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State of the K-12 Market 2015

EXECUTIVE SUMMARY

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Executive Summary

State of the K-12 Market 2015 is the sixth annual report from EdNET Insight, Market Data Retrieval's research-based decision support service. It provides current data about elementary and secondary education in the United States, together with analyses and commentary about important trends and developments that influence the education market.

The report has three major sections:

- Part I provides background and general context, including an overview of the K-12 education landscape (policies, funding sources, and national education initiatives), data on the characteristics of public schools and school districts in the United States, and information on school management organizations, as well as a brief overview of professional development.
- Part II focuses on educational materials—instructional materials, assessment and test prep, and online learning. Data are presented on district expenditures on instructional materials, budget allocations and outlooks, instructional priorities, and new instructional models. Developments affecting this market segment are discussed in detail.
- Part III covers educational technologies, including hardware (personal computing devices and classroom technologies) and software (student information systems, learning management systems, and enterprise management systems), as well as developments affecting this market segment.

This Executive Summary pulls together significant data and related understandings from all three parts, providing a handy overview of the entire report. It, too, has three sections. It begins with a summary of major developments, trends, and issues influencing the K-12 marketplace. Next come the highlights of MDR's national surveys of K-12 curriculum and technology leaders, various statistics drawn from MDR's databases and external sources, and other important information. The final section provides a high-level synopsis of the Key Takeaway advice from the industry experts who wrote the main body of the report.

Section 1: Major Developments, Trends, and Issues Influencing the K-12 Marketplace

More than most years, 2015 was a year in which events did not quite play out as expected. Yes, the first Common Core-aligned tests were administered as planned in the spring, but this took place against a backdrop of states withdrawing from the consortia that developed the tests and parents opting out of them in unprecedented numbers. The federal "No Child Left Behind" law (more accurately, the Elementary and Secondary Education Act or ESEA) looked like it had a better chance for reauthorization than any time since it came up for renewal in 2007. Sadly, however, gridlock in Congress prevailed again and it did not happen. While all this was going on, concerns over privacy and data security presented new challenges to educational technology and content providers, adding a layer of complexity to the already daunting task of surviving and thriving in the K-12 market.

Notwithstanding these setbacks, there has been a lot to like this year as well. Spending for instructional materials is growing again, although it is not yet back to pre-recession levels. Technology is taking hold in school districts across the country, driven not only by the online testing requirements of the Common Core assessments but also by marketplace demand and the innovations and entrepreneurship of ed tech firms themselves. The dream of personalizing learning for K-12 students is moving steadily, albeit slowly, toward becoming a reality. In parallel, many teachers are experimenting with new instructional approaches, focusing on project-based learning and, in some cases, "flipping" their classrooms.

While lawmakers and candidates for office are politicizing K-12 education as never before, the underlying reality is that the Common Core State Standards (CCSS) are not going away. Even though 14 states have withdrawn from the assessment consortia (as of spring 2015), 40 states remain committed to the standards. Of the states that have dropped out or are considering it, most are adopting standards that differ from CCSS in name primarily.

While industry participants cannot ignore the politicians, they should also recognize that the political debates are somewhat of a sideshow. The underlying environment is one in which the economy is on the upswing, and innovation is flourishing in many districts and classrooms. Opportunities abound for companies with strong products that meet the needs of educators and give them the tools they need to help their students achieve.

National Education Initiatives

While the federal government funds just under 10% of K-12 education, its ability to implement new programs and sustain existing ones has considerable market impact. Sadly, the federal level is where political dysfunction is most apparent. It is again difficult to see how ESEA might be authorized in the near future, and as Congress repeatedly fails to pass budgets and instead keeps current spending levels in place through a series of continuing resolutions, the Obama Administration will face challenges implementing some of the agenda it laid out in its proposed budget for FY2016.

Reauthorization of the Elementary and Secondary Education Act

ESEA is the legislation that identifies federal priorities and, via funding streams, supports their implementation at state and local levels. ESEA was last reauthorized in 2001, when it was recast as "No Child Left Behind" (NCLB). That legislation has been due for reauthorization since 2007; until this year, the likelihood of reauthorization has been relatively remote.

The Republican victories in the November 2014 elections strengthened Republican control of the House of Representatives and gave them control of the Senate (though not a veto-proof majority). The chairs of both the House Committee on Education and the Workforce and the Senate Committee on Health, Education, Labor and Pensions indicated their intent to move ESEA reauthorization forward.

The House moved quickly, with the education committee passing the *Student Success Act*, a slightly altered version of 2013's legislation, on a party line vote on February 11. The bill was conservative enough that the White House threatened veto, but when it reached the House floor in late February, conservative Republicans withdrew support, claiming the bill did not do enough to limit federal authority. Lacking the votes needed for passage, Chairman Kline withdrew the bill, indicating plans to reintroduce it for consideration following the spring recess. That did not happen and the *Student Success Act* is currently not on the House calendar.

In the Senate, Chairman Alexander committed to a bipartisan bill and worked with ranking member Senator Patty Murray for several months, hammering out the details of a bipartisan bargain. In mid-April, the *Every Child Achieves Act of 2015* passed out of committee on a 22-0 vote, with members honoring Alexander's and Murray's request to maintain the bipartisan nature of the legislation.

While 2015 seemed like the year that would finally see ESEA reauthorized, that seems less likely now. While the *Every Child Achieves Act of 2015* is very similar to the House's *Student Success Act*, it is somewhat more moderate. The limits placed on the Department of Education are milder, only stating that the federal government may not mandate or incentivize states to adopt or maintain any particular set of standards, including Common Core. If the Senate bill passes in anything like its current form, it will be difficult to work out the differences with the House version in a manner that will be acceptable to the House's conservative element. If amendments result in a more conservative Senate bill, it too would face the threat of a presidential veto. Quite suddenly, there appears to be no clear path to reauthorization.

ESEA Flexibility

Until ESEA is reauthorized, relief from the requirements of No Child Left Behind rests with the Department of Education. This relief is currently provided by the ESEA Flexibility Initiative, which was launched in September 2011. ESEA Flexibility addressed those aspects of the No Child Left Behind Act that were most unpopular—things like the sanctions associated with failure to make Adequate Yearly Progress, the requirement that all students be 100% proficient in reading and math by 2014, and some of the law's mandates related to highly qualified teachers. In return for regulatory relief from some of these more onerous requirements, states were asked to reaffirm a solid commitment to improving educational outcomes for all students.

The first waivers were granted in February 2012. The process involved considerable negotiation between each state and the Department of Education around each principle of flexibility and waiver request refinement. While the states were happy to be relieved of the more problematic of NCLB requirements, Congress and a number of policy analysts saw ESEA Flexibility as serious overreach of federal authority. It is interesting to note that the current ESEA reauthorization bills under consideration reject the major principles of ESEA Flexibility, returning authority for accountability systems to the states and eliminating any mandates related to teacher evaluation systems.

Ultimately, 45 states, the District of Columbia, Puerto Rico, and the Bureau of Indian Education submitted requests for ESEA Flexibility. Requests from Iowa, Wyoming, and the Bureau of Indian Education are still under review. Only California, Montana, Nebraska, North Dakota, and Vermont are not participating in the flexibility program. The initial waivers were granted for two years, through the 2013-2014 school year. In November 2013, the Department of Education offered those entities with approved waivers—43 states (waivers for Wyoming and Iowa were still under review), the District of Columbia, and Puerto Rico—the opportunity to seek a one-year extension in place of the previously announced two-year renewal.

In November 2014, the Department published new guidelines for renewal requests of ESEA Flexibility. Under the guidelines, any state with an approved waiver request that will expire at the end of the 2014-2015 school year may request a three-year renewal of ESEA Flexibility, through the 2017-2018 school year. Any state that submitted its waiver request in the first two windows (November 2011 and February 2012) and that is fully meeting its commitments to the timelines and principles of ESEA Flexibility is eligible to request a four-year renewal (through the 2018-2019 school year). The Department seems to have made an effort to simplify the renewal process.

Renewal requests were due by March 31, 2015. Each of the 42 states and territories with an approved waiver opted to apply for renewal. Five of those states—Kentucky, Minnesota, New Mexico, North Carolina, and Virginia—were allowed to apply under a special, expedited process and were already approved as of last summer.

In January 2017, the United States will inaugurate a new president. Waivers that extend through the 2017-2018 or 2018-2019 school years are likely to be challenged by any new administration. In the interim, however, waivers provide stability for the vast majority of states.

Preschool Programs Remain a Priority

Early childhood education remains an Obama Administration priority, though no new program initiatives have been introduced. The President's FY2016 budget request once again includes Preschool for All and asks for $750 million for what would be the third year of Preschool Development Grants. There is no chance of Preschool for All being funded with Congress honoring sequester caps in FY2016. The Preschool Development Grants initiative may be funded at the previous year's level of $250 million.

The Preschool Development Grants program is administered jointly by the Department of Education and the Department of Health and Human Services. The program is intended to lay the groundwork that ensures that more states are ready to participate in the Preschool for All initiative. The grants support the states in building or enhancing a preschool program infrastructure to enable the delivery of high-quality preschool

services to children and expanding high-quality preschool programs in targeted communities. These programs are meant to serve as models for expanding preschool to all four-year-olds from low- and moderate-income families.

The first Preschool Development Grants were funded in the FY2014 budget and awarded in December 2014. States submitted comprehensive four-year plans as part of the competition and received funding for the first year (12 months) of their plan. Continuation awards for years two, three, and four are contingent on the availability of funds and demonstrated progress on the part of grantees. Alabama, Arizona, Hawaii, Montana, and Nevada shared $56 million in Development Grant funding with awards ranging from $2 million in Hawaii to $20 million in Arizona. Arkansas, Connecticut, Illinois, Louisiana, Maine, Maryland, Massachusetts, New Jersey, New York, Rhode Island, Tennessee, and Virginia shared the $200 million allocated to Expansion Grants. The Department of Education is expected to release year two continuation awards at the end of 2015.

Meanwhile, in absence of full funding of the requested budget, the President has been using his bully pulpit to keep early education in the spotlight and to recruit private sector support and leverage public-private partnerships. The President hosted the White House Summit on Early Education in December 2014. During the Summit, the President announced more than $330 million in commitments from corporate and philanthropic leaders to expand the reach and enhance the quality of early education for thousands of additional children.[1]

The President also highlighted the potential of Invest in US, a new initiative created by the non-profit First Five Years Fund, in partnership with private philanthropic leaders. Through its Early Learning Communities initiative, Invest in US will connect communities interested in expanding early learning programs and opportunities with partners that have committed to helping connect leaders with resources, planning grants, technical assistance, and other support.

At the state and local levels, the nation's governors and mayors have been strong supporters of preschool education, regardless of party affiliation. According to the White House, 34 states have increased funding for their preschool programs since 2013, allocating more than $1 billion in new state resources to early education programs. And it is not just state programs: voters in Denver, San Francisco, and Seattle approved PreK ballot initiatives in November 2014. Preschool education clearly is on the public agenda.

Common Core State Standards (CCSS)

Though it may seem that the Common Core has dominated education policy debates forever, it has only been six years since the Common Core State Standards Initiative was launched in the spring of 2009. For the first few years following the launch, the Core flew under the radar, the domain of policy buffs, state boards of education, and curriculum developers. The final version of the Common Core State Standards was released in June 2010, and by August 2010, 34 states had adopted the standards, giving them a competitive advantage when applying for the first round of Race to the Top (RTTT) grants.

Much of that early history has been forgotten (or ignored) in the increasingly politicized and overwrought debate about the Common Core. CCSS has been conflated with any number of other issues, most notably testing and inappropriate collection of student

data. In fact, much of the media coverage of opposition to the Common Core this past year has really been about opposition to the Common Core assessments and standardized testing. All of this passion and confusion make it very difficult to get a true picture of the status of the CCSS at this point in time.

In general, there is no question that support for the CCSS has been softening. Educators are concerned about issues that affect their ability to implement the new standards effectively—not enough aligned instructional resources, unrealistic performance expectations, lack of adequate professional development, too much pressure around test scores, and the professional consequences of having their evaluations tied to student test scores. Parent concerns include that they are confused by the new instructional approaches that are being used under the Common Core, and they can no longer help their children with homework or assignments. Parents also worry about the narrowing of the curriculum and an over-emphasis on test scores and decry what they see as a one-size-fits-all approach to instruction.

Teachers are roughly split in their overall attitude about the CCSS. According to a Gallup Poll survey conducted in August and September of 2014, 41% of teachers view the CCSS positively and 44% negatively. The good news is that the more familiar teachers are with the CCSS, the more positive they feel about them. Gallup reports that the majority (61%) of teachers who work in schools where the Common Core Standards were fully implemented in the 2013-2014 school year view the CCSS positively versus 35% negatively. Among teachers in Common Core states whose schools had not yet fully implemented the standards last year, 37% view the CCSS positively versus 43% negatively.

At the peak of its popularity in January 2012, 46 states and the District of Columbia had officially adopted the Common Core State Standards. (Minnesota has adopted only the English language arts standards.) As of May 2015, 44 states were implementing the CCSS, three on an interim basis until new standards can be developed.

Rebranding has proven a popular way to deal with Common Core opposition. Some states decided simply to rename the standards, inserting the state's name prominently in the rebranding. This was often accompanied by an executive order that asserted the state's total control over standards, curriculum, instruction, and assessment. A few states initiated some type of review or solicited public input, though few substantive changes resulted.

Opponents are not ready to give up. The National Conference of State Legislatures has identified 47 bills in 21 states that would halt implementation of the CCSS. Of those bills, 17 failed and 24 never moved beyond the introductory stage. One bill was enacted, withdrawing Tennessee from the CCSS.

The Common Core State Standards are proving to have staying power. There may be more substantial blowback once states begin to share results from the spring administration of the Common Core assessments, but most of that will serve to fuel the ongoing debate over testing. It remains true that millions of teachers have received professional development and begun the work of shifting their instructional practices to be in tune with the CCSS. Despite all the negative press, a substantial number of teachers have found the CCSS to be to their liking. No matter what political decisions states end up making, the shifts in emphasis and classroom practice that the CCSS has brought will most certainly endure.

A New Generation of Assessments

Spring 2015 saw the formal debut of the Common Core assessments. The two testing consortia—the Smarter Balanced Assessment Consortium (SBAC) and the Partnership for Assessment of Readiness for College and Careers (PARCC)—and their state memberships have faced a number of challenges along the path to that milestone. Each one has been resolved to some extent, allowing the consortia and their assessment programs to move forward. It may prove more difficult, however, to resolve the most recent wave of complex issues—a combination of concerns about the assessment itself (length, complexity, and technology readiness) and about the way the results will be used (for both teachers and students), worsened by a general anxiety about data privacy, security, and over-testing.

In the spring of 2010, the Department of Education announced a $350 million Race to the Top Assessment Program grant competition, designed to support the work of consortia of states to develop and implement common, high-quality assessments, aligned with common college- and career-ready K-12 standards. The goal was to support the collaborative development of a new generation of assessments—tests that went deeper and produced a more complete picture of student performance. Though states were not obligated to join the consortia or use their tests, almost every state that adopted the Common Core State Standards also opted to become members of either SBAC or PARCC.

States began to rethink their commitments in early 2013. In some cases, the state withdrew from its consortium in an attempt to quiet opposition to the Common Core Standards. Some states balked at the costs of consortia tests, and others had serious concerns about their technology readiness and the costs of bringing it up to par. Following the spring 2014 pilot testing of the PARCC and SBAC tests, parents began to raise concerns about the pressure that testing was causing for their children, and as a result, the fledgling opt-out movement took wing.

PARCC received a Race to the Top Assessment grant of $186 million in October 2010. In June of 2013, PARCC had 21 members; membership had dropped to 16 by May 2014. In spring 2015, only 12 states (Arkansas, Colorado, Illinois, Louisiana, Maryland, Massachusetts, Mississippi, New Jersey, New Mexico, New York, Ohio, and Rhode Island) and the District of Columbia remain members of PARCC. In the 2014-2015 school year, 5 million students in 11 states and the District of Columbia are taking the PARCC state assessments in Grades 3-11, though Louisiana only used PARCC in Grades 3-8, administering a combination of ACT and end-of-course tests in Grade 11. In Massachusetts, each district has the option of using PARCC or the Massachusetts Comprehensive Assessment System (MCAS). PARCC will be fully implemented in Massachusetts in 2016. New York continued to administer its own Common Core-aligned test to students in 2014-2015.

PARCC's outlook for 2015-2016 is uncertain. Mississippi has already announced that it will be seeking a new test for 2015-2016. In May, New Jersey Governor Chris Christie announced his intent to take the state out of the Common Core; if that happens, New Jersey will no longer use PARCC tests. Colorado is reducing the number of tests it requires at the high school level, so it seems likely that PARCC will only be used in Grades 3-8 in Colorado. Louisiana is negotiating a truce between its governor, who has become an ardent opponent of all things Common Core, and the state superintendent of

education and the state board of education; it appears the state will stay with the CCSS but will abandon PARCC. Ohio's commitment to PARCC is uncertain, with the Ohio House of Representatives passing a bill in May that would require the state to seek new tests for the 2015-2016 school year.

SBAC received a Race to the Top Assessment grant of $176 million in October 2010. In June 2013, SBAC included 25 states, and as of May 1, 2014, there were 23 members. SBAC now has 20 member states (California, Connecticut, Delaware, Hawaii, Idaho, Iowa, Maine, Michigan, Montana, Nevada, New Hampshire, North Carolina, North Dakota, Oregon, South Dakota, Vermont, Washington, West Virginia, Wisconsin, and Wyoming) as well as the Bureau of Indian Education and the U.S. Virgin Islands. Missouri is listed as a licensee member. In the 2014-2015 school year, students in 17 states and the U.S. Virgin Islands are taking the SBAC state assessments. Iowa, Michigan, North Carolina, and Wyoming did not use SBAC assessments in 2014-2015.

The outlook for SBAC in 2015-2016 appears to be stable. Missouri has announced that it will not use SBAC in 2015-2016. The Wisconsin Department of Public Instruction is also seeking a test to replace SBAC. Montana, Nevada, and North Dakota experienced significant technical problems during SBAC testing. It is not clear how that might affect their continued use of SBAC assessments.

In 2015-2016, 22 states used some test other than PARCC or SBAC for statewide testing. Six of those states either had never adopted or were no longer using the CCSS. The remaining 16 Common Core states used a variety of assessments, including the ACT, ACT Aspire, and tests developed by organizations like Measured Progress and American Institute for Research.

Opt-Out Movement Gains Strength

States are required to administer annual tests in mathematics and reading to all students in Grades 3-8 and once in high school. This has been the requirement since the passage of No Child Left Behind in 2001. Some of the pressure that schools felt about annual testing was relieved as states were granted waivers under the ESEA Flexibility initiative, but anxiety ratcheted up again as schools began to prepare for the Common Core assessments. The Common Core State Standards are widely seen as more rigorous; not surprisingly, the tests that measure student achievement against the new standards were also expected to be harder.

In parallel, the Department of Education in recent years has been promoting an aggressive change in teacher evaluation practice. Race to the Top funding, School Improvement Grants and, most recently, waivers required states to make significant changes in the way they evaluated educators, in particular, making student test scores a factor in teacher evaluation. In New York, for example, just as students test scores dropped, the governor proposed making student test scores count for 50% of teacher evaluations.

As these factors contributed to both teacher and parent anxiety, parents began to organize to support and promote their right to opt their children out of this spring's standardized tests. Parents who participated had varied motivations. Some really were opposed to the new Common Core assessments. Others simply believe there is too much testing going on in American classrooms, resulting in time taken away from instruction. There are also serious concerns about the gathering and storing of student data, including test scores. Other parents do not object to testing but question the way test scores are being used.

It is difficult to get a national picture of just how many students were opted out of this spring's tests. The idea appears to have been discussed in almost every state, and organizations like the National Center for Fair & Open Testing and United Opt Out National maintained websites to support opt-out groups nationwide. As states begin to report their test scores this summer and early fall, the numbers of opt outs should become available. New York was one of the epicenters, building on momentum from 2014. According to *The New York Times*, the state department of education reported that in 2014 about 49,000 students (4%) did not have a known valid reason for not taking the English test and 67,000 (6%) did not take the math exam. The *Times* estimates the number of opt outs may have tripled this year.[2] NPR reports that as many as 165,000 New York students opted out. David Hespe, New Jersey's Commissioner of Education, shared his state's preliminary parental refusal rates: 5% for Grades 3-8, 14.5% for eleventh grade.[3]

Parents' concerns about "too much testing" and, by extension too much emphasis on test scores, are not likely to go away. Already, states are reviewing their assessment requirements. Several have set new limits on the amount of time students can spend taking standardized tests. Florida, for example, has established a cap of 45 hours of state-authorized testing per year. These concerns go well beyond the consortia, but they could have serious consequences for the states' overall commitment to SBAC and PARCC. It will take at least another year to see how all these forces work themselves out and how they shape the nation's vision of accountability.

Connectivity

High-speed broadband is becoming as essential to the American classroom as the #2 pencil once was. With reliable access to high-speed networks, connected educators are using learning technologies to empower students to learn at their own pace and in their own way. Unfortunately, not all American schools can provide high-speed access to their students. EducationSuperHighway reports that 40 million students, particularly children in rural and low-income communities, do not have access to high-speed networks in their schools. Further, 63% of schools do not have enough bandwidth to meet their current needs for digital learning, and 99% do not have the bandwidth that will be necessary over the next five years.[4]

In June 2013, President Obama put connectivity and broadband access front and center as essential, ensuring that American students have ready access to cutting-edge technology. The President's proposed ConnectED initiative would connect 99% of America's students through next-generation broadband and high-speed wireless in their schools and libraries within five years.

Early in 2014, the President provided more detail about ConnectED, announcing a two-pronged approach involving the Federal Communications Commission (FCC) and public-private partnerships. The FCC committed $2 billion of additional E-rate funding over two years to support broadband networks in schools and libraries. The White House also announced more than $750 million in private-sector commitments to support ConnectED through multi-year programs, including devices, free software, teacher professional development, and home wireless connectivity.

Private sector commitments to ConnectED today total more than $2 billion. ConnectED partners, including Apple, Microsoft, and Verizon, are working to distribute their device and digital resources commitments in the schools or providing free connectivity to students at home.[5]

The program commonly known as E-rate is the Schools and Libraries portion of the universal service fund, authorized as part of the Telecommunications Act of 1996. E-rate is widely seen as a highly successful program, helping schools and libraries to obtain affordable telecommunications services, broadband Internet access, and internal network connections at affordable rates. In early 2014, the FCC reported that the E-rate program had successfully connected virtually all U.S. schools and libraries (97% of U.S. classrooms) to the Internet. However, demand for telecommunications services and Internet access was so great that requests for internal connections and basic maintenance of internal connections had not been funded since program year 2012. Even before President Obama challenged the FCC to rethink its priorities in order to better support ConnectED goals, changes were already under consideration.

E-rate modernization has come in two steps. The FCC adopted the *E-rate Modernization Order* on July 11, 2014, and the *Second E-rate Modernization Order* on December 11, 2014. The first order focused on expanding funding for Wi-Fi networks in American schools and initiated a number of procedural changes aimed at improving the program's cost-effectiveness and simplifying program administration. The second order ensures that all schools and libraries have access to high-speed connectivity and increased the E-rate spending cap to $3.9 billion to adequately support that connectivity. The increased cap will allow the E-rate program to meet its target of $1 billion in annual Category 2 support (i.e., support for high-speed internal connections within schools) while fully funding the growing demand for Category 1 services (those needed to support high-speed connectivity to schools). The most significant change, however, is a refocusing of the E-rate on broadband access.

With the additional funding authorized in the December order, the FCC has concluded that the $1 billion annual target for Category 2 support adopted in the *E-rate Modernization Order* is sufficient to fund the five-year Category 2 budgets for all applicants. Five-year funding support provides a degree of certainty and predictability to applicants and reduces the pressure to apply immediately for Category 2 funding.

It would appear that the FCC's conclusion about the adequacy of funding holds true, at least for the first funding year of the new E-rate program. In May 2015, the agency announced that it will be able to fully fund all 2015 program year applications for E-rate funding. The FCC will provide a total of $3.9 billion in support, including more than $1.6 billion for internal Wi-Fi networks (Category 2). This marks the first time in three years that E-rate has had funds available for Wi-Fi.

The E-rate does not fund the purchase of computing devices or content. The infrastructure it does fund, however, is central to maintaining a robust market for organizations marketing digital education solutions. Schools need high-speed access to the Internet and high-speed internal networks to support the myriad ways that teachers and students use digital resources and collaboration tools to enhance learning throughout the school day. The E-rate helps schools build and maintain the foundational infrastructure needed to support 21st century instruction, which in turn expands the market for digital content and services.

Student Data Privacy

If there was any doubt that protecting children's privacy had become a mainstream issue, hearing the President request legislation that would "protect our children's information" in his 2015 State of the Union address should have made it clear. In the supercharged atmosphere created by the National Security Association (NSA) data collection initiative and numerous retail data breaches, Americans are on edge and on guard about who has access to their personal data and how it is used. Data collected at school about students is no exception. Parents and privacy advocates are asking for detailed answers on what is being gathered, who has access to it, how it is being used, and how it is secured.

There has been a rush among the states to enact legislation that seeks to ensure that student information, especially personally identifiable information (PII), is protected from unauthorized use and stored securely. A rewrite of the Family Educational Rights and Privacy Act (FERPA), which is due for an update, and of federal student privacy legislation in general, is coming along more slowly.

Enacted in November 1974, FERPA protects the privacy of student education records by giving parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a school beyond the high school level.

Privacy advocates widely believe that the 40-year-old legislation is simply not up to addressing the privacy issues of the digital age. Representative John Kline (R-MN), chairman of the House Education & the Workforce Committee, and ranking member Representative Robert Scott (D-VA) are circulating a discussion draft of a bill that would rewrite FERPA. The leaders want to engage stakeholders in the discussion and get as much feedback as possible before taking any further steps.

The draft makes significant changes to FERPA. It expands the definition of an educational record (the data that must be protected) to include information that is directly related to an individual student, is maintained "electronically or physically," and is "accessible, collected, used, or maintained by an education service provider in the course of providing services to a school official." This protected data cannot be used for marketing or advertising. Among other rights, parents would be allowed to review these records, including records held by the state education agency and education service providers, and to challenge and correct the content of the record that is inaccurate or misleading. Parents would also have the right to opt out of having their children's records used as part of research studies.

Reactions to the discussion draft thus far have been mixed. Privacy advocates like the Electronic Privacy Information Center and Common Sense Media are generally positive, but industry groups have expressed reservations.

FERPA focuses primarily on the responsibilities of educational agencies to protect student data privacy. The proposed Student Digital Privacy and Parental Rights Act of 2015, a bipartisan bill introduced in late April with Obama Administration support, focuses on the responsibilities of educational service providers. The two bills are generally seen as complementary, though there are gaps that neither legislative proposal addresses and some conflicts between them. Among other things, the legislation expands the definition of "covered information" to include metadata and other information that students generate when using vendors' products, requires

vendors to disclose the types of covered information collected or generated by their service or product and how that information will be used, prohibits vendors from selling student data or using that information to target students with advertisements or to build a personal profile of a student for a non-school-related purpose, and gives parents the right to access and correct a student's covered information.

At the state level, the Data Quality Campaign (DQC) reported that four months into the 2015 legislative session, 43 states had introduced 173 student privacy bills. That compares with 110 bills in 36 states in 2014, with 21 states passing legislation. Several states, including Georgia, Maryland, Utah, and Virginia, passed student privacy legislation in 2015. Though fewer bills passed in 2015 than the previous year, there is no sign that the pace of legislation at the state level will slow.

Curriculum Initiatives and Trends Affecting Educational Materials

For years, the "textbook" market was relatively easily segmented. Basal (or core curriculum) materials represented the primary texts schools used to teach a subject. Supplemental materials, by their very definition, supplemented what was needed for instruction. Digital resources, if available at all, were supplemental in nature.

Not today. The more modular nature of many digital resources continues to soften the definition of what is "basal/core" and what is "supplemental" since, as a practical matter, materials designed for one purpose can now more easily be used for the other.

Four trends across both basal and supplemental materials that were noted in 2014 continue as factors this year, in varying degrees: (1) the addition of digital elements to basal programs and the arrival of fully digital core curriculum programs; (2) more flexible "adoption" systems, the process by which states review basal instructional materials and approve those for which they will pay; (3) the rise of OER, open-license materials that teachers can use for free, modify, and share; and (4) the persistence of Common Core State Standards, notwithstanding the fact that CCSS remains a political lightning rod.

Core Instructional Materials

At the depth of the Great Recession and during its aftermath, many statewide textbook adoptions were canceled or postponed. That pause has begun to switch to play. According to Simba Information's 2014 National Instructional Materials Adoption Scorecard and 2015 Outlook,[6] the value of new opportunity in the basal adoption market, which rose from $380 million in 2012 to $400 million in 2013, more than doubled in 2014. After this large increase, the projection for 2015 was a 35% decrease.

While they now shy away from the "textbook publisher" label because of digital's influence, the three largest education publishing companies—Pearson, McGraw-Hill Education, and Houghton Mifflin Harcourt—continue to dominate the market for core or basal instructional materials.

Supplemental Instructional Materials

Any instructional resources not labeled as basal or core—workbooks, videos, games, or maps, for example—could be called "supplemental." Companies that develop and market distinctly supplemental resources extends beyond Pearson, McGraw-Hill Education, and Houghton Mifflin Harcourt to a wide range of firms from lean start-ups to global enterprises.

Supplemental Products: 2014 Size, Growth & Change[7] from Simba Information/Education Market Research (EMR), which defines supplemental products broadly and makes calendar-year projections, estimated that supplemental educational products sales grew 6.3% from 2013 to 2014, after a 3.5% increase from 2012 to 2013. Simba/EMR's *The Complete K-12 Report: 2015*,[8] which uses a narrower definition and does school-year estimates, sized the 2014-2015 supplemental materials market (all supplemental materials excluding core textbooks) at $6.7 billion, up 2.4% from 2013-2014.

Developments Affecting the Instructional Content Market

K-12 schools have proven remarkably resistant to change over the years, including in the areas of core and supplemental instructional content. New players from technology and teaching are moving in, updated standards have unsettled how materials are created and perceived, and long-standing business models are finding new challengers.

Market Disruptors and New Players

As consumer technology has become more prevalent in education (most visibly with tablet computers), interest by—and the footprint of—technology companies has increased significantly over the past five years. The major technology companies began as providers of devices and operating environments (e.g., Apple iPads and Google Chromebooks) or digital tools (e.g., Microsoft Office Mix or Google Apps for Edu), not instructional content. But that is no longer the whole story. Amazon, Google, and Apple have digital marketplaces to distribute the content and educational apps of others. Amazon has taken this a step further, acquiring ed tech company TenMarks in 2013 and elevating the start-up's co-founder to general manager of Amazon Education.

Teachers, too, are directly competing with instructional materials companies by creating their own content and leveraging the Internet to distribute lesson plans, videos, activities, and more through teacher-focused marketplaces, such as those run by Teachers Pay Teachers and TeachersFirst. These resources, in conjunction with OER, present potentially formidable competition to traditional sources of educational content.

Impact of the Common Core State Standards

Despite all of the political posturing, and parent and educator concern over its related tests, one other development remains clear: the Common Core State Standards are still standing and will be used to judge the suitability of instructional materials in mathematics and English language arts/literacy in the near term, even if they are no longer actually called "Common Core State Standards" in every state that is using them.

Going into the 2015-2016 school year, 43 states, the District of Columbia, and four territories maintained adoption of the CCSS. Originally, 46 states adopted the standards (Minnesota only the English language/arts literacy standards), but Indiana and Oklahoma dropped them,[9] and South Carolina planned to replace them after the 2014-2015 school year.[10] Two more states—Missouri[11] and North Carolina[12]—are reviewing the CCSS and may revise or replace them in 2016-2017. Tennessee definitely plans to replace them in 2017-2018.[13]

That, however, would still leave 40 states as Common Core states (plus the District of Columbia and the territories). Many other state attempts to repeal or otherwise roll back the standards have been rebuffed.[14]

Print and Electronic Assessments

Assessment is an integral part of good instruction: overt or embedded, paper or digital, pop quiz or end-of-course. Three commonly mentioned forms of assessment are summative, benchmark or interim, and formative. (Full definitions of each of these types of assessment appear in Part II of this report.)

As schools embrace more digital instruction, assessments are following suit. Administrators like the potential of cost savings, centralized resource tracking, and more efficient aggregation of assessment data facilitated by electronic assessments. Teachers appear to be drawn to the idea that they can create assessments more easily—using online item banks designed for this purpose—and can score electronic assessments automatically. The holy grail is using electronic assessments to gather student performance data that educators can aggregate and analyze easily in order to personalize learning based on what each student does and does not know at any given time.

However, obstacles to widespread uses of electronic assessments remain. Providing enough computing devices and Internet bandwidth for all schools, classrooms, and students and shifting limited budget dollars to electronic devices are just two. In addition, having a plethora of assessment data is of little use to teachers if they do not have the tools to analyze it or the capability to personalize learning based on the data. Moreover, when technical glitches occur during the administration of high-stakes electronic tests, as happened in a few states during last spring's implementation of the Common Core assessments, the ramifications can be quite serious.

State-Level Assessments

Because every state has mandated testing as the result of NCLB accountability requirements, the 2001 federal law accelerated the expansion of the market. Simba Information has estimated that, in 2002, spending on state-level tests was $400 million. By 2006, it had tripled to $1.2 billion. Growth then slowed, and spending began to decline in 2010 when it dropped to $1.1 billion. Simba indicated spending remained roughly flat for 2011 and 2012 and sagged again slightly to $1.0 billion in 2013. For 2014, the market is expected to grow by an estimated 2% to $1.12 billion and is projected to increase 1.2% to $1.13 billion in 2015.

Transition to the new CCSS tests was the big state-level assessment news of 2014-2015. While assessments created by the two multi-state CCSS testing consortia (the Partnership for Assessment of Readiness for College and Careers or PARCC and the Smarter Balanced Assessment Consortium or SBAC) are not the only state-level, college- and career-ready—or even CCSS—assessments, they are the most prominent.

The original intent behind the consortia, both of which were driven by groups of governing and participating/member states, was to provide CCSS-adopting states with two different options to assess students against the new math and English language arts/literacy standards in Grades 3-8 and high school. Both consortia's assessments are designed to be computer-based.

For 2014-2015 state-level testing, the Education Commission of the States (ECS) counted 11 states plus Washington, D.C., in the PARCC camp and another 18 using SBAC assessments. By comparison, 43 states plus Washington, D.C., and various territories had adopted the CCSS for 2014-2015 use.[15] That means more than a dozen states likely used some other CCSS-aligned assessment in 2014-2015.

The only constant seems to be that the numbers are changing. Each consortium's member totals have declined by a handful of states each year—and significantly since 2010 when PARCC had 26 and SBAC had 31. One large reason for the drop-off by 2014-2015 was that states could belong to both consortia before firmly committing to either's assessments. But another large reason was political pressure related to the adoption of the Common Core Standards themselves, and giving up the CCSS assessments might have been seen as an acceptable sacrificial lamb by state officials to appease those who wanted the new standards tossed out too.

Driven significantly by Common Core assessments, nearly all (if not all) state assessment programs appear committed to moving online at some point. Many states have implemented online testing already. Implementation has not been without glitches, however. By the end of the 2014-2015 state-level assessment season, at least a half-dozen states cited major issues with online assessments.

Building- and District-Level Assessments

While news media and policymaker attention tends to be directed to high-profile, high-stakes tests, the actual day-to-day work of applying assessment results rests more on assessment instruments purchased and delivered at a district, building, or classroom level. While about ten organizations supply state-level assessment services, the number increases dramatically when all the companies providing interim/benchmark and formative assessment products are included. Pearson, Measured Progress, CTB (the key assets of which McGraw-Hill is selling to Data Recognition Corporation, as announced by the two companies in late June), Renaissance Learning, Amplify (including the former Wireless Generation), Northwest Evaluation Association (NWEA), and Edmentum (notably its Study Island) are among the major companies doing business in this space.

Other Trends Affecting Classroom Practice

A number of developments are affecting the shape of the materials market today and have the potential to reshape it in the future. As technology drives change in the curriculum materials market, suppliers also face increased competition from providers of Open Educational Resources (OER), sometimes known as "free stuff." In addition, teachers are using instructional resources in different ways as they give students more control over what happens in the classroom, implementing such practices as project-based learning and flipped classrooms.

Open Educational Resources (OER)
With foundation grants and district staff enabling the creation of digital materials that are free to use, modify, and share, OER are attempting to scale. In 2015, a consortium of 12 states known as the K-12 OER Collaborative began to create entire OER-based English language arts and mathematics courses, under the coordination of the non-profit The Learning Accelerator, with $2 million in funding.[16] As these materials proliferate, they make life more difficult for education publishers and other sources of educational materials who expect (and need) their customers to pay for content.

Project-Based Learning (PBL)
Project-based learning is a dynamic classroom approach in which students actively explore real-world problems and challenges and acquire a deeper knowledge, according to *Edutopia*.[17] To help teachers better understand project-based learning, *Edutopia* has brief videos on the five core strategies of PBL, defined as (1) Establishing Real-World Connections in Projects, (2) Building Rigorous Projects That Are Core to Learning, (3) Structuring Collaboration for Student Success, (4) Facilitating Learning in a Student-Driven Environment, and (5) Embedding Assessment Throughout the Project. Other names sometimes used for similar strategies include problem-based learning and inquiry-based learning.

Activities from groups such as Network for Teaching Entrepreneurship (www.nfte.com) can present a structure for real-world problems and solutions. Headquartered in New York City, NFTE typically works with high school teachers in urban, lower income schools. For students, the challenge of developing a real company—doing market research and developing a business plan—provides integrated learning in communication, math, and much more. A similar group, serving only K-8 students in Ohio, is Invention Convention (www.inventionconvention.org).

Flipped Learning
K-12 public school educators continue to explore new ways of combining and using digital and non-digital learning. “Flipped” learning has gotten much publicity in recent years. In an effort to standardize the meaning, the leaders of the Flipped Learning Network (www.flippedlearning.org) recently defined “flipped learning” and “flipped classroom” and set four pillars and 11 indicators of flipping. The four pillars of FLIP are flexible environment, learning culture, intentional content, and professional educator.[18]

Despite the attention flipped learning has received, use of this technique is not yet widespread. Curriculum directors were asked about the extent to which flipped learning has been implemented in elementary, middle, and high schools within their districts. The suggestion that flipped learning is not commonplace is borne out by the data.

The percentage of districts with substantial implementation (responses of 4 and 5 on a 5-point scale) of flipped learning ranges from 1% for elementary schools to 9% for high schools. At the middle school level, 3% of districts have substantial implementation of flipped learning.

Competency-Based Learning
K-12 education has measured learning in most courses in “seat time” rather than “competencies” for many years, but that may be starting to shift. By establishing proficiency-based diplomas, credit flexibility, or seat-time waivers, 36 states are moving toward competency education. Work in competency-based education has begun in states including Idaho, Oklahoma, Iowa, New Hampshire, and Maine.

iNACOL is monitoring the activity in competency-based and mastery-based education in each state. In July 2015, iNACOL issued a report with CompetencyWorks, written by Susan Patrick and Chris Sturgis, *Necessary for Success: Building Mastery of World-Class Skills, A State Policymaker's Guide to Competency Education.*[19] This report provides rich detail for those interested in competency-based learning activities in a particular state.

Digital Badges

Educators and students are also starting to experience credentialing based on competencies. Google, Microsoft, and BrainPOP are among the companies that have done work in this area. In each of these programs, a set of requirements is delineated, and the educator must in some way demonstrate ability and knowledge—not just attend a workshop. After doing so, the educator gets a "certification" and badge, which she can add to her email or website or place in an electronic portfolio.

Innovators in education and workforce development are using data-rich open badges to identify talent, mark learning pathways, and open doors to opportunities worldwide. Badges and the evidence behind them can be a workforce development tool to inform supervisors, hiring managers, and recruiters.

One of the first education organizations to give badges to students was Khan Academy, in 2010. Today more than 100 badges are offered, some for perseverance ("Correctly answer 60 problems in a row in a single skill") and others for achievement ("Achieve mastery in 100 unique skills"). To learn more about digital badges, read EdNET Insight's report *Digital Open Badges in Education: What Is a Badge and Why Do It?* (published in July 2014) that can be accessed from the member-only website.

STEM Education

The STEM (science, technology, engineering, and mathematics) movement strives to improve U.S. competitiveness through enhanced programs of integrated teaching and learning. (Some initiatives add an A for the Arts to create the acronym STEAM.) At the March 2015 Science Fair at the White House, President Obama announced more than $240 million in new private-sector commitments to inspire and prepare more students—especially those from underrepresented groups—to excel in the STEM fields. The "Educate to Innovate" campaign has resulted in more than $1 billion in financial and in-kind support for STEM programs.

Developments Affecting Educational Technologies

Two instructional models rely on personal technologies that students use in and out of the classroom. One is the bring your own device (BYOD) model that allows students to use their own devices—smartphones, tablets, or other mobile devices—in school for instructional purposes. The other, the one-to-one computer model, which emerged in the late 1990s before personal devices were as prevalent as today, relies upon schools to provide each student with his or her computing device.

Section 2: Highlights of Findings From MDR Surveys and Databases and Related Information

The K-12 Education Landscape

When all types of educational institutions—public and private elementary and secondary schools and postsecondary degree-granting institutions—are combined, total spending reaches $1.2 trillion, of which 57% is devoted to K-12. According to the National Center for Education Statistics (NCES), for the 2012-2013 school year, total education expenditures represented about 7.2% of the nation's gross domestic product (GDP), with spending in the K-12 sector accounting for 4.1% of total GDP. Since 2003, K-12 expenditures have fluctuated between 4.1% and 4.5% of GDP.[20]

The K-12 Universe

- MDR's National K-12 Education Market Database covers 114,366 schools, most of which are public. More than three-fourths (76%) are traditional public schools, 6% are charter schools, and the remainder are classified as private (12%) or Catholic (6%). Charter schools are technically public schools, but they operate with more autonomy than traditional public non-charter schools.
- The overall number of schools remained essentially flat versus 2014, decreasing by less than 1%. Though charter school growth has slowed, charters are the only segment in which the number of schools increased, by just less than 1%.
- K-12 enrollment in the fall of 2014 stood at over 55 million students. Most U.S. students (87%) attend traditional public schools, 4% are enrolled at charter schools, and the remaining 9% attend private or Catholic schools. Enrollment growth in the charter sector has slowed somewhat. Though charter school enrollments increased by 6% from the prior year, enrollment is down from 11% growth in 2013-2014, likely reflecting a period of consolidation.
- Excluding specialized schools (i.e., career/technical, special education, and adult education schools), 59% of the schools in MDR's database are classified as elementary schools, 13% as middle schools, 18% as high schools, and 9% as combined K-12 schools.
- There are 13,336 school districts in the U.S. The states with the largest number of districts are Texas (with 1,029 districts) and California (with 942), serving 5 million and just more than 6 million students, respectively. New York has nearly 2.8 million students within 689 districts. Florida, on the other hand, serves roughly the same number of students but has only 68 districts. Illinois rounds out the top five enrollment states, enrolling just over 2 million students in 855 districts.

- When looked at by region, the Midwest accounts for more than one-third (36%) of all districts and the West barely one-fifth (19%). There are, however, significant regional differences by size: three-fourths of the nation's largest districts are in the West (33%) and South (42%) but very few are in the Northeast (only 8%). Two-fifths (40%) of all small districts are in the Midwest, a reflection of widely scattered populations in this mostly wide-open section of the country.
- Most large districts (10,000+ students) are in either urban or suburban settings. More than half (53%) of the nation's districts are located in rural areas, with roughly 20% in town and 21% in suburban settings. Only 6% of all U.S. school districts are found in urban settings.
- Between 9% and 11% of districts serve high-poverty populations, those in which 75% or more of students are eligible for the federal free and reduced-price lunch (FRPL) program, which provides free or reduced-price lunches to children of families whose income falls below certain guidelines. Between 16% and 19% of small and large districts serve low-poverty populations, those in which fewer than 25% of students are eligible for FRLP. A higher percentage of medium-sized districts serve low-poverty populations than do small or large districts.
- Nationally, more than three-quarters (76%) of districts have modest special education populations, between 10% and 19% of all students. Small districts are somewhat more likely than large- or medium-sized districts to have larger concentrations of special education students, with 12% of small districts having special education populations of 20% or higher, compared with only 3% of large districts and 6% of medium districts.
- Many U.S. districts enroll significant numbers of students with limited English proficiency (LEP). One in four districts now report LEP enrollments of 10% or higher, up from 18% the year earlier. There are considerably larger percentages of LEP students in large districts (43% of large districts have 10% or higher LEP enrollments).
- There are 165,380 administrators working in the American public school system, including administrators who work at the state level. The vast majority (96%) of these administrators work in traditional public school district settings. Of the administrators, more than 20,000 are either superintendents or assistant/deputy superintendents; 196,026 are either principals or assistant principals.
- Some 3.5 million teachers teach in U.S. public schools, of which 96% teach in an elementary, middle/junior high, senior high, or combined K-12 school building. Nearly half (49%) of all public school educators teach at the elementary school level, while just over a quarter (26%) teach at senior high schools and 18% teach at the middle school or junior high level. In addition, there are 108,514 librarians, media specialists, and library aides working in K-12 public schools.
- In the fall of 2014, there were 6,549 charter schools in operation, serving 2,447,646 students. Charters accounted for nearly 7% of all public schools and enrolled roughly 5% of all public school students. According to the Center for Education Reform, charter schools receive 36% less revenue per pupil than their traditional school counterparts do—an average of $7,131, compared with $11,184 per pupil at conventional district public schools.[21]

Trends in Student Enrollment

- In the fall of 2014, America's public schools enrolled 49.8 million students, according to NCES projections. Between fall 2013 and fall 2023, total public enrollment is expected to grow by 5%. Public elementary school enrollment (PreK-8) is projected to grow by 5% between 2013 and 2023, with secondary school enrollment during the same period increasing by 3%.
- Major regional differences in enrollment growth are anticipated over the next ten years, reflecting America's movement South and West. PreK-12 public school enrollment between 2013 and 2023 is expected to drop by 1% in the Northeast, remain flat in the Midwest (-0.2%), and grow by 7% in the South and 9% in the West.
- America's classrooms are becoming increasingly diverse. Between 2003 and 2013, the percentage of public school students who were White decreased from 59% to 50%, while the percentage of those who were Hispanic increased from 19% to 25%. The number of White students enrolled in America's public schools is projected to decrease by 6% between 2013 and 2023. Black enrollments will grow by 2% and Asian/Pacific Islanders by 12%. During the same period, the number of Hispanic students is projected to grow by 24%.[22]
- In 2012-2013, the last year for which numbers are available, the Department of Education's ED Data Express website reports that 4.9 million students were English language learners, up from 4.7 million in 2010-2011. The number of students served in ELL programs is expected to continue to grow.

Education Funding and Expenditures

- Overall funding for all public and private K-12 education in the United States is currently about $665 billion. According to the National Education Association (NEA), public school funding in 2014-2015 was $625,983,951,000, an increase of 2.2% over the revised figure of $612,526,927,000 reported for 2013-2014.
- The sources of public school funding, according to the NEA, were 46.3% from states, 44.1% from local sources, and 9.6% from federal funds.[23]
- The federal Department of Education's budget for FY2015 is $67.14 billion, appropriated under the Consolidated and Further Continuing Appropriations Act of 2015, which Congress passed in December of 2014. This is a decrease of $166 million—about a quarter of 1%—from FY2014.
- For FY2016, the Administration is requesting $70.7 billion in discretionary appropriations for the Department of Education in FY2016, an increase of 5.4% over FY2015. The President's proposal includes a $1 billion increase for Title I and a $50 million increase for School Improvement Grants and several new programs, including the Educational Technology State Grants program at $200 million.
- In early May, Congress passed the joint budget resolution for FY2016, which calls for cutting $496 billion in non-defense spending over the next ten years. For FY2016, the plan adheres to the budget caps established by the Budget Control Act of 2011. With the budget resolution in place, the various appropriations committees have been working on detailed budgets for the agencies under their control. There would be no increase in funding for the Department of Education under this plan.
- State economies continued their upward trend in 2015. According to the National Conference of State Legislatures (NCSL), revenue collections have met expectations

in 35 states and the District of Columbia. In the NCSL's *State Budget Update, Fall 2014*,[24] most legislative fiscal directors described their state fiscal situation as "stable," an indicator of slow and steady growth.

- Enacted 2015 budgets show state revenues reaching $748.3 billion, an increase of 3%, compared with the estimated 1% gain in fiscal year 2014, when revenues stood at $726.1 billion. Revenue growth is widespread: 43 states enacted fiscal year 2015 budgets with higher general fund revenues than in fiscal year 2014. State general fund expenditures are projected to increase by 3% in fiscal year 2015, reaching $751.6 billion.
- The NEA estimates that total public elementary and secondary school expenditures for the 2014-2015 school year amounted to $670 billion, a 3.3% increase from the revised 2013-2014 figure of $641 billion. This is the second strongest year-over-year increase in K-12 expenditures since the 2007-2008 school year.
- The NEA's estimate of average per-pupil expenditure in 2014-2015 was $11,732, an increase of 3.3% over the prior year.
- Instruction and instruction-related services—including staff salaries and benefits, libraries, in-service teacher training, curriculum development, student assessment, instructional technology and supplies, and purchased services related to these activities—make up 57% of all K-12 spending and 65% of current expenditures, according to NCES. Salaries and benefits account for the vast majority of instructional spending.

Professional Development

- Half of the curriculum directors surveyed by MDR expect their professional development budgets to stay the same in 2015-2016 as they were in 2014-2015. Some 21% expect to see an increase in their PD budgets; 29% expect to see their budgets decrease.
- Thirty-nine percent of technology directors expect spending for teacher training to increase a little or a lot in 2015-2016, compared with 43% who expected increases the prior year. Nine percent of technology directors expect spending for teacher training in technology budgets to decrease a little or a lot, compared with 12% in the prior year.
- From 2010 to 2013, the two most popular formats for professional development have consistently been professional learning communities and local conferences, followed by use of master teacher/coaching and on-site independent consultants. Online courses have been used rather infrequently; between 2011 and 2013, the use of online courses provided by institutions of higher education has fluctuated between 13% and 23%. The use of online courses from sources other than higher education has fluctuated between 11% and 16%.
- Forty-one percent of districts have provided teachers with training on instructional methods to support STEM subjects. Large and urban districts are more likely than their peers to have provided such training.

Educational Materials

The Size of the Instructional Materials Market

Estimates of the size of the instructional materials market vary, depending on the source of the information and what categories of spending are included. Simba Information, in its *Publishing for the PreK-12 Market 2015-2016*,[25] reported that educational print and digital media sales were $8.72 billion in 2014, up from $8.18 billion in 2013. Simba's numbers include textbooks, print supplements, manipulatives, trade books, magazines, state tests or summative high-stakes assessments, digital courseware, digital supplements, and video. Simba's prediction for 2015 is a slight decrease, to $8.56 billion, largely due to contraction in basal print/digital textbook sales.

The size of the U.S. market for PreK-12 educational software and digital content was $8.38 billion in the 2012-2013 school year, according to the Software & Information Industry Association (SIIA). This estimate, up 5.1% over $7.97 billion the previous year, represents an increase of 11.7% over the four years of the survey. SIIA's numbers aggregate U.S. PreK-12 revenues from education applications, digital content, and related online services; they do not include hardware, network infrastructure, or Internet services but do include non-instructional items, such as scheduling programs, gradebook software, and related materials.

District Expenditures on Instructional Materials

MDR collects and analyzes information from state departments of education about each public school district and its spending for all instructional materials (AIM) as part of ongoing data collection efforts.[26] Total AIM expenditures for K-12 public schools were $11.8 billion in 2013-2014, the most current school year for which AIM data is available. This is a 9% increase from the $10.8 billion spent in the 2012-2013 school year. This billion-dollar jump in AIM expenditures reverses a five-year decline linked to the recession that began in 2008, though spending has not quite returned to its pre-recession levels.

- The percentage of districts spending less than $200 per pupil on instructional materials in 2013-2014 dropped from 36% to 35%, compared with the prior year. The percentage of districts spending $200-$299 per pupil rose from 31% to 32%. Other levels of spending remained the same.
- In general, small districts spend more per pupil than larger districts: 22% of small districts spend more than $400 per pupil on instructional materials, compared with only 5% of large districts. Similarly, more than half (54%) of large districts spend less than $200 per student on instructional materials, compared with a third (31%) of small districts.
- Regionally, the South and the West spend the most per pupil on instructional materials, with 41% of districts in the South and 39% in the West spending $300 or more per pupil. In the Northeast, 35% of districts spend more than $300 per pupil. In the Midwest, 46% of districts spend less than $200 per pupil, and more than three-quarters (76%) spend less than $300 per pupil on instructional materials.

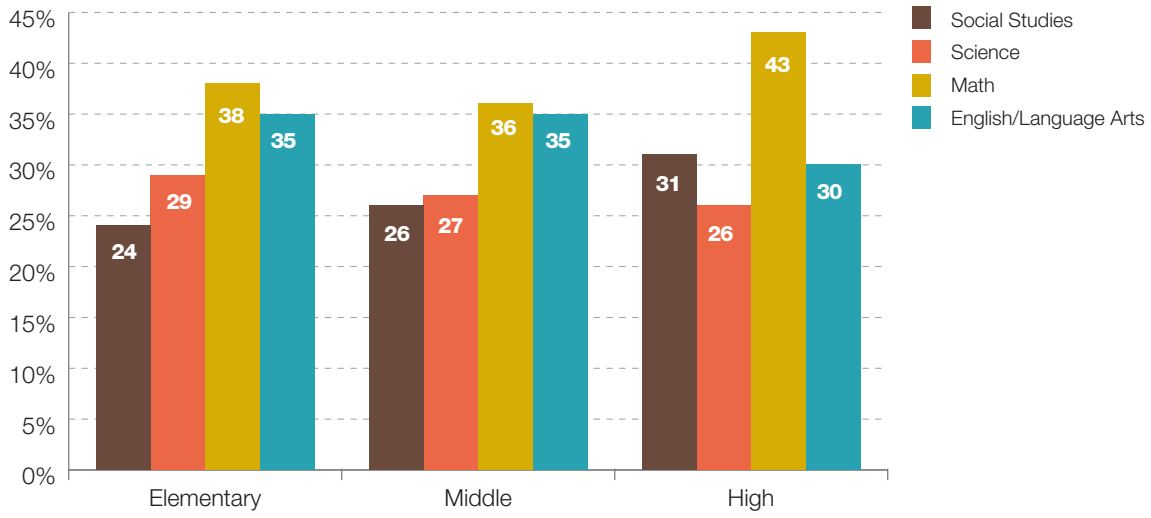
Instructional Budget Outlook

- The instructional budget outlook for 2015-2016 is holding steady compared with the 2014-2015 school year, with 86% of districts keeping instructional budgets the same or changing them only a little. Districts planning to increase instructional materials spending by “a lot” have dropped from 4% last year to 2% for the 2015-2016 budget year, and those planning to decrease spending “a lot” have jumped from 8% last year to 12% for 2015-2016.
- More districts in the West expect budget increases for instructional materials in the 2015-2016 school year, proportionately, than those in other regions. Forty-one percent of districts in the West expect to increase their instructional materials spending, compared with 18% of districts in the Midwest and 20% of those in the South. In the Northeast, 36% of districts expect budget decreases for instructional materials, compared with only 19% of districts in the West.

District Purchasing Plans

- More districts expect to purchase math instructional materials in the 2015-2016 school year than materials in other subjects, according to curriculum directors. High schools lead in this focus on math materials with 43% of districts reporting plans to buy high school math materials (compared with 33% last year).
- English language arts materials are the next buying priority overall, with 35% of districts planning to purchase elementary and middle school English/language arts materials and 30% planning to buy these materials for high schools. Despite much emphasis on science education and non-fiction reading, fewer than a third of districts plan to purchase science and social studies materials in the 2015-2016 school year.

Figure ES 1: Plans to Purchase Instructional Materials by Subject and Grade Level



Note: See Table A2.6 In Part II for related data table.
EdNET Insight Survey © 2015, Market Data Retrieval. www.ednetinsight.com/AboutTheData

An Emerging STEM Market

In response to widespread calls to improve STEM education, school districts have been taking many steps to fulfill this perceived national need. Chief among them has been to align curriculum, instruction, and assessment with Next Generation Science Standards (NGSS). Nearly half (46%) of districts have teams currently working on this alignment according to a survey of curriculum directors. The next most common action, taken by 41% of districts, has been to train teachers on instructional methods to support STEM subjects. Almost as many districts (39%) have revised the curriculum to support STEM subjects. Three actions have been taken by over a quarter of all districts: 29% have implemented Project Lead The Way in one or more schools (Project Lead The Way claims to be the nation's leading provider of STEM programs), 28% have created a formal STEM program, and 27% have added or expanded science labs. Some districts have not taken any action, and 3% have no plans to do so in the 2015-2016 school year. However, 7% of districts plan to make their initial moves into STEM activities during 2015-2016.

Assessment Providers: Penetration Rates

Based upon this year's survey of district-level curriculum directors, products from Renaissance Learning (including STAR Reading, STAR Math, and other STAR programs), Northwest Evaluation Association (including Measures of Academic Progress), Pearson (including AIMSweb, GMADE, and GRADE), and Edmentum (specifically Study Island) are among those with the highest penetration in school districts.

- Renaissance Learning remains in the lead position in elementary grades, with a 39% penetration rate. Renaissance was also the leader in 2014 and 2013.
- Renaissance also tops the middle school category, with 34% penetration, but drops to third position in high school, with a 17% penetration rate.
- NWEA has the highest penetration—24%—of all providers at the high school level in 2015, repeating its 2014 position. It is tied for second, with Edmentum's Study Island, in middle school penetration, at 28%. (NWEA had been first in 2014.) It is tied for third with Pearson in elementary grades; both have a 28% penetration rate. (NWEA was third in 2014 as well.)
- Renaissance Learning and NWEA are joined by three other major players in second and third positions. Amplify (known for mCLASS assessments and Burst: Reading, among others) is at second for elementary grades, with 30% penetration. Pearson is third in elementary and middle grades, where it has 18% penetration. Edmentum's Study Island is second in both middle schools and at the high school level, where it has 19% penetration.
- Outside of those five providers, no companies crack the top three in any grade span.

Classroom or Formative Assessment

Nearly any assessment instrument can be used formatively if the results are returned fast enough to guide teacher instruction and student learning. Even simple polling, using student response systems (a.k.a. "clickers") or click-through apps for smartphones and tablets, is a type of formative assessment.

In a new district curriculum director survey question for 2015, MDR asked, "What additional resources do you need from assessment providers to support your district's assessment development efforts?" The two top choices—and the only ones selected by more than half of curriculum directors—are "Item banks" and "Professional development on writing valid assessment items" (55% each). Somewhat less important are different kinds of tools: "Reporting and/or data analysis tools" (41%), "Tools for authorizing assessment items" (36%), and finally "Help interpreting the data" (25%). The percentage of curriculum directors who indicate their "District does not develop assessments in-house" is in the single digits (8%).

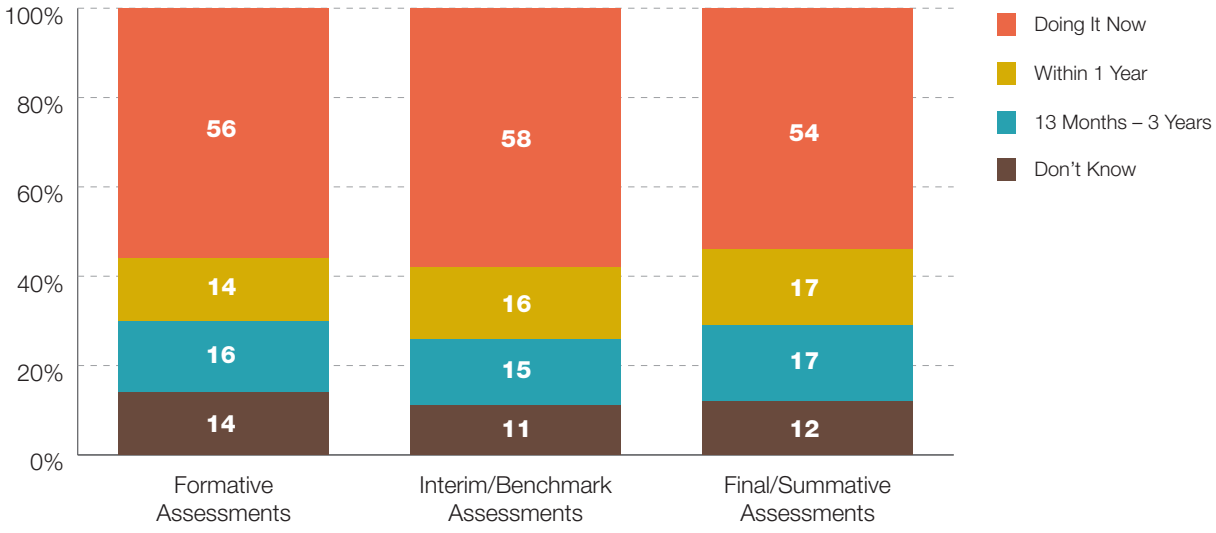
Creating and Managing Classroom Assessments

In another new question for 2015, MDR wanted to understand what specific products teachers in a district are using as tools for classroom assessments. The responses were very fragmented, ranging from free polling tools to free Google tools alongside various paid test creation products. Even though multiple responses were allowed, the only product reportedly used in more than one in ten districts is Socrative (16%), the free student response quizzing app for smartphones, tablets, and laptops acquired by MasteryConnect in 2014.[27] Next is the subscription, web-based test creator Quia[28] (9%). No other product is reported by more than low, single-digit percentages of curriculum directors, including freemium MasteryConnect[29] itself, Mastery Manager from Goldstar Learning, and all things Google (at 3% each).

Moving District Assessment Online

For the second year, MDR surveyed district technology directors on when they plan to make assessments digital and administer them online. The top answer for all three types of assessment listed is "Doing It Now," though there are some differences by type of assessment.

Figure ES 2: Administration of Assessments Online (in Core Subjects): All Districts



Note: See Table A2.48 in Part II for related data table.
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Interim or benchmark assessments are slightly more likely (58%) to already be administered online than formative (56%) or final/summative (54%) assessments. Combining responses within the one-year time frame ("Doing It Now" and "Within 1 Year") pushes the totals well past two-thirds of districts for each assessment type: formative (70%), final/summative (71%), and interim/benchmark (74%). In effect, if plans hold true, seven in ten districts will be doing the majority, but not necessarily all, of their core subject student assessments online within one year.

Test Preparation

Test preparation comes in three general varieties. The first, most familiar to consumers, are test prep products and services for the SAT, ACT, GRE, LSAT, GMAT, and other examinations for students headed to college or graduate school. Well-known brands of this variety include Kaplan and Princeton Review. The second variety is of K-12 assessment products that can be used for test preparation because they have content tied to standards mastery, such as Edmentum's Study Island, though the products are not solely designed for a test prep purpose. The third and final variety is school-oriented products exclusively intended to provide test-taking strategies, review, coaching, and/or practice tests for assessments with high stakes.

Grade level is a strong differentiator when it comes to the popularity of test preparation products within districts. The top-listed high school providers vary greatly from early grades, in large part likely due to college admissions test preparation.

The largest "provider" of both elementary and middle school test prep is, effectively, "none of the above" for the second year in a row. Curriculum directors when asked, "Which providers does your district currently use for commercial materials that prepare students for your state's high-stakes testing?" and given the option of choosing as many as they wished, select "District does not use commercial test prep materials" most often in elementary school (43%) and middle school (35%) and do so more often than any single-named provider. That percentage of non-use is much lower in high school grades (21%).

In elementary, the top-named test prep provider is Edmentum's Study Island (29%) and is the only product with a penetration reported by more than one-quarter of district curriculum directors. Study Island is in the top position (30%) in middle schools as well. In high school grades, penetration rankings and rates change as colleges and careers come within view. ACT (51%) and The College Board (44%) take the first two positions, with Study Island (17%) a distant third. No one else cracks double digits.

In a new survey question in 2015, MDR asked curriculum directors to be more specific about their non-use of commercial test prep materials. Any curriculum director who answered, "District does not use commercial test prep materials" in the previous section was then asked, "What type of non-commercial test prep materials does your district use?" More than two-thirds answer, "District uses district- or state-created test prep materials" (69%). Second is, "District does not use any type of test prep materials (commercial or non-commercial)" (27%). Third is, "District uses Open Educational Resource (OER) test prep materials" (15%).

Online and Blending Learning

This year's survey shows that the use of online instruction is increasing but not at the prior year's pace. Asked if their districts offered any online courses, defined as courses "offered partly or entirely over the Internet instead of entirely by face-to-face instruction," curriculum directors responded as follows:

- 35% said they increased the number of courses offered in 2014-2015 compared with the prior year.
- 33% said they offered the same number in 2014-2015.
- 17% said they didn't offer any online courses but plan to within the next three years.

New to the survey in 2015, respondents were asked to identify the primary model their districts use for online courses: blended learning—meaning instruction in which online learning with some measure of student control over time, place, path, and/or pace of instruction is mixed with supervised instruction at a bricks-and-mortar location—or fully online learning. Blended learning is now the primary model for online instruction, selected by 59% of districts, versus 41% who selected fully online.

The responses differed by both district size and region.

- Medium-sized districts are higher users of blended learning than other districts, with 65% identifying blended as the primary approach for online learning, compared with 57% of small districts and 55% of large districts.
- Regionally, the West is the only area of the country where fully online learning is preferred over blended learning. Some 54% of districts in the West identified fully online learning as their primary approach, compared with 42% in the South, 39% in the Northeast, and 36% in the Midwest.

Few districts report that most of their students are participating in online courses, but most districts have some level of student participation.

- 32% of curriculum directors say that 1% to 9% of their students take one or more blended courses.
- 21% of districts report that 10% to 24% participate in at least one blended learning course.
- 59% of districts report that 1% to 9% of their students take one or more fully online courses.
- 19% say that 10% to 24% of their students take at least one fully online course.

The providers of online courses are a mix of public and private entities, ranging from state virtual schools, regional education authorities, and individual districts to diversified education companies, such as Pearson and McGraw-Hill to smaller firms that focus tightly on the online learning niche. The market is rather fragmented, with no one player penetrating more than 25% of districts and no one category of provider clearly dominant.

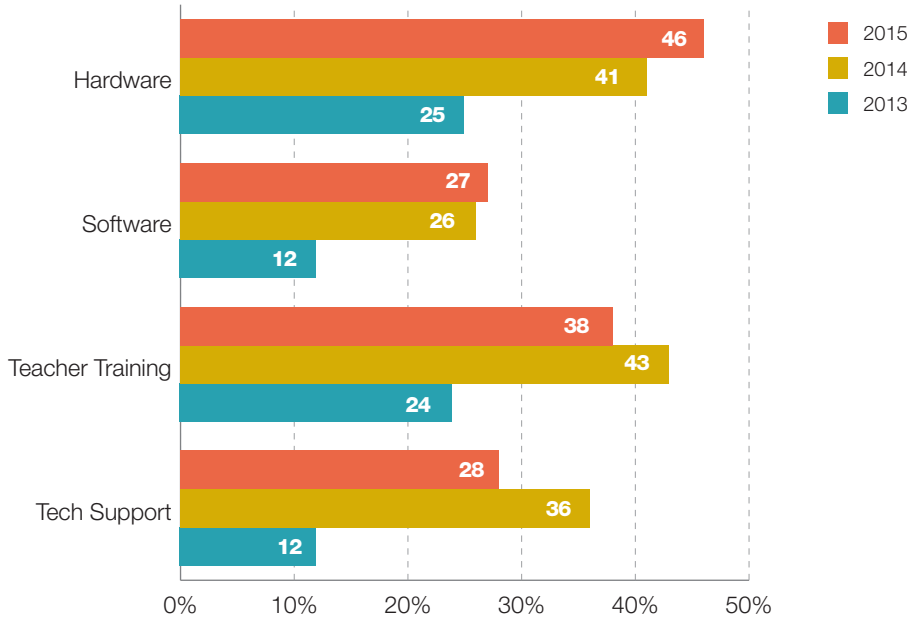
- The company with the highest reported district penetration in the 2015 survey is Edgenuity, used by 24% of districts.

- A three-way tie among private- and public-sector providers follows closely, at 21% penetration, with Apex Learning, state virtual schools, and individual districts sharing the second-place position.
- Next, at 20% penetration, comes McGraw-Hill's ALEKS (**A**ssessment and **LE**arning in **K**nowledge **S**paces) product, followed by Compass Learning, used in 18% of districts; Edmentum (formerly PLATO Learning) at 17%; and ODYSSEYWARE and Pearson, both at 14%.

Educational Technologies

The outlook for district technology budgets in the 2015-2016 school year continues the improvement seen last year, which ended the relative status quo of the previous three "recession" years. The gains are not across the board or as large as last year's but progress continues. Compared only with last year, the results are mixed: more districts expect to increase hardware and software spending from the prior year, while the number of districts increasing budgets for teacher training and tech support declined somewhat.

Figure ES 3: Technology Budget Outlook (Districts Citing an Increase): All Districts 2015, 2014, and 2013



Note: See Table A3.2 in Part III for related data table. Responses of 4 and 5 are defined as budget increases.
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- While roughly half of districts are holding fast to last year's gains with no change expected, between 27% and 46% of districts expect to increase spending, depending on the technology budget area in 2015-2016. Only 8% to 12% of districts report decreasing technology budgets.
- Hardware budgets and spending for teacher training have the most increases, proportionately, with 46% of districts boosting expenditures for hardware and 38% expanding teacher training.
- Twenty-eight percent of districts are increasing their budgets for software and 27% for tech support over their 2014-2015 budgets.

New this year, technology directors were asked what kinds of instructional hardware their district plans to purchase by grade level in the 2015-2016 school year. Their plans for personal computing devices are as follows:

- Tablet purchases are planned by 87% of districts. Generally speaking, tablets are seen as being more appropriate for younger students: 68% of districts plan to purchase tablets for the K-2 grade level, 56% of districts plan to buy tablets for the 3-5 grade level, 40% are targeting middle schools, and 36% are buying them for high school students.
- Laptops (non-Chromebooks) are a close second behind tablets, with 86% of districts planning to buy them. The pattern of purchase intent by grade level is the opposite of the pattern for tablets. The range goes from 68% of districts buying laptops for high schools to 30% buying them for K-2.
- Purchases of desktop computers are planned in 83% of districts, and 77% have budgeted to buy Chromebooks. In both cases, districts plan to buy the hardware more often for older students than for students in lower grades.

When it comes to purchase plans for classroom-level technologies:

- The workhorse standard projector (non-interactive) is in the budgets of 71% of districts.
- Nearly two-thirds (64%) of districts plan to purchase interactive whiteboards.
- Interactive projectors are expected to be bought by 53% of districts.
- More districts plan to buy non-interactive flat panel displays (56%) than interactive displays (45%).

Instructional Technologies

For all of the attention given to student devices, front-of-the-room technologies are still the most widely deployed for instructional purposes. ("Substantial implementation" as used below means a rating of 4 or 5 on a 5-point scale in response to a survey question.)

- Some 69% of districts report substantial implementation of standard projectors, followed closely by interactive whiteboards (IWBs) at 68%.
- The third most widely deployed technology is another front-of-the-classroom tool, the document camera, substantially implemented in 55% of districts.
- Interactive projectors are substantially implemented in 32% of districts.

Laptops are still the most widely deployed student device.

- Laptops are substantially implemented in 52% of districts, a fairly large lead over mobile alternatives.
- Chromebooks are now slightly ahead of tablets, substantially implemented in 37% of districts versus tablets in 35% in districts.

With regard to their plans for the future, technology directors' priorities are wireless networks and providing personal computing devices to their students.

- Building out their wireless networks remains technology directors' top priority, with 74% rating it a high priority over the next three years.

- One-to-one computing using any kind of personal computing device was rated a high priority by 58% of technology directors.
- Chromebooks followed at 49% and cloud applications at 41%.
- Tablets fell a full 18 percentage points behind Chromebooks to 31%.

Mobility

The degree to which students have access to full-time mobile computing is striking.

- At the high school level, 45% of technology directors report that more than three-quarters of students have full-time access.
- Some 37% of technology directors say that more than three-quarters of middle school students have full-time access to mobile computing.
- Twenty-one percent say that more than three-quarters of elementary school students have full-time access.

As for where there are no students with full-time access, technology directors say that is the case in 13% of high schools, 11% in middle schools, and 12% in elementary schools.

One-to-One Computing and BYOD

Implementing one-to-one computing remains high on districts' priority lists.

- 58% of technology directors report that one-to-one is a high priority for them over the next three years.
- 28% say it is a medium priority.
- Only 14% consider it a low priority.

Medium-sized districts are particularly enthusiastic about one-to-one, with 63% saying it is a high priority versus 57% of large districts and 54% of small districts. Large districts lag behind other districts in fully implementing one-to-one computing. Only 14% of large districts (versus 25% of districts in general) have implemented one-to-one at the high school level, and 11% of large districts (versus 23% in general) report full implementation in middle schools.

The level of one-to-one implementations rises as grade levels increase. Full one-to-one implementations, for example, are reported in high schools by 25% of districts, in middle schools by 23% of districts, and in elementary schools by 7% of districts. Reporting no implementation at all of one-to-one computing in elementary schools are 46% of districts, compared with 35% reporting no implementation in middle and high schools.

Supporting student-owned devices may have fallen in priority, with only 20% of technology directors considering it a high priority (versus 27% a year earlier), but BYOD is very much a reality in many districts.

- 21% of districts say BYOD is in place in all of their high schools, and another 33% have implemented it in at least some of them.
- 16% of districts say BYOD is in place in all of their middle schools, and another 32% have implemented it in at least some middle schools.
- In elementary schools, 10% of districts say BYOD is in place in all of their buildings, and another 31% have implemented it in at least some buildings.

Fewer than half of districts have no plans at all to implement BYOD in 2015-2016.

Similar to one-to-one implementations, we see increasing use of BYOD as grade levels increase. A fifth (21%) of districts report that all high schools have implemented BYOD programs. By comparison, all middle schools in 16% of districts have done so. Only 10% of districts report that all of their elementary schools have implemented BYOD.

Personal Computing Technologies

This year's survey brings to light some significant shifts in districts' preferences for various kinds of devices and their plans for deploying them. Technology directors plan to rely on Chromebooks much more than a year ago, while tablets figure less prominently in their hardware plans.

The installed base of laptops is large enough that they are likely to be on the scene for a while longer.

- Substantial implementation of laptops is highest, at 65%, in large districts.
- Laptops are substantially implemented in 54% of medium-sized districts and 46% of small districts.

Chromebooks are now slightly ahead of tablets in their current levels of implementation.

- Substantial implementation of Chromebooks grew to 37% this year, almost double the prior year's 20% rate.
- Substantial implementation varies little by district size, but there are notable differences by district type. Urban districts are the leaders in Chromebook deployment, with 49% reporting substantial implementation, followed by suburban districts at 40%, town districts at 31%, and rural districts at 34%.

The growth in implementations of tablets decelerated this year—up only 1% in substantial implementation versus an increase from 25% to 34% substantial implementation between 2013 and 2014. That said, almost all of the districts in this year's survey are providing tablets to at least some of their students.

- Some 35% of districts report substantial implementations of tablets, and another 59% report at least partial implementations.
- Only 6% of technology directors say they have no tablet implementations in place.
- All technology directors in large districts reported at least a partial implementation, but substantial implementation of tablets is more prevalent in small districts. Some 38% of small districts report substantial tablet implementations versus 35% of medium-sized districts and 27% of large districts.

A look at which tablet operating systems districts are using provides a sense of how much Apple still dominates the tablet world.

- 81% of districts report using devices that run iOS, the operating system found in iPads and other Apple devices.
- 43% use devices that run Windows.
- 32% use devices that run Android (including the Kindle Fire OS, a version of Android).
- Only 1% run the open-source Linux operating system.

Cloud Applications

Some 41% of districts rate cloud applications a high technology priority over the next three years.

- More large districts (49%) consider them a high priority than medium-sized districts (42%) and small districts (38%).
- There are also some striking differences by metropolitan status: 49% of urban districts consider cloud applications a high priority versus only 34% of town districts. The comparable percentages for suburban and rural districts are 45% and 40%, respectively.

Classroom Technologies

Almost all districts deploy interactive whiteboards (IWBs) to some degree, with only 6% saying they have not implemented them at all. Large districts are somewhat less likely to be big users of IWBs, with 60% reporting substantial implementation, compared with 64% of medium-sized districts and 74% of small districts. On the other hand, large districts are more likely to have deployed IWBs at some level, with 38% reporting partial implementation versus 30% of medium-sized districts and 20% of small districts.

District penetration rates for the major providers of IWBs have changed very little in the past year. SMART Technologies, the perennial leader, remains in first place, with 77% reported penetration, down only a tad from 80% a year earlier. In second place is Promethean, whose penetration rate is up slightly to 37% from 35% a year earlier. Mimio is No. 3, having gained the most in percentage terms; its penetration rate is up from 15% to 21%.

Almost all districts use standard projectors. Only 6% say they have none at all, and 69% say they have substantially implemented them. Large districts report the highest penetration, with 76% reporting substantial implementation. Medium-sized districts report 72% substantial implementation and small districts 65%.

Interactive projectors are not as widely deployed, with 32% of districts reporting that they have substantially implemented them. As with IWBs, large districts lag somewhat, with 27% reporting substantial implementation of interactive projectors versus 33% of both medium-sized and small districts. Large districts, on the other hand, report much higher levels of partial implementation—60%—compared with 42% of medium-sized and 30% of small districts.

More than one-quarter of districts report substantial implementation of non-interactive flat panel displays, and another 45% have partially implemented them. Urban districts are most likely to have implemented them at some level; while the percentage that have substantially implemented them is the same (26%) as the average, 63% report partial implementation, and only 11% of urban districts have not implemented them at all. This compares with 28% of suburban districts, 27% of town districts, and 37% of rural districts that have not implemented flat panel displays.

School districts are not as far along in installing interactive flat panel displays, with only 14% reporting substantial implementation and another 31% reporting partial implementation. In this category, urban and rural districts are the leaders. More than half of urban and rural districts have implemented interactive flat panel displays at some level (55% and 54%, respectively). In contrast, 42% of suburban districts and 36% of town districts have implemented them at some level.

Almost every district surveyed uses document cameras at some level, with only 2% of districts reporting that they do not use them at all. More than half of districts, 55%, report substantial implementation of document cameras, and another 43% report partial implementation. Substantial implementation is highest in large districts, at 65%, followed by 59% in medium-sized districts and 49% in small districts.

Enterprise Management Systems

Enterprise management systems account for 23% of an educational technology market estimated to be more than $8 billion, according to the SIIA 2014 PreK-12 Report.[30] In this year's MDR survey, technology directors were provided a list of six systems—student information systems (SISs), business management systems, data warehouse systems, learning management systems (LMSs), enterprise resource planning (ERP) systems, and data analytics systems—and asked to what degree their district has implemented them on a 5-point scale. (Ratings of 4 and 5 were combined to denote "substantial implementation.")

- Large districts rely more heavily on enterprise management systems than other districts. The majority of large districts report substantial implementation for five of the six enterprise systems, with a 100% rate for SIS and an almost equally impressive 95% rate for business management systems. Although only 30% of large districts use ERP systems, they were still by far the heaviest users.
- SISs, which are used to manage student data—such as attendance, demographics, student records, grades, and transcripts—have always been the most widely used enterprise management systems since MDR began collecting data about them. 2015 is no exception, with 95% of districts reporting substantial implementation.
- This year, business management systems maintain their No. 2 position, with 79% of districts reporting substantial use. (Business management software enables districts to handle administrative functions, such as billing, payments, and payroll.)
- The LMS is the only enterprise system that has shown a clear, one-way pattern of growth over the past five years. In 2011, its substantial implementation rate was 33%, 35% in 2012, 39% in 2013, and 40% in 2014. In 2015, the LMS rate increased to 48%.

- Consistently ranked at the bottom for substantial implementation of enterprise systems are ERP systems (defined as software systems that manage the flow of information across an entire organization, supporting finance, human resources, planning, and other core functions). This year's 17% substantial implementation rate is lower than the 20% of the prior year.

Student Information Systems (SISs)

Of the six enterprise systems on the MDR survey, the SIS is the one most fully implemented, with a rate that does not dip below 90%, regardless of district size, metro status, or region. All of large districts surveyed have fully implemented SIS along with 96% of small districts. Medium districts have the lowest rate of implementation at 92%. The lowest rate of any demographic consideration is in rural districts, which still fully implement SISs at 91%.

Looking at providers of SISs:

- Pearson continues to be the No. 1 provider, though it experienced a 1 percentage point decrease from 2014 to 2015 for a current penetration rate of 32%. The Pearson percentages reflect multiple SIS products: PowerSchool, GradeSpeed, and eSIS Forms. In June 2015, Pearson announced the sale of its premier SIS, PowerSchool, to an equity firm. (Pearson is reportedly planning to divest its remaining SISs so it can get out of the administrative software business and refocus its business on ways to improve student outcomes.)
- Infinite Campus is the No. 2 provider, with an 18% district penetration rate, up from 12% in 2014.
- For the third straight year, the use of a state-provided SIS has grown—from 10% in 2013 to 12% in 2014 and 16% in 2015. Note that the state-provided rates might skew the commercial provider rates a bit as commercial providers often play the same role for the state. For example, Infinite Campus is also the SIS provider for six states.
- Regional SIS preferences are very pronounced for state-provided solutions, which are used by 31% of the districts in the South but by only 17% in the Midwest. The contrast is even starker in the Northeast, at 4%, and the West, at 2%.
- The Northeast also provides a contrast for Infinite Campus, which is used by one-quarter of all districts in the Midwest but only by 9% of districts in the Northeast.
- Skyward, the No. 5 SIS overall, also has small numbers in the Northeast, with 4% penetration. Skyward's penetration rate is double that in the South (8%) and is 12% in the West and 13% in the Midwest.
- Follett is used most heavily in districts in the Northeast and the South, where penetration rates are 17% and 16%, respectively. Rates are significantly smaller in the Midwest, where Follett is used by 4% of districts and in the West with 2%.

Learning Management Systems (LMSs)

When asked to indicate the degree to which an LMS was integrated in their school district, 48% of technology directors report a substantial implementation. This is an increase from the prior year's substantial implementation rate of 40%. Not surprisingly, small districts were the most likely to not have implemented an LMS, with a rate of 17%.

While not everyone defines LMS the same way, it is clear that the LMS market is a complex and competitive landscape. This is particularly apparent when comparing 2015 market leaders with those of the prior year when Edmodo and Moodle (two free-to-teacher platforms) topped the penetration rate charts with 54% and 48%, respectively. This year they both moved down a notch due to Google Classroom, a free LMS provided to schools and districts that use Google Apps for Education (also free).

- Google Classroom made its inaugural appearance at the top of the chart with an astonishing 68% penetration rate. This strong showing is in keeping with the growth of Chromebooks (detailed elsewhere), which are designed to run Google's suite of applications.
- Edmodo, which is more of a social media learning platform than a true LMS, got bumped from its No. 1 ranking and lost a few percentage points from the prior year, down to 51% from 54%. Its recent partnership with Microsoft is geared to stop further slippage and help regain market share. Designed to go head-to-head with Google, Edmodo has announced plans to integrate with Office 365's productivity tools (such as Word and Excel) and OneDrive—the Microsoft cloud storage solution.
- Moodle rounds out the top-three list and like numbers one and two, it is free (though Edmodo is now not as free as it used to be; it has started charging administrators). Moodle is also the only open source solution with significant market penetration, which is an impressive 44%. However, this 2015 percentage represents a steady decline over prior years.
- Rounding out the top five are Pearson and Schoology. Pearson, which offers multiple LMS products, is the only 2014 top-five provider not to lose market share in 2015; its penetration rate actually increased to 28% from 24% the prior year. Schoology's penetration increased to 23% penetration this year, up from 14% in 2014. Schoology is free to teachers, students, and parents but charges administrators for linking Schoology to other systems.

Some overall trends are emerging in the LMS market. First, there seems to be a trend for district-wide use versus single classroom use. Second, the feature sets are growing beyond traditional course management; increasingly, LMSs incorporate student performance analytics, including predictive analytics (as highlighted by Blackboard's acquisition of X-Ray Analytics) that can be used to identify students at risk. The third and perhaps most important major trend is the use of APIs (application program interfaces), which facilitate access to other technology systems.

Data Warehouse and Analytics Systems

This is the first year that the MDR survey separated data warehouse systems from data analytics systems as a survey response option. The two systems are closely linked, as a key purpose of storing data is so it can be analyzed. Often, the data warehouse provider is the same source for analytics, but that is not always the case. And districts with a data warehouse do not always have access to a data analytics system.

Not surprisingly, large districts are the biggest users of data warehouses, with an overall implementation rate of 97% and a substantial implementation rate of 70%. Not only do large districts have larger data sets that essentially require a technology

solution, they also have the larger budgets and staffing that are needed for a successful implementation. Some 19% of small districts and 16% of medium-sized districts make do without a data warehouse.

The rates for substantially implemented data analytics systems trend lower than those for data warehouses. Large districts are by far the most substantial users of data analytics (at 57%), compared with medium-sized districts (36%) and small districts (29%).

When it comes to providers of data analytics systems, the non-commercial solutions—state provider, in-house solution, and regional service agency—are among the top four providers. Pearson, who ranks second overall, is the leader among the commercial players. Equal in penetration rates with regional service agencies in the prior year, Pearson nearly doubled its penetration this year, growing from 13% in 2014 to 23% in 2015. Infinite Campus, the next largest commercial provider, more than doubled its 2014 penetration rate from 7% to 15%. Scantron, too, more than doubled its 2014 penetration rate of 4% to 11%. In fact, virtually all of the 2014 providers "more than doubled" their rates in 2015, although only the aforementioned providers had penetration rates in the double digits.

The major trend in analytics is simply their increased use; districts citing "no use" dropped from 20% in 2014 to 8% in 2015. Faced with a need for better tools to make sense of all the data they collect, districts are finding and leveraging a variety of solutions, including off-the-shelf software or analytic tools embedded in other systems and solutions provided by their state department of education or regional service agency.

Section 3: Abstracts of Key Takeaways

National Education Initiatives

Assessment for learning. It is hard to predict what will happen with the Common Core assessments in 2016. Already a number of states have passed or are considering laws limiting the amount of time students can spend taking standardized tests. How does that balance against continuing requests from teachers for more granular information about students' mastery of required standards? There are tensions here that remain to be resolved.

Most members of the instructional materials industry do not compete directly with PARCC and SBAC, but almost every publisher builds an assessment component into its products. Anything publishers can do to embed assessment into instructional activities so that students do not stop and "take a test" will be well received. There is significant opportunity for technology-based systems that continually track student progress and adjust instruction, returning assessment data without the need to actually administer a test. Publishers that offer support for formative assessments that do not rely on technology should also find a ready audience.

Embrace transparency. The demand for increased student data security and student privacy protection is not going away. Parents will continue to seek assurances that personally identifiable information (PII) about their children is not used inappropriately for marketing or to create permanent records or profiles. Legislative activity at the state

level has increased. And a student privacy bill—the Student Digital Privacy and Parental Rights Act of 2015—has been introduced in the Senate. The House is considering a draft bill that would revise FERPA.

Any organization that collects and stores PII needs to pay careful attention to proposed federal legislation and policy changes, as well as student privacy bills making their way through the various state legislatures. Take advantage of information distributed by national membership organizations—such as the Association of American Publishers (AAP), the Software & Information Industry Association (SIIA), and others—that monitor state legislatures and lobby on behalf of their members. Industry groups like SIIA and AAP also work with legislators in many states to ensure they have the background needed to create informed legislation. In the rapidly evolving privacy policy arena, staying informed and supporting advocacy efforts that represent an organization's business interests will remain important.

Most organizations that serve the school market will have already reviewed and updated their privacy and security policies, ensuring that they are written in easily understood language and are widely available. The key is transparency. Before you are asked, make it very clear that any data you collect will not be used for advertising or marketing purposes or sold to anyone.

Unlike FERPA, which focuses on what schools must do to protect student data privacy (and which most educational materials suppliers understand quite well), the new privacy legislation focuses on the responsibilities of educational service providers to secure student information and ensure that it is kept private. You need to be sure that your legal advisers have carefully reviewed California's Student Online Personal Information Protection Act (SOPIPA), which passed in August 2014. After a careful review of SOPIPA, determine if your company needs to take any further actions in order to be in compliance.

It is important to remember that schools and educators want access to student data in order to make better instructional decisions and personalize each student's learning path. They are, however, also concerned about inappropriate use of that data and worried about their own liabilities. While legislation can establish requirements and define obligations, it does not ensure that educators or service providers will work cooperatively to meet student needs and support innovation. Trust and mutual education are essential to reaching that goal.

Professional Development

Think blended. The *State of the K-12 Market* survey data indicates that online learning has not gained a lot of traction among districts and educators as a PD vehicle. District leaders believe their teachers prefer face-to-face learning. While teachers may be reluctant to give up face-to-face learning engagements, they are quick to criticize activities that waste their time, the kind of one-size-fits-all, mass indoctrination that sometimes characterizes district PD offerings.

Taking a blended approach to PD can address the needs of both teachers and district leaders. The online element of blended PD allows educators to control the timing, location and, most importantly, the pace of the learning experience. The face-to-face

element allows teachers to contextualize what they are learning, sharing, and exploring with colleagues to discover how the new knowledge and skills can be implemented.

Continue to support on-demand and personalized professional learning. Just as a student may need a specific piece of instruction or review to master a concept, teachers often need just a small piece of information to help them better illustrate a concept or employ a new instructional strategy.

As suggested last year, most instructional resource providers have resources on their websites and in their development shops that can be used to support teachers' need for on-demand snippets that update content knowledge, illustrate best practice, or model an instructional strategy. If you have resources that can support teachers in planning an instructional unit, developing a lesson plan, or reflecting on a practice or that support structured collaboration, highlight them on your website. Make it easy for teachers to share what they have found with their colleagues. Make sure that educators know that you are a trusted partner.

Instructional Materials Market

Market trends are generally positive. Total expenditures for all instructional materials for K-12 public schools increased by about $1 billion in 2013-2014, to reach a total of $11.8 billion. The 9% increase in expenditures reported by state departments of education to MDR reverses a five-year decline that began in December 2007. Sales of K-12 instructional books were $3.4 billion, an increase of 10.1%—the biggest gain of any category in the U.S. book publishing industry, according to the Association of American Publishers.

The overall market for software and digital resources in public and non-public schools increased to $8.38 billion in 2012-2013, according to SIIA. Enterprise management systems increased 40%, and testing and assessment was the largest single category, at $2.5 billion.

More districts expect to purchase math instructional materials in the 2015-2016 school year than materials in other subjects, according to curriculum directors. High schools lead in this focus on math materials, with 43% of districts planning to buy high school math materials. By comparison, purchases of math instructional materials for elementary and middle schools are planned by 38% and 36% of districts, respectively.

English language arts materials budgets remain strong, with 35% of districts planning to purchase elementary and middle school English language arts materials and 30% planning to buy these materials for high schools. Fewer than a third of districts plan to purchase science and social studies materials in the 2015-2016 school year. The percentage of districts planning to buy science instructional materials range from 26% for high schools to 29% for elementary schools (27% for middle schools).

Instructional Models and Strategies

Online programs are likely to grow. While six states (Alabama, Arkansas, Florida, Idaho, Michigan, and Virginia) require an online course for high school graduation, the same as last year, more states have passed legislation or rules that encourage, but do not require, taking an online or blended course in order to graduate.

BYOD is here to stay. A fifth (21%) of districts report that all high schools have implemented BYOD programs, although the percentage drops off in the lower grades (10% in elementary). Searching the Internet for research purposes (88%) is the most common activity permitted for students, followed by polling, quizzes, or gathering student feedback/input (84%); collaboration (71%); skills development/practice problems (60%); and accessing online curriculum (56%). Content in these areas needs to work well on a broad range of popular devices and in as many formats as possible.

Universal one-to-one computing is some distance away. One-to-one, like BYOD, aims to put technology instructional devices in the hands of every student. Full one-to-one implementations are reported in high schools by 25% of districts, in middle schools by 23%, and in elementary schools by 7%. Adding the BYOD districts still has these percentages under 50%. So there's plenty of room to grow in the hardware market, without even thinking about replacements.

Competency-based learning is on the rise. A total of 36 states are moving toward competency-based education by establishing proficiency-based diplomas, credit flexibility, or seat-time waivers. Expect to see more competency-based activities for both students and teachers in the near future, which mean that badges or "certifications" of skills may be increasingly important for K-12. Some software vendors might look at the certification processes of Google or Microsoft as examples of what they can do to build a larger base of power users of their products.

Potential remains in STEM areas. Only 13 states and the District of Columbia have adopted the Next Generation Science Standards (NGSS). Beyond this, nearly half (46%) of districts have teams working to align programs with NGSS. Nearly a third of districts (29%) have implemented Project Lead The Way in one or more schools, 28% have created a formal STEM program, and 27% have added or expanded science labs. Despite this activity, there is room for more growth as the nation stays focused on STEM needs, with stress on this area from the White House.

Instructional Content

OER continues to gain traction—slowly. While high-profile efforts like Khan Academy tend to get all the glory, relatively more quiet state-supported initiatives, such as EngageNY and the K-12 OER Collaborative, are methodically moving forward. Publishers' digital platforms are extending support for such "free" instructional content, and an ecosystem of service providers to sort-and-select appropriate resources is growing around OER. Major uncertainties remain on how extensive OER will become, but for now and in the near-term future, the for-profit instructional materials world needs to play nicely.

Common Core is driving the standards market, but alignment worries persist. Common Core State Standards have proven remarkably resilient to repeal efforts, despite all the shouting: of the 46 states that originally signed on to the standards in English language arts and mathematics, 43 remain onboard for 2015-2016. However, this resilience does not mean educators are satisfied with content "aligned" to CCSS. Misrepresentation of tight Common Core alignment in early CCSS instructional materials undercut the entire category. If you claim your materials are Common Core-aligned, be prepared to prove it.

Digital has upset the balance of (publisher) power. The continued shift from printed to digital materials has enabled new instructional content business strategies, such as freemiums, and brought in new players from technology start-ups to the classroom teachers themselves. The more modular nature of many digital resources continues to soften the definition of what is "basal/core" and what is "supplemental" since, as a practical matter, materials designed for one purpose can now more easily be used for the other. At the same time, schools are still struggling with the difficult issues of device and Internet infrastructure as they introduce and go to deeper implementation of digital instructional materials, so print remains an important classroom component.

Assessment

Common Core assessments are exposing the soft underbelly of online testing infrastructure. While tests produced by the two CCSS assessment consortia were less dominant in 2014-2015 than early consortia membership would have led one to expect, the online nature of the high-stakes PARCC and SBAC assessments have provided a real-world stress test of district online testing capabilities. Failures have occurred on both district and assessment provider sides. Even small glitches can undermine educator, student, and parent trust in online testing, so companies that promote and provide online assessment platforms, services, and products need to be prepared to respond quickly and competently to any problems that arise.

Districts are using digital tools to "roll their own" test prep and assessments—and want help. A large percentage of districts use either their own or state-created test prep materials or use teacher- and district-created assessments. They are not necessarily a lost market opportunity. Instead, they may represent the potential for companies to move from a provide-it-all role to a more strategic supporting role at various stages in the process.

Assessment needs, and as a result providers, vary by grade level. No one assessment provider overshadows all others at every grade level; the mix of which providers are popular changes at the elementary, middle, and high school levels as student and teacher needs change. That reality is likely to remain true for some time to come.

Common Core consortia assessments are in greater danger than Common Core Standards. Assessments from the two Common Core assessment consortia—SBAC and PARCC—were used for high-stakes student testing in mathematics and English language arts/literacy for the first time in 2014-2015. But the consortia's membership

continues to shrink. As a result, any company creating assessments or test prep tied to Common Core might be well served to look more broadly to a superset of "college- and career-ready" standards and assessments, no matter what the standards are eventually called in an individual state.

Online and Blended Learning

Students now have access to a full range of online options, from traditional courses that blend off- and online elements together to full-time, fully online programs. This means that full-time virtual schools now exist at one end of a large spectrum and have taken their place alongside a large variety of online options.

State officials have been hitting the "pause" button on full-time programs, holding funding at current levels. This slowdown may reflect a general recognition that full-time online programs make sense for some students, but they are unlikely to be the right solution for most students.

The majority of districts now offer online course options, with 68% of them either adding to their online course offerings or holding the number of courses they offer steady. What's more, 59% of districts that offer some form of online learning now say that blended learning is the primary model they use. In parallel with the movement of digital materials into classrooms, it is no surprise that educators are choosing more often to blend self-paced online programs together with a mix of traditional teacher-controlled approaches.

Technology Funding and Expenditures

Technology funding is improving but has not fully regained ground lost in the recession. The majority of state governors have asked for increases in K-12 funding, though these requests have often been quite modest increases. Reviewing state education budgets for fiscal 2015, the Center on Budget and Policy Priorities determined that at least 30 states saw decreases in per-pupil inflation-adjusted funding since 2008. The outlook for district technology budgets in the 2015-2016 school year continues the improvement seen the prior year, which ended the relative status quo of the previous three "recession" years. Compared only with last year, however, the results are mixed.

Districts plan to purchase a wide variety of instructional technology devices. More than half of school districts have budgeted to purchase each of the classroom instructional technology devices in the study with the exception of interactive flat panel displays, which are in the budgets of 45% of districts. Digital content providers should check to see that their materials display well on the variety of devices being used, which are increasingly becoming a part of standard classroom equipment. Tablets will be purchased by 87% of school districts in 2015-2016. Laptops (non-Chromebooks) are a close second, with 86% of districts planning purchases. Next are desktop computers (83% of districts) and Chromebooks (77% of districts).

More than a third (36%) of district tech directors are the final decision-makers regarding management software. The next most common resource for which tech directors are the final decision-makers is technology-related professional development, for which 28% have this role. After that come apps for the classroom (23%), digital/online curriculum or content (21%), and digital/online assessments (19%). Remember to include the technology director in your sales and marketing outreach even for products such as curriculum and assessments, which increasingly are digital and must function well in district technology environments.

Classroom Technologies

Front-of-the-classroom technology is becoming part of a larger ecosystem. IWBs and other large-screen hardware, which years ago typically stood alone, now often connect to student devices. In a networked environment, the IWB or interactive flat panel display at the front of the room can serve as the central hub of the ecosystem. As a result, one-to-one computing can make IWBs, interactive flat panel displays, and other one-per-classroom technologies even *more* valuable than they were before.

As with other technologies, the software often drives the hardware sale. Each of the major IWB producers has a software format that it has attempted to place at the heart of its hardware ecosystem. For SMART, it is the Notebook format, which works on SMART's IWBs, interactive flat panel displays, and document cameras. For Mimio, it is MimioStudio classroom software, which works across a similar range of devices. Promethean, for its part, not only promotes its ActivInspire software across devices but also surrounds its products with Promethean Planet.

Subtle shifts are occurring on the hardware front. Penetration of IWBs is flattening and the non-interactive flat panel display appears to be on the decline. Interactive flat panel displays and interactive projectors, while substantially implemented in less than one-third of districts, seem to be on the upswing.

The connection to student devices will become increasingly important. Promethean's ClassFlow, for example, represents an effort to create a different *kind* of ecosystem—one in which the front-of-the-classroom device becomes less dominant in relation to the student devices with which it is connected. In this kind of ecosystem, IWBs and other large display devices maintain their importance not because they are the sole focus of students' eyeballs but because they provide an important layer of connective tissue within the networked environment.

Enterprise Management Systems

Growth. The market for enterprise management and school operation systems is experiencing a period of significant growth. A key driver is the pressure districts are under to improve and document student outcomes and teacher performance. Key enablers are the equipment and infrastructure upgrades resulting from Common Core online assessment readiness and one-to-one implementation efforts. The increased bandwidth and system upgrades implemented to address those initiatives have had the side benefit of creating an environment that supports the growth of cloud-based administrative systems.

Convergence. The lines are blurring between systems. Data warehouses are integrated into SISs. SISs are comingling with LMSs, and data analytics are being incorporated into all of them. Enterprise systems now incorporate many similar features, such as communication tools, dashboards, and the mobile features that cloud offerings afford. Of the group, LMSs are emerging as the über system.

Interoperability. Districts want easy, real-time access to their data. They need affordable tools that will make disparate systems interoperate. They want new systems designed to interoperate with other systems—including systems developed by competitors. To ensure this is done, districts are writing interoperability and standards-based design requirements into their RFPs.

Analytics. Linking various data points can uncover relational insights not achieved in another way. This is the goal of basic data analysis—discover patterns and determine if they are meaningful. Ninety-two percent of districts use data analytics systems to make sense of their huge and growing amounts of data. Beyond the use of analytics in LMSs for personalized learning, analytics are used to evaluate teacher and school effectiveness, reduce dropout risk, and optimize financial investments. Districts are looking for analytic systems that will translate all that data they collect across the enterprise into truly actionable data.

Big Data. Big Data is one of the big takeaways. Tied to both analytics and interoperability, it is also tied to the cheap data storage, increased computer memory, faster processing times, and big bandwidth that are now available. If there is not pushback due to student data privacy concerns, those developments will really open the floodgates for data that can be leveraged for education.

Google. Perhaps the most unexpected result from the enterprise management system portion of the MDR survey was the entrance of Google into the LMS market at the top of the rankings with a 68% penetration rate. Launched just last year, that is one heck of a debut even for a free product. Of course, Google Classroom is not Google's first foray into K-12; Google Play for Education, Google Apps for Education, and Google's Chromebooks paved the way. Google is a provider that does not need to profit from education to be a successful company, so to the providers that do—beware!

The Public. Parents, government officials, and the general press increasingly view educational technology providers with suspicion. The tone is frequently hostile. There is an undercurrent of sentiment that education providers should not "profit off of students." Since this attitude is not expressed toward providers that serve other aspects of the education market, such as signage companies, furniture companies, food services, school supply companies, or plumbers, the education industry has a unique problem. The public's concerns about the use of student data are not totally unfounded and tie into society's general discourse about the potential perils of data usage. How educational technology providers engage in that discourse will play a key role in the acceptance and purchase of their products and services. The biggest challenge for enterprise management system providers actually has little to do with technology.

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