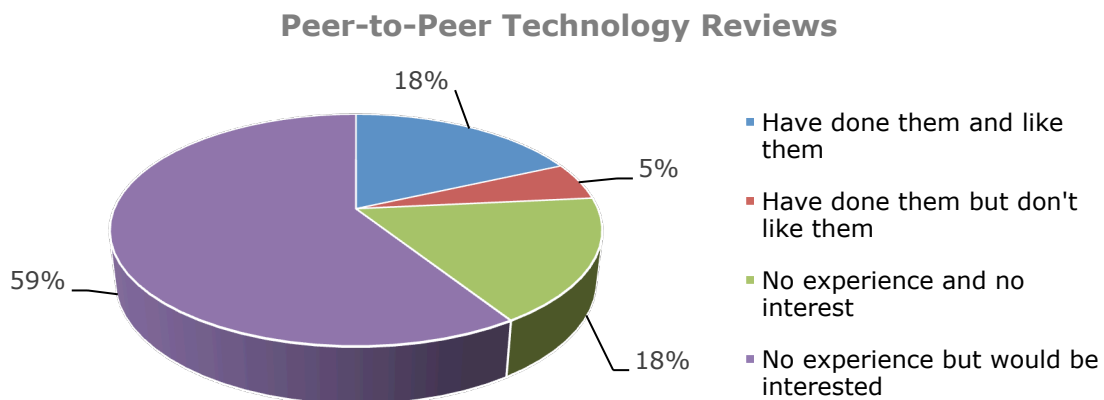
When asked to “rate the degree to which you are familiar with the following technical standards,” respondents indicated they were most aware of SAML and SIF, with a majority reporting they are moderately to extremely familiar with them, 60% and 59% respectively. When adding those who have at least “heard the term,” SAML’s rates increase to 73% and SIF’s to 71%. As both standards are at least a decade-old, it is not unexpected that SAML and SIF would be well-recognized. OAUTH, another standard that is more than a decade old, is the third most recognized standard with 63% of respondents having at least heard the term. OneRoster, a newcomer released just three years ago, is the fourth most recognized standard with 60%. The degree to which IT Leaders are familiar with this standard, despite its relatively short life, is likely the result of the degree to which rostering is an issue for districts. Xpress Roster, another new standard also designed to address rostering, is less well known with 30%. Results indicate that, to a significant degree, respondents are unfamiliar with the various technical standards. A majority of respondents did not recognize half of the standards on the survey—not even by name. Only the top five most recognized standards (SAML, SIF, OAUTH, OneRoster, and LTI), avoided that result. While IT Leaders are not expected to have a developer’s understanding of standards, some degree of familiarity will be required as districts move away from single-vendor solutions.

Standard	Not at All	Have Heard the Term	Moderately	Very	Extremely
CEDS	66%	22%	10%	2%	0%
Common Cartridge	58%	14%	15%	9%	4%
Ed-FI Data Standard	52%	20%	18%	7%	4%
LTI	50%	19%	17%	10%	4%
OAUTH	37%	19%	23%	14%	8%
OneRoster	40%	21%	20%	14%	6%
QTI	66%	20%	9%	4%	1%
SAML	27%	13%	27%	20%	13%
SIF	29%	11%	26%	20%	13%
Xpress Roster	70%	20%	8%	2%	0%

About Technology

Peer-to-Peer Reviews

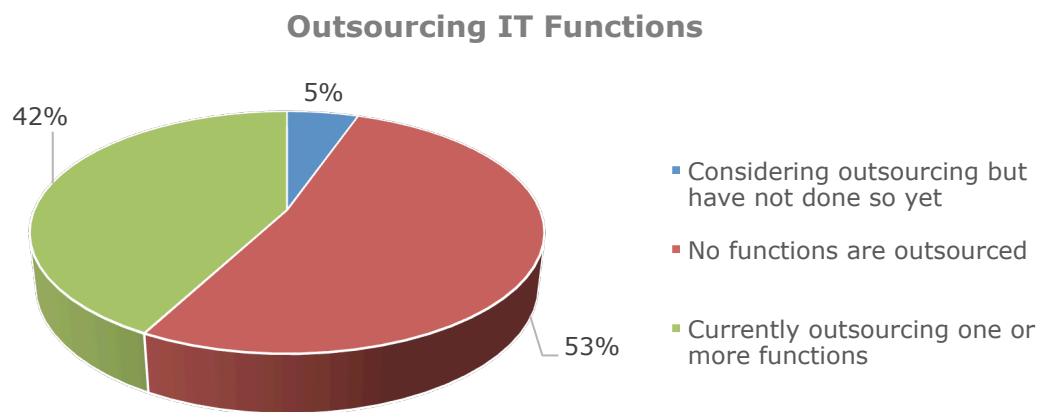
Peer-to-peer technology reviews are evaluations based on a matrix of best practices defined by peers who have successfully converted to a digital environment. It's a common practice in software development and is a new program available from CoSN to school districts.¹¹ However, the practice of peer reviews is still not common. When asked about their experience with the peer review process, more than three-quarters of respondents (77%) have "no experience." Though the percentage of who have been involved with peer reviews is small (23%), of those who have done them, a large percentage (78%) like them.



¹¹ <http://www.cosn.org/PeerReview>

Outsourcing

Outsourcing is frequently used to gain access to skills and competencies that do not exist in-house and/or as a strategy to reduce costs. Currently a minority of respondents (42%) reported their districts use an outsourcing strategy for IT functions (e.g. support for users, software installation), with another 5% considering it.

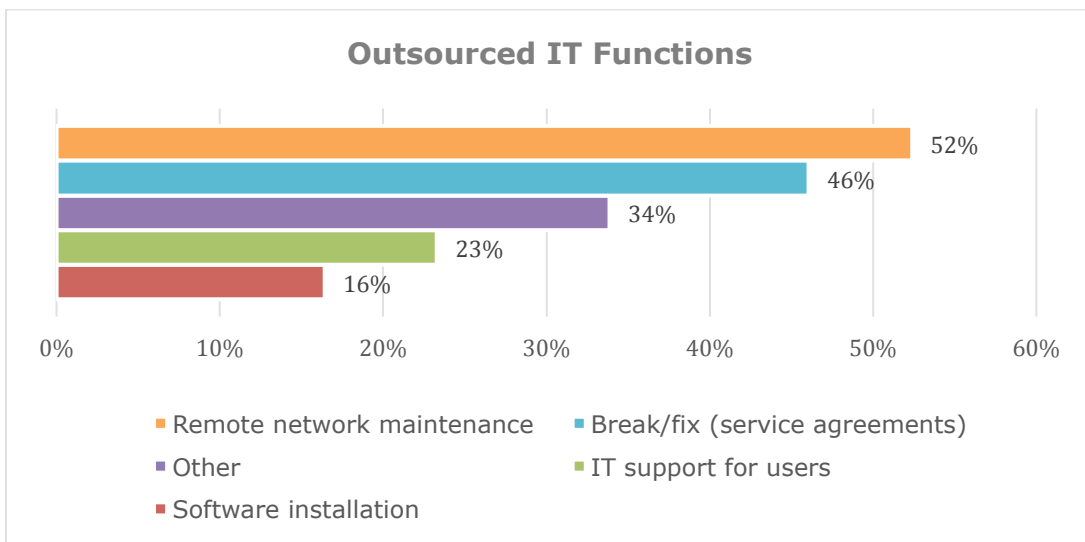


In the business sector, according to the study, *IT Outsourcing Statics 2017/2018*, the percentage of IT outsourcing is the “highest in five years.”¹² The trend in K-12 is in the opposite direction. In 2104, a majority (58%) was outsourcing at least one of the four IT functions on the survey— IT Support for Users, Software Installation, Remote Network Maintenance, and Break/Fix (service agreements). Four years later, a majority (53%) is not outsourcing at all. The reasons that districts’ outsourcing habits run counter to the business sector is unclear. It may be that district outsourcing agreements have grown in scope to a point that makes them too expensive for districts and hiring staff is more cost-effective. Or perhaps it is tied to their infrastructure and inability to outsource, as many outsourcing solutions require robust broadband and network capacity. Since broadband and network capacity is ranked a top priority this year, it will be interesting to see if outsourcing increases as districts start to achieve their broadband and network goals.

¹² <https://www.computereconomics.com/page.cfm?name=Outsourcing>

	2014	2015	2016	2017	2018
No functions Outsourced	32%	44%	47%	49%	53%
Considering Outsourcing	9%	8%	7%	6%	5%
Currently Outsourcing one or more functions	59%	48%	46%	45%	42%

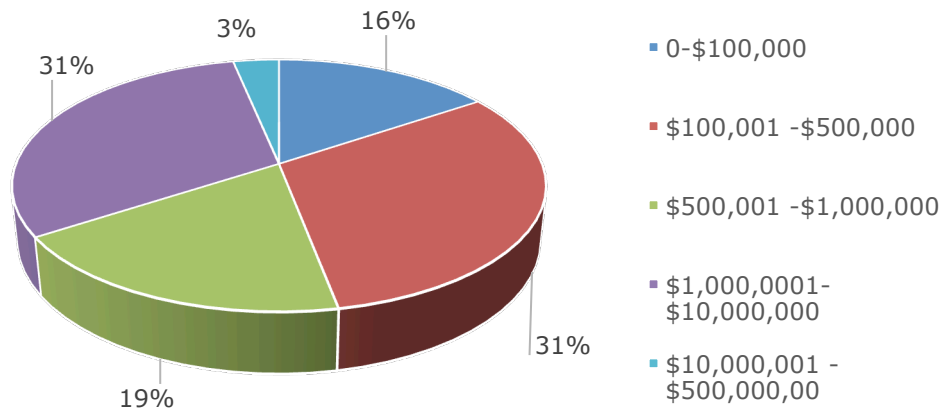
When districts do outsource, “Remote Network Maintenance” with 52% and “Break/fix (service agreements)” with 46% are by far the most popular. “Other” rounded out the top three with 34%. The functions least likely to be outsourced were “IT support for Users” (23%) and “Software Installation” with 16%%.



About Budgets

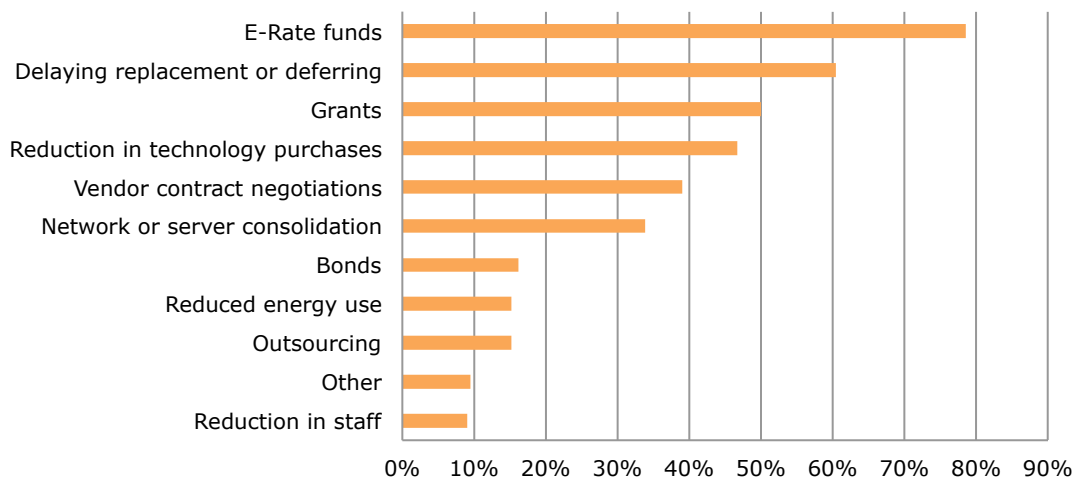
For the first time on the survey, respondents were asked to provide their current year district-level technology budget. Not surprisingly, the smallest percentage of respondents report the largest budgets—3% work in districts with budgets over the \$10 million mark. The next smallest percentage (16%) represents those working with the smallest budgets—\$100,000 or less. About a fifth of respondents (19%) report budgets between \$500,000 and \$1,000,000. The remaining districts are split evenly with 31% with budgets in the \$100,001 —\$500,000 range and 31% with budgets between \$1 million and \$10 million.

Technology Budget



For a large majority of respondents (70%), their district's IT budget enables them to "meet the overall expectation of the school board/district leaders." However, about half (53%) indicated that their budget does not "allocate enough financial resources to hire the personnel needed to support the tech assets that have already been purchased." Respondents have a number of strategies to overcome their budget issues. The most common strategy, cited by 79% of respondents, is to apply for funds available through the 20-year-old E-Rate program. The second most common strategy and the only other strategy employed by a majority of districts (60%) is "delaying replacement or deferring maintenance/upgrade contracts." Half of respondents (50%) intend to use grants, making it the third most popular plan, followed closely by "reduction in technology purchases" with 47%.

Plan to Overcome Budget Issues



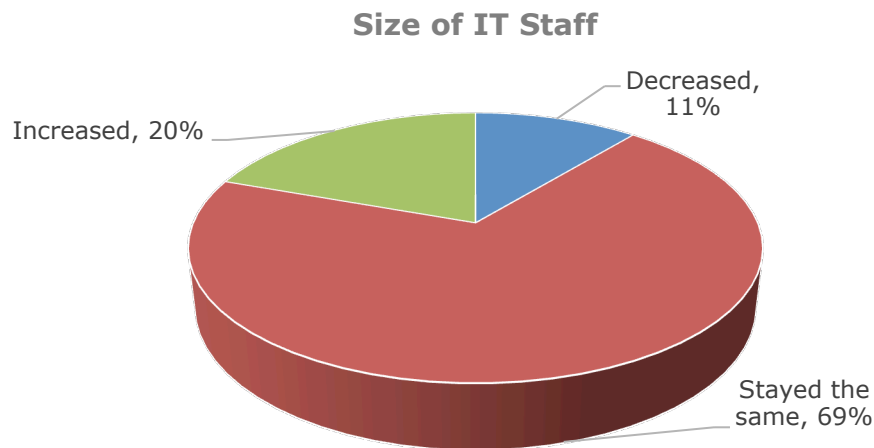
When asked to identify their “top 3 challenges to planning and implementing technology enabled environments,” respondents cited the usual suspects. “Budgets constraints and lack of resources” continue to be ranked as the number one challenge for districts. It has been the top challenge four years running. It has ranked as the number one challenge for five of the six years of the survey’s existence, missing a full sweep only by dropping to the number two slot in 2014. This year’s number two challenge—“Relevant training and professional development unavailable”— is the same as the prior year as was the number three challenge—“Existence of silos in the district, which make it difficult to work together on technology planning.” These two challenges are not strangers in the top three challenges list.

Top 3 Challenges	2013	2014	2015	2016	2017	2018
#1	Budget constraints and lack of resources	Changing the culture of teaching to student-centered*	Budget constraints and lack of resources	Budget constraints and lack of resources	Budget constraints and lack of resources	Budget constraints and lack of resources
#2	Changing the culture of teaching to student-centered	Budget constraints and lack of resources	Relevant training and professional development unavailable	Existence of silos in the district, which make it difficult to work together on technology planning	Relevant training and professional development unavailable	Relevant training and professional development unavailable
#3	Breaking down silos within the district	Breaking down silos within the district	Existence of silos in the district, which make it difficult to work together on technology planning	Lack of vision/ support from senior district leadership	Existence of silos in the district, which make it difficult to work together on technology planning	Existence of silos in the district, which make it difficult to work together on technology planning

* This answer option was re-worded from 2013/2014, “Changing the culture of teaching & learning to a student-centered environment with ubiquitous computing (1:1 student to device or better),” into two options in 2015—“Lack of support for creating personalized learning environments” and “A technology-adverse culture.”

About Staffing

For more than two-thirds of respondents (69%), staffing levels are unchanged from the prior year. This mirrors the results of 2017 and 2016 with “stayed the same” rates of 66% and 62% respectively, indicating staffing is fairly stagnant. A fifth of respondents (20%) had staffing increases and 11% experienced a decrease.



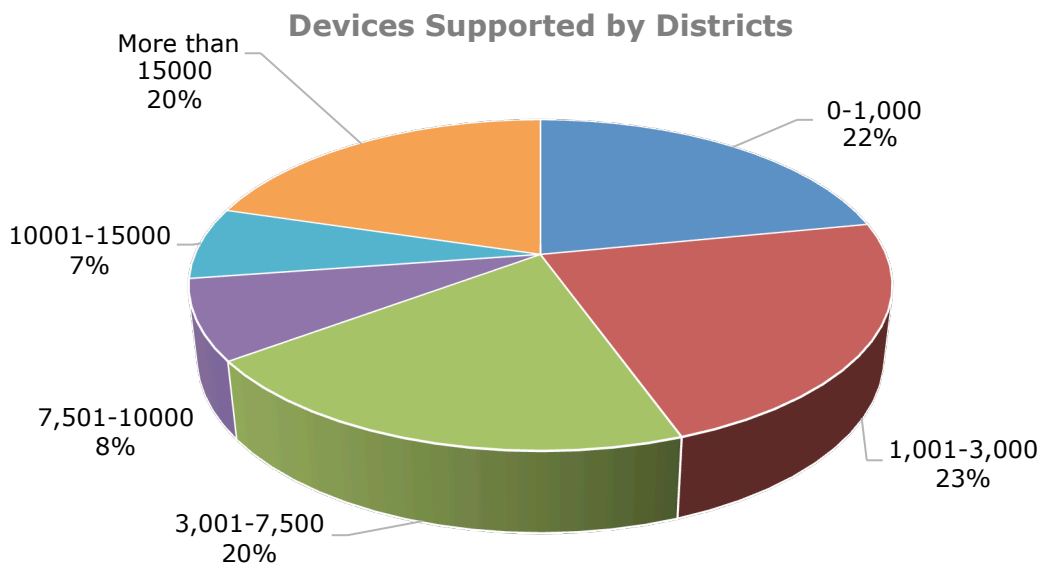
Two-thirds (67%) of respondents indicated they have eight or fewer technicians in their district—34% with 4-8 technicians and 33% with three or less. A tenth (10%) have between 9-15 technicians, 11% between 16-20, and respondents with more than 20 technicians in their district comprise the remaining 8%. As expected, it is apparent that districts with lower enrollments tend to have fewer technicians and districts with larger enrollments tend to have more. However, it does not break down that way for every district. While the 84% of respondents with more than 20 technicians are in districts with enrollments greater than 10,000, 16% are in districts with fewer students (2,500-9,999). Conversely, while an overwhelming majority (89%) of respondents with 4-8 technicians are in districts with less than 10,000 students, 11% of districts with more than 10,000 need to make do with the same number of technicians. It is possible that those districts have less tech to support, using computer labs versus 1:1 scenarios, for example. Or perhaps those districts with low technician-to-student ratios tap their students for help with a student-run tech team. As one respondent suggested, “Do you use students as help?” is a question worth asking in next year’s survey.

	Under 1,000	1,000 to 2,499	2,500 to 9,999	10,000 to 14,999	15,000 to 49,999	Over 50,000
0-3*	40%	41%	20%	0%	0%	0%
4-8	7%	15%	67%	6%	4%	1%
9-15	2%	0%	44%	19%	35%	0%
16-20	0%	0%	55%	0%	45%	0%
More than 20	0%	0%	16%	16%	56%	12%

* Row does not equal 100% due to rounding of the nearest whole percent.

Two-thirds (65%) of respondents work in districts that support 7,500 devices or less. That group breaks down fairly evenly across the three subcategories with 22% supporting 1,000 or fewer devices, 23% supporting 1,001-3,000, and 20% supporting 3,001-7,500. However, a fifth (20%) of all respondents are supporting more than 15,000 devices. It is important to note these figures only tell part of the story, as districts need support beyond that of their devices. As one respondent stated:

"Technicians support all technology including document cameras, interactive whiteboards/pads, projectors, unified communications, etc."



As on prior surveys, respondents were asked how they felt about their staffing levels for various functions. This year an answer option was added for "over-staffed." It was only selected twice, by 1% of respondents—for supporting needs of the district and integrating technology in

the classroom—and both times 1% was the result of rounding-up to the nearest whole percent. While the majority of respondents indicate their districts have insufficient staffing across every IT activity on the survey, the rates in every category improved over the prior year. When adding response rates for “adequate but we are very busy” to the “matched to needs” assessment, a brighter picture of staffing emerges with every activity reaching a majority. The largest percentages are in “Install IT applications” and “Maintain IT applications” each with 88%. “Effectively support the needs of the district,” “Meet your department’s yearly objectives,” and “Maintain systems adequately” all with 80%, have the next largest percentage. “Plan for new technology” has 73% and “implement new technology” has 71%. The activity with the lowest combined rate is “Integrate technology into the classroom” with 57%. Correspondingly, it has the highest percentage of respondents (43%) indicating they are “stretched too thin and can’t get to critical areas.” For three years running, “integrate technology into the classroom” continues to be, by a significant margin, the most understaffed IT activity. Implementing new technology (29%) and plan for new technology (27%) round out the bottom three activities where IT Leaders can’t get to critical areas. This chart provides insight into tech staffing levels issues, as a wide variety of skill sets is needed to properly support districts. One respondent highlighted this issue in a comment:

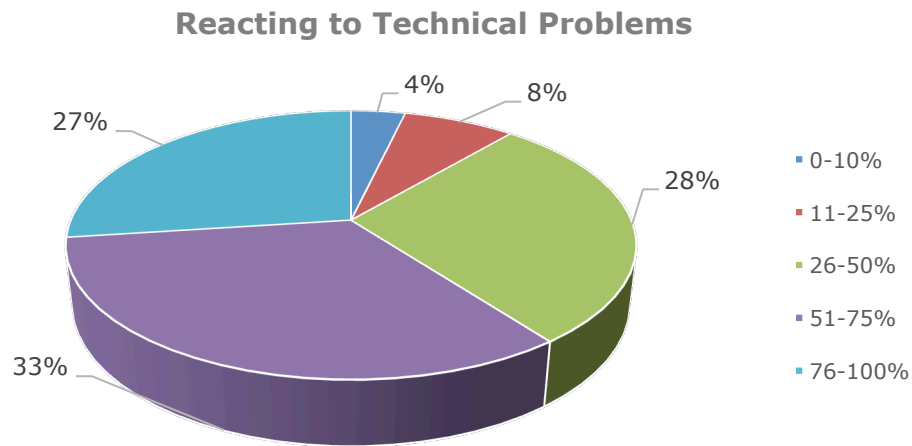
“...we have enough FTE but their job duties don’t align to the district needs. For example, I have more technicians than I need to maintain adequate support to address service requests but I do not have specialization in the areas of server support or network systems support.”

Activity / Responsibility	We are stretched too thin and can't get to critical areas	Staffing is adequate but we are very busy	Staffing is matched to needs	Over-staffed
Effectively support the needs of the district/school *	20%	58%	22%	1%
Implement new technology	29%	54%	17%	0%
Install IT applications *	11%	53%	35%	0%
Integrate technology into the classroom	43%	39%	18%	1%
Maintain IT applications	12%	57%	31%	0%
Maintain network systems adequately *	19%	48%	32%	0%
Meet your department's yearly objectives *	19%	55%	25%	0%
Plan for new technology	27%	50%	23%	0%

* Row total does not equal 100% due to rounding to the nearest whole percent.

Respondents report that the majority (60%) of IT departments are spending the bulk of their time reacting to technical problems (as opposed to working in a proactive mode). Over a

quarter of respondents (27%) indicated that more than 75% of their department's workload is reacting to technical problems. This is an increase from prior year rate of only 14%—almost double the rate.



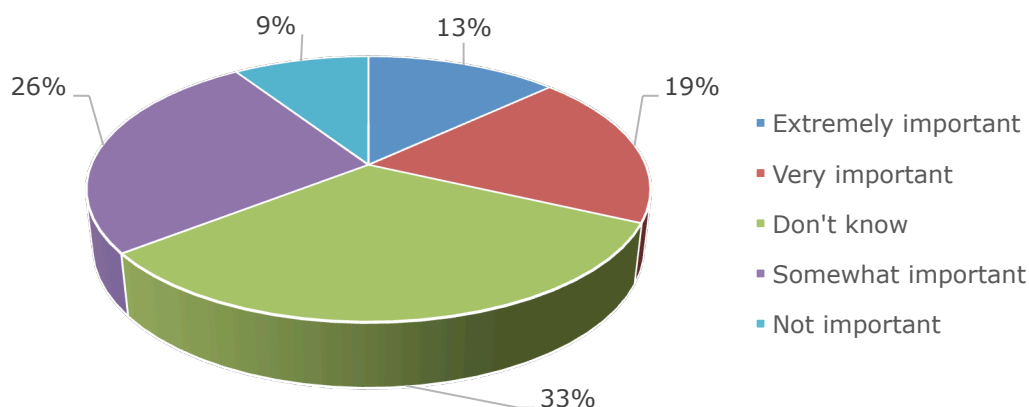
About Professional Development

In light of Professional Development's ranking as a top challenge for IT Leaders, it is not surprising that a majority (58%) consider the Certified Education Technology Leadership (CETL) credential to be important. Less than a tenth (9%) of respondents consider it unimportant. However, when asked to "rate the value" of CETL, a third of respondents (33%) don't know how to value the credential. A respondent who had attained the CETL credential might provide some insight into why so many respondents don't know how to rate the value of the certification:

"The reason I answered "unsure" about the value of the CETL certification is that I am not sure how many outside our specific association know about it or acknowledge its value."

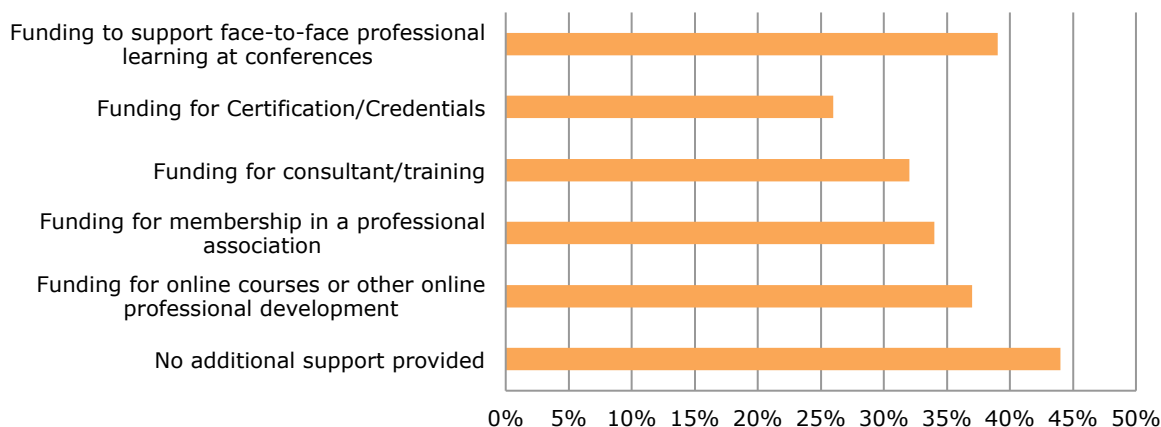
This response suggests the need to increase awareness of what the CETL credential signifies about the IT Leaders who earn it.

Certified Education Technology Leadership (CETL)



For the third year, survey respondents were asked "Does your PD budget provide additional support for emerging leaders with 5 years or less experience in K-12 educational technology?" The majority of respondents (55%) indicated some type of additional support is provided. Funding to attend professional conferences was the most common type of support with 39%, followed closely by access to online PD with 37%. The least-funded type of additional support is certification and credentials with 26%.

Additional Support for Emerging Leaders



In Closing

Summary

Over the past six years, the CoSN K-12 IT Leadership Survey has provided important information about the environment in which IT Leaders work and the challenges they face. The role of IT Leaders is changing and expanding. Increasingly IT leaders are involved in decisions regarding the purchase of curriculum materials and recognized as a valued member of the district leadership team. At the same time, IT Leaders face new challenges, especially in areas relating to student data privacy and security, while they continue to address the persistent problems of insufficient budgets and lack of resources. To help IT Leaders address the various issues of their districts, CoSN has created resources such as the Privacy Toolkit and TLE seal and, as well as professional development programs and the CETL certification. Now more than ever, CoSN is committed to working with IT Leaders— helping them address the challenges posed by today’s educational environments

About CoSN

CoSN (the Consortium for School Networking) is the premier professional association for district technology leaders. For more than a quarter of a century, CoSN has provided leaders with the management, community building, and advocacy tools they need to succeed. Today, CoSN represents over 13 million students in school districts nationwide and continues to grow as a powerful and influential voice in K-12 education.

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.

CoSN Resources

CoSN's Certified Education Technology Leader (CETL) Certification program –

www.cosn.org/certification

The Trusted Learning Environment (TLE) Seal program – www.trustedlearning.org

Leadership & Vision

- Leadership for Mobile Learning – www.cosn.org/MobileLead
- The Empowered Superintendent – <http://www.cosn.org/superintendents>
- Digital Equity Toolkit – <http://www.cosn.org/digital-equity-action-toolkit-february-2016>
- Participatory Learning in Schools: Leadership and Policy – www.cosn.org/participatoryLearning
- Collaboration for Innovation: Advancing Excellence and Equity www.cosn.org/OnlineCoP
- Digital Leap Success Matrix – <http://cosn.org/focus-areas/digital-leap-success-matrix>

Understanding the Educational Environment

- Teaming for Transformation – www.cosn.org/OnlineCoP
- CoSN's Annual E-rate and Broadband Survey – www.cosn.org/ErateSurvey

Managing Technology & Support Resources

- Smart Education Networks by Design (SEND) – www.cosn.org/SmartEdNetworks
- Protecting Privacy in Connected Learning – <http://www.cosn.org/focus-areas/leadership-vision/protecting-privacy>
- Interoperability Standards – <http://www.cosn.org/interoperability-standards>
- Raising the BAR: Becoming Assessment Ready – <http://www.cosn.org/assessment>
- Data-Driven Decision Making – www.cosn.org/3dm

About Our Sponsor

DUDE SOLUTIONS®

Dude Solutions is a leading software-as-a-service (SaaS) provider of operations management solutions to education, government, healthcare, senior living, manufacturing and membership-based organizations. For nearly two decades, Dude Solutions has inspired clients to create better work and better lives. We combine innovative, user-friendly technology with the world's smartest operations engine, empowering education operations leaders to transform the most important places in our lives. Today, more than 7,000 educational institutions use our award-winning software to manage maintenance, assets, energy, safety, IT, events and more. For more information, visit dudesolutions.com.

About Our Partners



MDR is a different kind of integrated marketing services agency with unique digital, creative, and branding capabilities. MDR leads the industry in helping clients achieve their business goals by connecting with targeted audiences through research and market intelligence, a world class database and multi-channel digital communities including WeAreTeachers, WeAreParents, School Leaders Now, Schooldata.com and EdNET.

FORECAST5™ **ANALYTICS**

Forecast5 Analytics provides decision support systems and applications for school district leaders. Forecast5's suite of state-of-the-art analytics technology helps you identify strategic, financial, and student growth opportunities with highly visual output in the areas of financial performance, compensation, staffing, enrollment/demographics and student performance. More than 1,200 school districts across the country use Forecast5 tools to maximize their data insights.

ABOUT THE AUTHOR:

This report was prepared by Paula Maylahn, an education industry consultant with over 30 years' experience across the K-20 spectrum. Paula is a contributing author on two books, The Experts' Guide to the K-12 Market and The Experts' Guide to the Postsecondary Market, and recently authored "CoSN's 2017 Annual Infrastructure Survey Report." Paula is a member of CoSN's Standards and Technical Committee, a former board member of the Education Division of the Software & Information Industry Association, and past Executive Council member of the PreK-12 Learning Group of the Association of American Publishers. Paula is currently on the Board of Directors for the United Design Guild where she chairs the Education Council.