Digital Connections Partnership Schools Grant: Strategic Plan

A competitive, matching state grant program to fund capital projects that provide high-speed broadband and/or wireless Internet connectivity to Massachusetts public schools.

Chapter 257 of the Acts of 2014 (Section 2B, line item 1599-7062)

June 2015
This document was prepared by the
Massachusetts Department of Elementary and Secondary Education
Mitchell D. Chester, Ed.D.
Commissioner

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June 2015

Dear Governor Baker, Secretary Lepore, and Members of the General Court:

We are pleased to submit this strategic plan, pursuant to Chapter 257 of the Acts of 2014 (Section 2B, line item 1599-7062), concerning the implementation of a competitive, matching state grant program to bridge the digital divide that exists in some schools across the Commonwealth and strengthen twenty-first century teaching and learning:

“...Provided further, that no grants shall be awarded until the executive office of education and the department, in consultation with the Massachusetts office of information technology, develops a detailed strategic plan to ensure that the program maximizes taxpayer value, student access to information technology and information technology preparedness; provided further, that the department shall submit the plan to the governor, the secretary of administration and finance and the clerks of the senate and the house of representatives on or before March 1, 2015...”

While Massachusetts is second to none when it comes to academic achievement, many of our schools are not yet up to the task of preparing students for twenty-first century work and life. Preparing our schools to administer online assessments was an important goal for this program, but not the primary driver; rather, the Digital Connections Partnership Schools Grant program is about rethinking the structure and delivery of learning, building a more student-centered educational system, and creating the next generation of K–12 learning environments.

To support our schools in achieving this vision, we have crafted a plan that streamlines the delivery of technology to communities, significantly reduces administrative burden and overhead at the local level, and makes efficient use of multiple funding streams.

Administration of the grant program represents an unprecedented level of collaboration between education, policy, and technology leaders from across state government. For example, the Massachusetts Office of Information Technology (MassIT) aims to leverage the capacity and buying power of the Commonwealth to help cities and towns upgrade their technology infrastructure: MassIT will act as a single purchasing agent, front the cost of all projects, and expedite the flow of hundreds of thousands of dollars in federal E-rate elementary and secondary education technology discounts back to schools.

Of the $38 million in state bond appropriated by the legislature, $5 million has been authorized for use in the first phase of the program by the Governor’s Office for projects in FY2015-16.

The response we received to the initial request for proposals was very strong, despite a short application timeframe, and is a persuasive indicator of the willingness of cities and towns to commit local matching funds. At present, the demand surpasses our ability to match this commitment with state funds. The table below highlights the level of demand demonstrated by schools in this initial application round.

 Mitchell D. Chester, Ed.D.
 Commissioner
• The $5 million authorized for use in the first phase of the program lets us fund projects that will positively impact 24,981 students and 1,865 educators in 47 schools. Communities are prepared to match this investment with approximately $3.59 million from local, private, and federal funding streams.
• To meet the full initial demand, an additional $11.79 million in state bond funds would be required. That level of funding would benefit an additional 108,358 students and 7,835 educators in 200 schools, and leverage approximately $13.77 million in matching funds.
• It is worth noting that we expect additional demand to be demonstrated in future application rounds. A number of schools that did not apply in Round 1 – for various reasons – have indicated significant interest and informed us of their intent to apply in a future round.

<table>
<thead>
<tr>
<th>Round 1 (Finalists) – Approved for Funding</th>
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<tr>
<td>Districts</td>
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<td>Urban</td>
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<td><strong>Subtotal</strong></td>
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<tr>
<th>Round 1 (Semifinalists and Candidates) – Not Approved for Funding</th>
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<tr>
<td>Districts</td>
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<tr>
<td>-----------</td>
</tr>
<tr>
<td>Urban</td>
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<td>Suburban</td>
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<tr>
<td>Rural</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td><strong>Totals</strong></td>
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</table>

*NOTE: State figures are based on estimated infrastructure costs.

This plan is guided by four areas of strategic focus, *interagency collaboration in support of municipalities, cost-effectiveness, efficiencies of scale, and local capacity and sustainability*, and these goals:

1. Maximize taxpayer value, student access to information technology and information technology preparedness.
2. Provide student access to individualized and rigorous digital learning experiences.
3. Ensure that educators and administrators have the knowledge and skills to implement digital learning curricula.
4. Maximize access to broadband and strengthen teaching and learning across the state in keeping with twenty-first century standards.

Recently the Federal Communications Commission increased the annual E-rate program cap to $3.9 billion. The increased cap will allow the E-rate program to meet its target of $1 billion annually in closing
the Wi-Fi gap while transitioning support away from legacy technologies. Consequently, we anticipate continued strong demand in future phases of this program as our cities and towns seek to capitalize on the opportunity to leverage E-rate and other funding streams for digital learning.

If you have questions or would like to discuss this further, feel free to contact us.

Sincerely,

Mitchell D. Chester, Ed.D.
Commissioner of Elementary and Secondary Education

Bill Oates
Commonwealth Chief Information Officer
MassIT
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Program Overview

The purpose of this competitive, matching state grant program is to assist public school districts in improving student instruction and assessment through the use of information technology, including, but not limited to, enhanced information technology infrastructure and increased broadband access.

Priority is given to applications that:

- Maximize taxpayer value, student access to information technology and information technology preparedness;
- Provide student access to individualized and rigorous digital learning experiences;
- Ensure that educators and administrators have the knowledge and skills to develop and implement digital learning curricula; and
- Maximize access to broadband and strengthen teaching and learning across the state in keeping with twenty-first century standards.

All public school districts in the Commonwealth are eligible for funding, provided that:

- Funds are not awarded to school buildings scheduled for decommissioning or razing within 10 years from the completion of the project; and
- Projects occur only on and within publicly-owned real property maintained for the benefit of the school district.¹

A total of $5 million was authorized for use in the first phase of the program: $2 million for suburban communities, $1 million for rural communities, and $2 million for urban communities.² Cities and towns will contribute between 30 and 70 percent on a sliding scale indexed to their local contribution to the Chapter 70 formula. Communities may contribute matching funds from public and/or private sources.

Funds will be expended to implement projects in either the 2015-16 or 2016-17 school years. If additional state bond funds are released, we will fund projects through the 2017-18 school year.

State bond funds may be used to fund capital projects that provide high-speed broadband and/or wireless Internet connectivity for schools. Up to 100 percent of the local contribution (between 30 and 70 percent of the total cost of the project) may fund devices for students and teachers, provided that schools and municipalities have a sound plan for incorporating recurring device costs into the annual operating budget. State funds may not be used retroactively or for devices. Any devices for students purchased or leased by the local match need to meet current specifications for online statewide assessments.

Applicants signed a statement of assurances, provided technical information on the current technology infrastructure of their schools, and responded to a short list of questions that assessed each school’s readiness for digital learning.

The Department received proposals from 247 schools across 98 school districts. This represents approximately 25 percent of the Commonwealth’s school districts and 13 percent of its schools.

¹ Charter schools are eligible to apply as long as the two eligibility criteria above are met.
² Funds apportioned in proportion to Chapter 70 foundation enrollment of each community type.
Proposals were reviewed by teams of staff members from the Department and MassIT. Each team was assigned a group of suburban, rural, or urban applicants to review. To ensure consistency in scoring, staff from the Department’s Office of Digital Learning reviewed all of the proposals within each community type. The proposals were rank-ordered by score within each community type:

1. **Finalists** earned the highest scores. These proposals can be funded through the $5 million currently authorized for the program.
2. **Semifinalists** are proposals likely to be recommended for funding, pending the release of additional state bond funds. Some of these proposals require moderate revision.
3. **Candidates** are proposals that require substantial revision before they can be recommended for funding. This category also includes proposals that did not clearly indicate a commitment to implement a one-to-one student to device initiative in at least one subject or grade in each school.

<table>
<thead>
<tr>
<th>Schools by Community Type and Award Status</th>
<th>Finalists</th>
<th>Semifinalists</th>
<th>Candidates</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>18</td>
<td>--</td>
<td>61</td>
<td>79</td>
</tr>
<tr>
<td>Suburban</td>
<td>16</td>
<td>28</td>
<td>50</td>
<td>94</td>
</tr>
<tr>
<td>Rural</td>
<td>13</td>
<td>17</td>
<td>44</td>
<td>74</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>47</strong></td>
<td><strong>45</strong></td>
<td><strong>155</strong></td>
<td><strong>247</strong></td>
</tr>
</tbody>
</table>

Additional information is available online:

- Interactive map that shows details regarding each school’s application and local matching funds: [http://gisprpxy.itd.state.ma.us/AGOL/DCPS/dcps_responsive.html](http://gisprpxy.itd.state.ma.us/AGOL/DCPS/dcps_responsive.html).

**Vision**

The vision of the Digital Connections Partnership Schools Grant is to ensure sufficient baseline broadband capacity throughout all public schools in the Commonwealth by 2018 and to dramatically expand access to an array of digital content, tools, and applications that effectively use technology to strengthen teaching and learning.

**Mission**

The mission of the program is to bridge the digital divide that exists in some schools across the Commonwealth and strengthen twenty-first century teaching and learning.

**Core Principles**

On September 16, 2014 an advisory committee with broad representation from state government, local school districts, and professional associations convened at the State House to establish these principles:

- Funds shall be available to all types of communities: urban, suburban, and rural.
- All communities shall have the opportunity to apply for funding.
• More funds shall be made available to communities with fewer resources than other communities.
• Applicants shall be incented to propose projects in areas that have limited or no broadband access or that are part of larger, integrated plans to connect community anchor institutions such as municipal buildings, libraries, or community centers to broadband.
• State agencies shall alleviate the administrative burden at the local level and promote cost savings for communities.
• Communities shall propose projects that meet their local context and needs.

Strategic Areas of Focus

The plan is guided by four areas of strategic focus:
• Cost-effectiveness: The program will make efficient use of multiple funding streams and the state will leverage its buying power to make technology more affordable to communities.
• Interagency collaboration in support of municipalities: Agencies across state government will leverage their specific areas of expertise to support communities.
• Efficiencies of scale: The state will act as an aggregator for infrastructure upgrades and serve as the lead consortium applicant in obtaining federal E-rate technology discounts.
• Local capacity and sustainability: Safeguards and incentives are intended to help promote the efficient and effective management of technology resources over the long term.

Strategic Goals

The program’s strategic goals derive from the legislation:
1. Maximize taxpayer value, student access to information technology and information technology preparedness.
2. Provide student access to individualized and rigorous digital learning experiences.
3. Ensure that educators and administrators have the knowledge and skills to implement digital learning curricula.
4. Maximize access to broadband and strengthen teaching and learning across the state in keeping with twenty-first century standards.

Action Plans

The plans on the following pages identify strategies, responsible state agencies, action steps, and timelines through the 2016-17 school year. If additional state bonds are released, MassIT and the Department are prepared to run a second competition through the 2017-18 school year.
<table>
<thead>
<tr>
<th>Strategies</th>
<th>Responsible Agency</th>
<th>Actions</th>
<th>Timeline</th>
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</table>
| Develop a transparent funding structure that channels more matching state dollars to communities with fewer resources than other communities. | ESE | • Classify communities as urban, suburban, or rural using data provided by the Department of Elementary and Secondary Education’s School Finance Office.  
• Determine each community’s contribution (local effort) to the Chapter 70 program and rank order them based on their local effort contribution by community type.  
• Allocate $5 million in matching state funds to each community type proportionate to aggregate Chapter 70 foundation enrollment: urban (40 percent), suburban (40 percent), and rural (20 percent).  
• Apply a sliding scale for the local match requirement in proportion to each community’s local effort contribution: 70, 60, 50, 40, and 30 percent, respectively. | 9/2014 |
| | ESE, MassIT | • Provide technical assistance to communities to help them determine the local match, and provide transparent information detailing the underlying calculations. | 10/2014 |
| Develop incentives for communities to expand the reach of technology to benefit community anchor institutions, businesses, and households. | ESE | • Use data from the Massachusetts Broadband Institute (MBI) to identify communities in the MBI service area and determine whether they are receiving service from the network.  
• Use Partnership for Assessment of Readiness for College and Careers (PARCC) assessment readiness data to flag schools with potentially insufficient technology infrastructure.  
• Award extra points to applicants that propose to fund projects that are part of integrated plans impacting other sectors of the community, such as plans to connect community anchor institutions to broadband (e.g., public libraries, town buildings, community centers, etc.) or plans to improve roads or highways.  
• Award extra points to applicants from communities where:  
  o The majority of the public buildings do not have access to high speed broadband.  
  o High speed broadband is not available to the majority of households.  
  o High speed broadband is not affordable to the majority of households. | 11/2014 |

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4 Notwithstanding the requirement that state bond funds under this program fund projects only on and within publicly-owned real property maintained for the benefit of the school district.
### Strategic Goal 1: Maximize taxpayer value, student access to information technology and information technology preparedness

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| Develop incentives that help communities build the capacity to effectively manage both the technical and educational facets of their technology. | ESE, LEA | • Award extra points to applicants whose chief technology administrator possesses or will pursue national Certified Educational Technology Leader (CETL) certification.  
• Chief technology administrators earn this certification no later than June 30, 2017.  
• Perform due diligence checks. | 11/2014-6/2017 |
| Leverage state resources and capacity to expedite the flow of hundreds of thousands of dollars in federal E-rate technology discounts to communities, and create safeguards that help ensure stable funding streams for school technology. | MassIT | • Apply to the Universal Services Administrative Company (USAC)\(^5\) to become a lead applicant for E-rate technology discounts on behalf of a statewide consortium.  
• Retain an account manager to oversee the fiscal aspects of the program. The individual will develop internal controls to track and report the allocation and use of all funding.  
• Retain a consultant with demonstrated experience nationally in maximizing federal E-rate reimbursements for technology. | 9/2014, 2/2015 |
| | ESE, MassIT | • Promote the availability of federal E-rate technology discounts to schools and libraries in the Commonwealth through varied media, including:  
  o MassIT and ESE Twitter accounts.  
  o Commissioner’s Update.  
  o Links to federal E-rate resources from the ESE website.  
| | LEAs | • School and local officials assure the Commonwealth that federal E-rate reimbursement dollars will be reserved for school technology needs and not diverted into general funds.  
• School and local officials establish a line item in the operating budget for recurring technology costs and identify one or more associated funding streams. | 3-4/2015 |
| | MassIT | • Apply for E-rate reimbursements for technology infrastructure from USAC on behalf of all applicants. | 4/2015 |

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\(^5\) USAC is a nonprofit organization that administers the E-rate program under FCC oversight.  
\(^6\) Senator Markey is a key author of the E-rate program.
## Strategic Goal 1: Maximize taxpayer value, student access to information technology and information technology preparedness

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Responsible Agency&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Actions</th>
<th>Timeline</th>
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<tr>
<td></td>
<td>MassIT</td>
<td>• Disburse E-rate technology reimbursements to communities. Communities may permit MassIT to withhold funding to cover the local match.</td>
<td>9/2015</td>
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## Strategic Goal 2: Provide student access to individualized and rigorous digital learning experiences

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<th>Strategies</th>
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<th>Actions</th>
<th>Timeline</th>
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|            | ESE, LEA           | • Applicants describe the specific instructional and learning challenges facing each school that a shift toward an increased use of digital learning will help them solve.  
• Applicants describe how the program will integrate online and face-to-face learning.  
• Each applicant deploys a one-to-one (one device per student) initiative in funded schools based on current capacity and educational opportunities presented by technology:  
  o Option 1: All grades and subjects in the school.  
  o Option 2: A single grade or specific grades in the school.  
  o Option 3: A single subject or specific subjects in the school. | 9/2015 |
|            | ESE, MassIT        | • Award extra points to applicants that leverage statewide contracts to procure professional development, network management services, and twenty-first century tools (e.g., devices for students and teachers and assistive technology for students with disabilities) to support students’ attainment of the Massachusetts Curriculum Frameworks.<sup>7</sup> | 11/2014 |
|            | ESE                | • Condition funding on the provision of assistive technologies and accessible instructional materials based on the needs of the student population.  
• Provide guidance, resources, and links for schools to develop flexible curricula that meet the needs of all students, offer multiple options for students to access information, help demonstrate what they know, and get students excited about learning. | 11/2014 |

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<sup>7</sup> All communities may purchase products and services from these statewide contracts.
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<td>opportunities, personalize their instruction, and allow them to participate in school activities alongside their peers.</td>
<td>• Offer two (2) in-person summer institutes in assistive technology for educators.</td>
<td></td>
<td>7/2015</td>
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| Districts plan to ensure the appropriate use of technology by students and staff members, including protection of student privacy. | • Condition funding on the development, maintenance, and dissemination of current policies that comply with the following laws and regulations:  
  o Public notice of directory information disclosures and opt-out process.  
  o Data security practices and policies and data governance policies.  
  o Digital Copyright Millennium Act (DCMA).  
  o Family Educational Rights and Privacy Act (FERPA) and 603 CMR 23.00 (Massachusetts regulations governing student records).  
  o Children's Online Privacy Protection Act (COPPA).  
  o Children’s Internet Protection Act (CIPA) as amended in the Broadband Data Improvement Act S.1492.  
  • For parents, information on their rights under the Protection of Pupil Rights Act (PPRA) when applicable:  
    o Certify every funded school complies with the Children’s Internet Protection Act (CIPA) as amended in the Broadband Data Improvement Act S.1492.  
    o Expend dollars only for the benefit of the school buildings awarded funding and only for the benefit of educators and students who teach and learn within funded school buildings. | ESE, MassIT | | 11/2014 |
### Strategic Goal 3: Ensure that educators and administrators have the knowledge and skills to implement digital learning curricula.

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<th>Strategies</th>
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<tr>
<td>Districts provide professional development and technical support, and evaluate the return on investment of digital learning initiatives.</td>
<td>ESE</td>
<td>• Leverage existing state contracts for technology devices to create incentives and options for districts to purchase bundled solutions consisting of tailored professional development, managed services, and a device lease option at a “per seat” cost, inclusive. The professional development will be: ongoing and feature coaching, modeling, observation and feedback; connected to both the content and context teachers teach; aligned to the school’s instructional priorities; tied to measurable changes in student and adult behaviors; and clearly distinguishable from technical training.&lt;br&gt;• Districts have responsive, technical support systems for providing timely assistance to educators and students that minimizes downtime.</td>
<td>Upon initiation of contracts through 6/2017</td>
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<td></td>
<td>ESE</td>
<td>• Vendors provide professional development to school and district leaders in evaluating the efficacy and impact of their digital learning initiative, including establishing a baseline level of adult performance and student achievement against which to measure educator development and student performance and growth.</td>
<td>Upon initiation of contracts through 6/2017</td>
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<td>ESE, MassIT</td>
<td>• MassIT and the Department monitor the efficacy and impact of the initiative using measures that include but may not be limited to:&lt;br&gt;  o Student outcomes, including graduation rates, student engagement, and development of key twenty-first century learning skills.&lt;br&gt;  o Instructional practice, including use of technology for both planning and instruction, personalization of student learning experiences, technology-enhanced modes of assessment, and flexibility in the time, space, and place in which student learning occurs.&lt;br&gt;  o Leadership, including effective communication between principals and educators in supporting professional learning.&lt;br&gt;  o Resource allocation and use, including human capital and changing roles as well as budgeting practices that provide sustainable funding streams for technology.&lt;br&gt;  o Implementation indicators, including leveraging of open education resources; enhanced technology infrastructure and Internet connectivity; and districts taking advantage of opportunities for shared procurement of devices, digital content and support that optimize choice and purchasing power.</td>
<td>3/2015-6/2017</td>
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### Strategic Goal 4: Maximize access to broadband and strengthen teaching and learning across the state in keeping with twenty-first century standards.

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| Determine the technology infrastructure needs of schools and districts that applied for funding through the grant program. | MassIT, ESE | • Build a database for extracting school-level infrastructure data from Excel templates. Data elements include:  
  - The school’s external Internet connection.  
  - The school’s connection to other school buildings.  
  - The names of the vendor(s) that provide Internet service to the school, and the connection speeds provided by each vendor.  
  - Internal wiring.  
  - The number and capacity of classrooms, libraries, computer labs, and common areas in the school, and the number of access points in each of these spaces.  
  - The number of teacher and student devices in the school and the number of devices the district intends to purchase with local matching funds.  
  • Use information from the database to:  
    - Estimate the total cost of upgrading the school’s infrastructure to twenty-first century teaching and learning standards.  
    - Make funding decisions.  
  • Compare estimated costs to actual costs, and make corresponding adjustments to the database logic to more accurately forecast future costs. | 9/2014  
12/2014  
4/2015 |
Strategic Goal 4: Maximize access to broadband and strengthen teaching and learning across the state in keeping with twenty-first century standards.

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<th>Strategies</th>
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| Collect data on statewide technology infrastructure needs and digital learning initiatives. | MassIT, ESE | • Build or buy an enterprise-level web-based tool that will allow an objective assessment of the current IT infrastructure of its public schools to evaluate their current “point in time” capabilities for digital learning. The tool will be aligned to a nationally-recognized set of guidelines for digital learning, such as the U.S. Department of Education’s Future Ready Framework.  
  o Evaluate build-vs-buy value proposition in light of competing priorities, the usefulness of the data to state and local actors, and the questions to be answered with the data:  
    ▪ Districts should have the ability to use the data to aid in asset tracking; to perform comparative analyses within and between schools in the district, and between districts, especially similar districts; and to inform budget and planning decisions.  
    ▪ Districts should have the ability to perform a gap analysis between the current and desired state in the district and its schools with respect to developing the human and technological capacity needed to personalize learning using digital tools.  
    ▪ State agencies should have the ability to report on technology trends in the Commonwealth and provide accurate data to other state agencies, the federal government, and the public. Reports should be customizable for each school, district, region, and for the Commonwealth.  
    ▪ The data collection requirement shall supplant the requirement for districts to annually submit local technology plans to the Department, and therefore be cost-and resource-neutral.  
  o Assess training needs at the local level to submit valid and reliable data, and design a corresponding training program.  
    ▪ The program will leverage personnel in intermediate organizations that already provide technical assistance to school districts, such as Educational Collaboratives and District and School Assistance Centers.  
  o Implement the most cost-effective solution. | 4/2015-10/2015 |
| | | | 9-10/2015 |