



Pennsylvania Technology Inventory (PATI)



2010-2011



Southern Lehigh SD

2010|2011 METIRI GROUP
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Table of Contents

PATI & SAS Introduction.....	1
The Elements of Pennsylvania’s SAS	1
Clear Standards.....	1
Fair Assessments	1
Curriculum Framework.....	2
Instruction	2
Materials and Resources	2
Interventions	2
The PATI-SAS Framework.....	2
Scoring.....	2
LEAs Such As Yours.....	2
Executive Summary	3
Element 1: 21 st Century Standards.....	5
Element 2: 21 st Century Assessments.....	7
Element 3: 21 st Century Curriculum.....	10
Element 4: 21 st Century Instruction	12
Element 5: Digital Age Materials and Resources.....	14
Element 6: 21 st Century Interventions.....	16
LEAs Such As Yours.....	19
PATI Technology Phase Report.....	25
Connectivity, Networking and Wide Area Networks (WANs).....	26
Technology Availability & Usage	29
Appendix.....	32
Glossary.....	36

Overview of Respondents

This report contains information from Southern Lehigh SD, which includes responses from the following groups:

Respondents	
Teachers	88
School Administrators	5
School Technology Coordinators	6
LEA Technology Director	1

Southern Lehigh School District is part of **Carbon-Lehigh IU 21** and has been classified as **Suburban** for purposes of this report.

PATI - SAS Introduction

The Pennsylvania Technology Inventory (PATI) is conducted to collect data from all schools and LEAs in Pennsylvania. Information collected includes data on technology access, infrastructure, and data systems, as well as the use of technology in teaching and learning. The intent is to meet federal reporting requirements on LEA and school technology, and to inform policymakers on the progress Pennsylvania is making in using technology to advance teaching, learning, leadership, and administration.

Data gathered from these surveys is used to provide an annual snapshot of technology in areas such as equipment in schools, infrastructure and connectivity, and the impact of this technology on teaching, learning, and administrative practices.

The PATI survey process is completed in two phases. The Technology Phase centers on the collection of data regarding the current state of school and LEA technology resources and infrastructure across the Commonwealth. The Instructional Phase includes surveys of teachers and school administrators in the Commonwealth. The teacher and administrator surveys are designed to document the impact of technology on the teaching and learning practices in each school, as well as the administrative efficiencies that those technologies enable. Note that the teacher and administrator surveys are based on a framework for understanding the conditions that must be established if technology is to be used effectively in LEAs, schools, and classrooms.

This year, the Pennsylvania Department of Education revised the instructional aspects of PATI to align to the Pennsylvania Standards Aligned System (SAS). The result of this revision is an Instructional Technology report that provides the Pennsylvania Department of Education, the Intermediate Units, and the LEAs with customized findings on how technology is being used to advance the learning standards and associated LEA, school, and classroom practices outlined in SAS. This report outlines those findings and is intended to provide a rich set of data that will guide the technology planning processes and document the future success of 21st Century learning initiatives.

The Elements of Pennsylvania's SAS

The Pennsylvania Standards Aligned System (SAS) is a collaborative product of research and good practice that identifies six distinct elements, which, if utilized together, will provide schools and LEAs a common framework for continuous school and LEA enhancement and improvement. Much research has been conducted as to what makes a great school. There are many intangible components; however, research supports the notion that great schools and school systems tend to have six common elements that ensure Student Achievement: Clear Standards, Fair Assessments, Curriculum Framework, Instruction, Materials and Resources, and Interventions.

Clear Standards

Pennsylvania Standards describe what students should know and be able to do, which increase in complexity and sophistication as students progress through school. Assessment Anchors clarify the Standards that are assessed on the Pennsylvania System of School Assessment (PSSA). Assessment anchors can be used by educators to help prepare students for the PSSA. The metaphor of an anchor signals that the Assessment Anchors clarify the relationship between state Standards and the Pennsylvania assessment system. Assessment Anchors are further elaborated with Eligible Content. Eligible Content identifies how deeply an Anchor should be covered and specifies the range of the content to best prepare students for the PSSA. Not all of the Eligible Content is assessed on the PSSA, but it shows the range of knowledge from which the test was designed.

Fair Assessments

Fair Assessment is a process used by teachers and students before, during, and after instruction to provide feedback and adjust ongoing teaching and learning to improve student achievement. In Pennsylvania the four types of assessment are summative, formative, benchmark, and diagnostic.

Curriculum Framework

The Curriculum Framework specifies what is to be taught for each subject in the curriculum. In Pennsylvania, Curriculum Frameworks include Big Ideas, Concepts, Competencies, Essential Questions, Vocabulary, and Essential Questions aligned to Standards, Assessment Anchors, and, where appropriate, Eligible Content .

Instruction

Aligned Instruction comprises the following activities:

- Teaching topics aligned with the Standards;
- Ensuring the right level of challenge;
- Focusing teaching based on the learning needs of each student; and
- Implementing instructional strategies to increase student achievement.

Materials and Resources

Materials and Resources includes Voluntary Model Curriculum (VMC) incorporating learning progressions, units, lesson plans, and content resources aligned to the Pennsylvania Standards in curriculum frameworks for the four major content areas (mathematics, science, social studies, reading-writing-speaking-listening). Learning progressions span grades K-12 and include what all students should know and be able to do as a result of successfully moving through grades K-8 and by taking specific courses in grades 9-12.

Interventions

Interventions ensure students are provided with supports they need to meet/exceed grade level Standards. A comprehensive system of Interventions involves a graduated set of safety nets aligned to specific student needs and Standards.

The above information on Pennsylvania's SAS is from <http://www.pdesas.org/>

The PATI-SAS Framework

The PATI-SAS report provides schools with insights into the elements required to understand how 21st Century Learning is being put into action. In this report, the six elements of SAS that represent the innovative practice within the Pennsylvania SAS framework have been expanded to include progress with 21st Century learning. The six elements for the PATI-SAS framework extend the SAS elements to 21st Century Learning and Technology Literacy.

Scoring

The PATI-SAS reports calculate scores for each element of the SAS framework. As teachers and administrators completed the survey, they answered several questions. All of the questions that were asked were coded to a specific SAS element. As you review the following report you will notice that frequency data for every question asked is no longer reported, instead you will see an aggregate score that represents your LEA's current level of progress along three possible levels: Basic, Emergent, and Proficient. Your current level of progress is calculated based on a scoring strategy whereby each question is normalized to an 8-point scale and weighted. Cumulative scores are calculated across elements. In addition to your LEA's current level of progress you will also be presented with frequency data for individual questions that are representative of the specific element.

LEAs Such As Yours

After the results for your LEA are discussed for each element, you will find a summary page that is titled LEAs Such As Yours. On this page you will be able to see your LEA's current level identified with a green arrow (as shown) within each element, and LEAs similar to yours by locale. This data is intended to give you an overview of the progress your LEA has made, as compared to your peers. All LEAs were scored using the same scoring strategy, and peer institutions were chosen based on similar demographics. For this section of the report all Charter Schools and Career Technical Centers were reported separately.

0-3	3-6	6-8
	↓	
Basic	Emergent	Proficient

Executive Summary

The following executive summary provides a snapshot of the six SAS elements within the 2010-2011 Pennsylvania Technology Inventory (PATI). The PATI-SAS elements include 21st Century standards, assessments, instruction, curriculum, interventions, and digital age materials and resources.

Each of the six elements is defined in the context of 21st Century learning. Each element is reported out by aggregate score demonstrating your LEA score, and how it compares to similar locales, intermediate unit, and the state. Other areas of focus within this executive summary include the growth of Web 2.0 tools, integration of 21st Century skills, and use of digital technologies for learning/instruction.

This report is based upon responses from LEA Technology Directors, principals, and teachers. LEAs are classified as urban, suburban, town, or rural. Locales are defined by the National Center for Educational Statistics (Office of Management and Budget (2000); Standards for Defining Metropolitan and Micropolitan Statistical Areas; Notice Federal Register (65) No. 249). Southern Lehigh School District has been classified as Suburban.

Figure 1: Aggregate scores by LEA and Locale

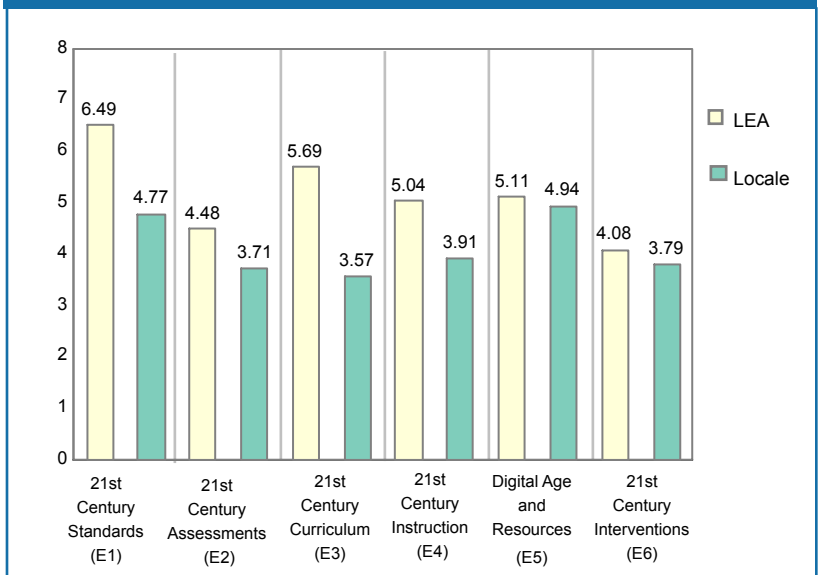
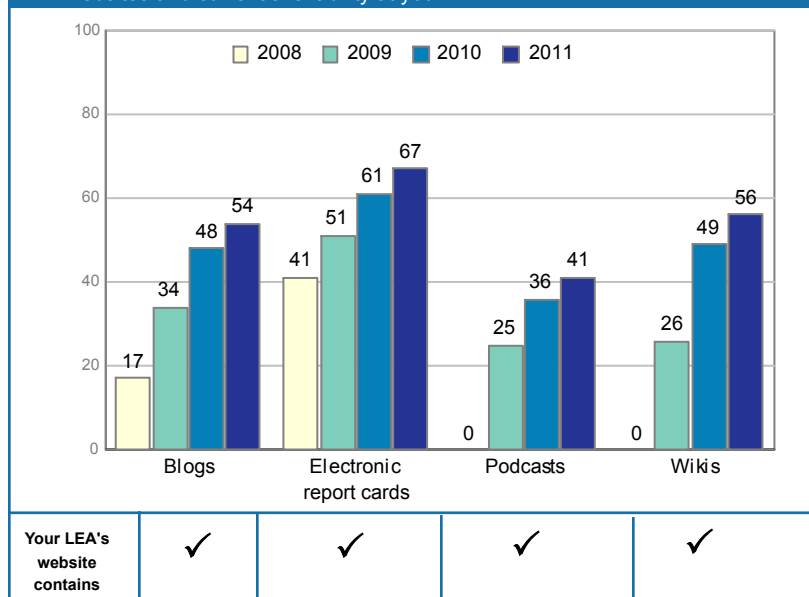


Table 1: Element scores for LEA and State

	E1	E2	E3	E4	E5	E6
IU	4.82	3.63	3.37	3.97	5.74	2.94
State	4.80	3.56	3.46	3.70	4.92	3.46

Figure 2: Trends in Web 2.0 tools available state wide on LEA websites and current availability at your LEA.



Over the past three years, Pennsylvania has seen an explosion of Web 2.0 tools available on LEA websites throughout the state. The availability of blogs has risen by 20% and wikis by over 30% since 2009. LEAs are increasingly adding access to additional communications tools. Some of the tools that are growing in availability include Intranet access, online courses for students, and teachers' professional development, LEA created social networks, twitter feeds, and digital drop boxes.

* Data for podcasts and wikis were not collected in the 2008 PATI.

LEAs are making progress on integrating 21st Century Skills. Factors that influence this progress include the administrator and teacher knowledge base of areas such as collaboration, engagement, critical thinking, and technology for learning. The explicit integration of 21st Century Skills throughout the curriculum, and an articulated scope and sequence for 21st Century Skills also influences the progress of LEAs. Overall, in Southern Lehigh School District, 100% of administrators indicated that there is an articulated scope and sequence for 21st Century Skills. Among the teachers, 58% noted that it was mostly to completely true that 21st Century Skills have been explicitly integrated into their curriculum, while 53% of the teachers rate themselves as skilled in selecting instructional strategies that allow for the simultaneous development of academic skills and 21st Century Skills.

Figure 3: Administrators' rating of how knowledgeable their staff is about:

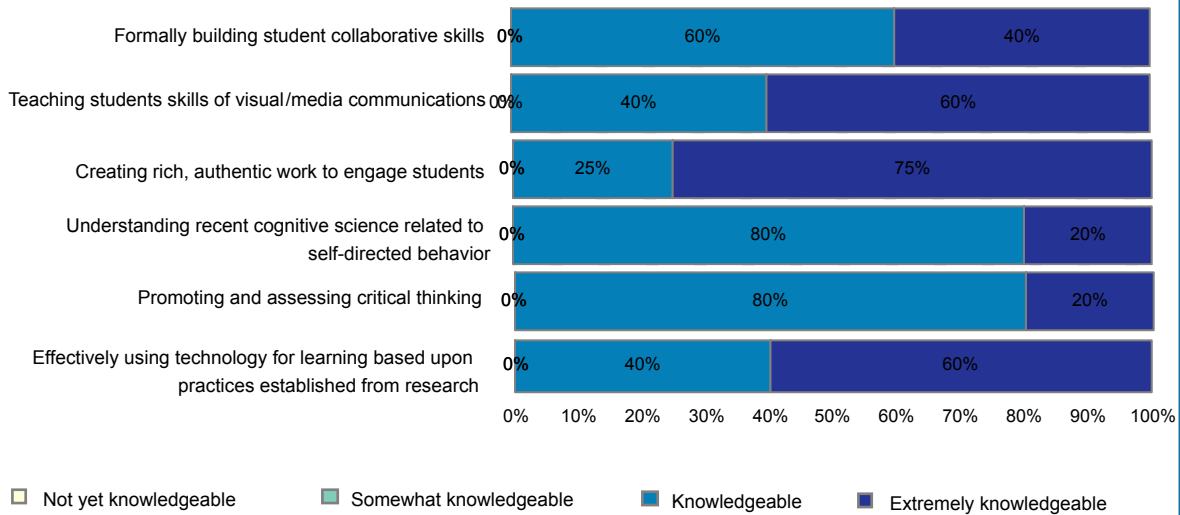
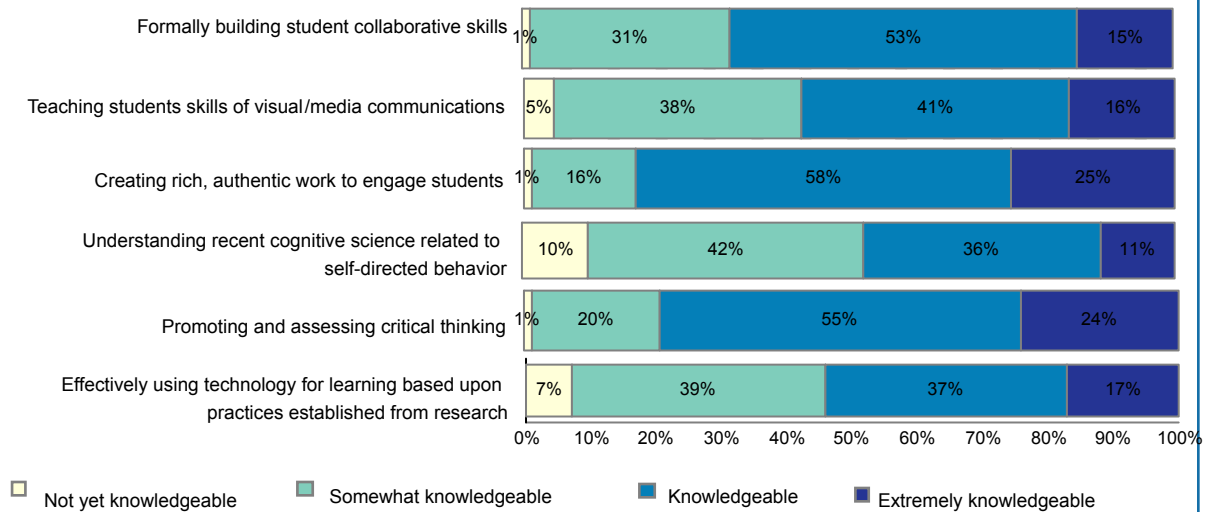


Figure 4: Teachers' ratings of how knowledgeable they are about:



Element 1: 21st Century Standards

Components of the Clear Standards SAS element include what students know and should be able to do, a connection between what is taught and what is tested, and use of Assessment Anchors to clearly identify what students will be assessed on. Within the PATI-SAS framework, this SAS component expands to include 21st Century Standards.

Establishing clear standards sets the targets for which all curriculum, instruction, and assessments are aligned. The components of 21st Century Standards follow, with the indicators and key questions within this element that were addressed.

Standards for 21st Century Skills. Are there standards for 21st Century Skills for all learners that define what it means to be educated in a knowledge-based, global society?

Standards for technology literacy. Are there relevant definitions and standards for technology literacy in place to ensure that all learners will develop the technological proficiency necessary to thrive in a digital world?

Links between 21st Century Skills and technology standards. Have links between 21st Century Skills and technology standards been made? Are those links tied to the academic curriculum to ensure that there is explicit attention to these elements within the academic curriculum?

Is it clear that students will engage in 21st Century Skills such as collaboration and critical thinking, as well as activities that promote technology literacy as part of their academic learning?

Assessment anchors for 21st Century Skills. Do 21st Century Skills have assessment anchors in place for all learners? Has there been an articulation of how 21st Century Skills will be assessed? Do assessment anchors demonstrate continuous attention to developing 21st Century Skills and technology literacy throughout a student's education?

Data from the PATI Instructional Phase indicates that there are generally three levels of progress within responding Pennsylvania schools.

Relevant Components of Technology/21st Century Learning
<p>Element 1 - 21st Century Standards <i>Standards are expanded to include 21st Century Skills including Technology Literacy.</i></p> <ul style="list-style-type: none"> Standards for 21st Century Skills and technology literacy have been adopted. Links between academics, 21st Century Skills, and technology standards have been made explicit. Use of Assessment Anchors is integrated with 21st Century Skills.

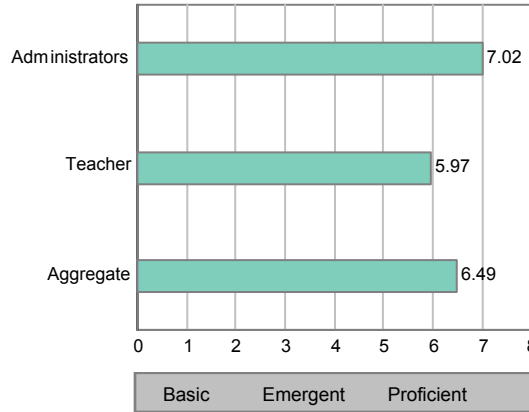
ELEMENT 1: 21ST CENTURY STANDARDS RANGE OF PROGRESS		
BASIC	EMERGENT	PROFICIENT
Standards for 21 st Century Learning have not been adopted, and there is no clear sense of how 21 st Century Skills will be assessed within the academic curriculum.	Standards for 21 st Century Learning have been adopted. There is some sense of how 21 st Century Skills will be assessed within the academic curriculum.	Standards for 21 st Century Learning have been adopted and implemented, and it is clear how 21 st Century Skills will be assessed within the academic curriculum.
No clear definition of student technology literacy is in place.	A clear definition of student technology literacy is in place.	A clear definition of student technology literacy is in place and there is established presence of technology literacy throughout the academic content areas.
The connections between 21 st Century Skills and curriculum are not explicit.	Links between 21 st Century Skills and curriculum are somewhat explicit, but still being developed.	Links between 21 st Century Skills and curriculum are explicit.
The connections between technology standards and curriculum are not explicit.	Links between technology standards and curriculum are somewhat explicit, but still being developed.	Links between technology standards and curriculum are explicit.

Figure 5 on the right indicates the current status of Element 1: 21st Century Standards at the LEA level. Local progress for this element and results from specific questions posed to both teachers and administrators follow.

21st Century Standards Summary Scores

The data reported for the summary of each element is based on a scoring strategy where questions related to this element were identified, normalized to an 8-point scale, and weighted.

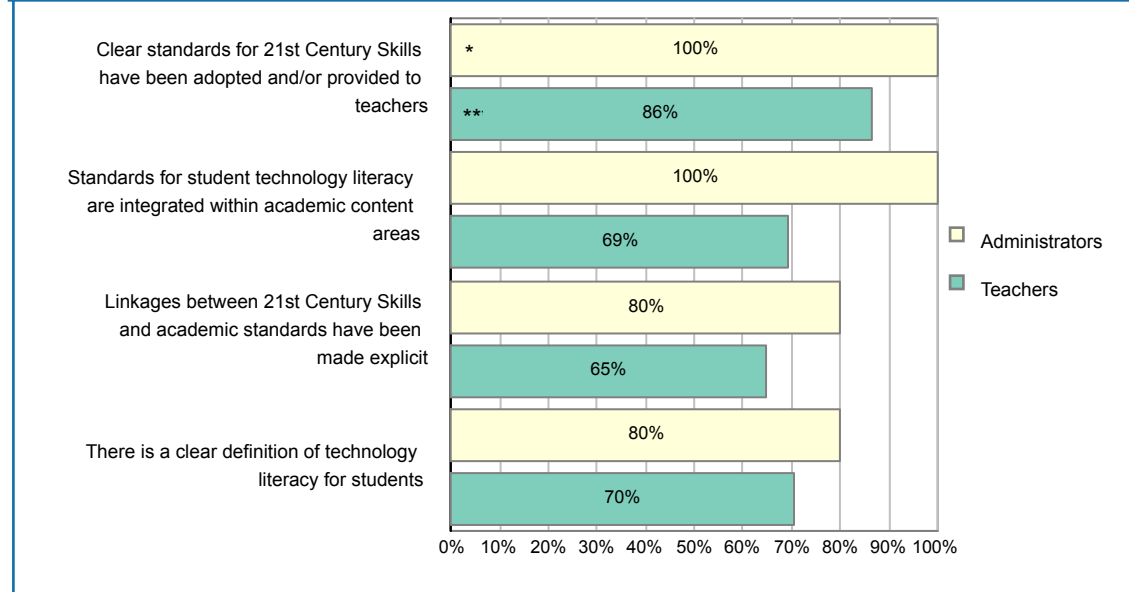
Figure 5: 21st Century Standards scores for administrator, teacher, and aggregate.



Schools that have addressed this element have created a foundation that will allow the emergence of 21st Century Learning strategies to be part of their academic curriculum, and thoughtfully developed 21st Century Skills and technology literacy for 21st Century Learning.

The responses to questions in this element reveal the extent to which teachers and administrators see each of the components of 21st Century Standards being addressed within their LEA. There may be value in comparing the teachers' and administrators' perceptions of how 21st Century Standards are addressed. These results are strong indicators of the degree to which the LEA is systematically addressing standards for 21st Century Skills and technology literacy throughout their curriculum.

Figure 6: In our LEA:



* Administrators were asked if clear standards for 21st Century Skills have been adopted.

** Teachers were asked if they have been provided with clear standards for 21st Century Skills.

Element 2: 21st Century Assessments

Components of the Fair Assessments SAS element include providing continuous feedback, the use of assessment data by teachers to plan, adjust, and evaluate instruction, the articulation of both formative and summative assessments within individual lessons, and the inclusion (when appropriate) of standardized assessment questions. Within the PATI-SAS framework, this SAS component expands to include 21st Century Assessments.

Establishing fair assessments within the curriculum ensures that there is continuous attention to what students are learning; pathways to understanding aspects of the curriculum that may necessitate student intervention; and a clear sense of progress for student learning. The indicators and key questions within this element address:

Using technology to demonstrate learning. Are students using technology to demonstrate learning in rich, authentic ways? Is the use of technology empowering fair and meaningful assessment? Do demonstrations of learning in a digital environment allow students to truly show what they know and are able to do?

Technology enabled assessment of academic content and 21st Century Skills. Is technology enabling the formative and summative assessment of academic content, 21st Century Skills, and technology literacy? By using technology to assess academic content what affordances are there to support teachers' work that traditional assessments may not allow?

Longitudinal data systems. Do data systems include data on 21st Century Skills and technology literacy? How can there be an overlap between the assessment of academic content, 21st Century Skills and technology literacy? Can this overlap, within longitudinal data systems, inform the practice of classroom teachers and school leadership?

Communicating student progress. Do families and students receive timely updates on student progress? How can technology empower the timely communication of assessment results? Can communication that is powered by technology create a more transparent view of student progress? How can this more transparent and timely communication lead to improved student learning?

Data from the PATI Instructional Phase indicates that there are generally three levels of progress within responding Pennsylvania schools.

Relevant Components of Technology/21st Century Learning

Element 2 - 21st Century Assessments
Assessments are expanded to include assessment of key 21st Century Skills. Technology supports both assessment processes and the data from those assessments.

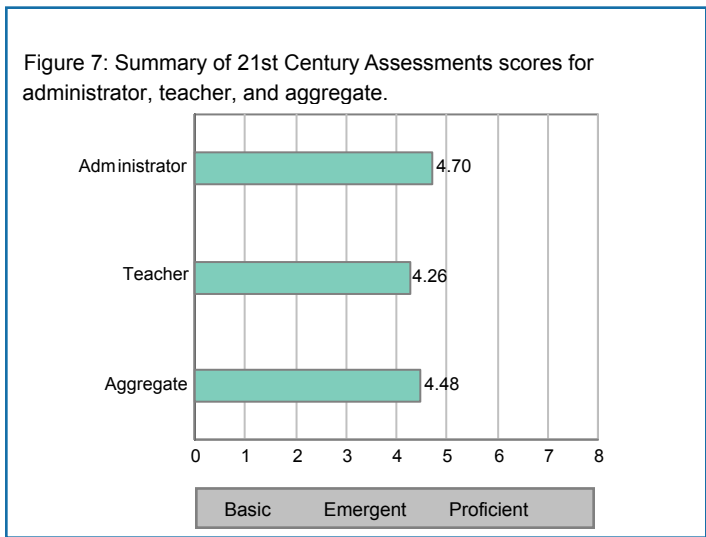
- Students use technology to demonstrate learning.
- Technology is used to assess core content and 21st Century Skills (including technology literacy) formatively and summatively.
- Longitudinal data systems are in place populated with data related to 21st Century Skills and technology literacy.
- Technology is used to ensure timely, transparent communication of student progress to students and

ELEMENT 2: 21ST CENTURY ASSESSMENTS RANGE OF PROGRESS		
BASIC	EMERGENT	PROFICIENT
Teacher observations, standardized tests, and past achievement data are available but there is scattered use of portfolios or examples of student work.	Teacher observations, standardized tests, and past achievement data are readily available. Portfolios or examples of student work may or may not be used.	Teacher observations, standardized tests, past achievement data and use of portfolios or examples of student work are readily available and have an established use.
May use student presentations with technology and project based assessment that may or may not include any digital component in other student performances.	Occasionally use project based assessments, and are increasingly including a digital component into other student performances.	Consistently use project based assessments, and are increasingly including a digital component into other student performances.
Rarely, if ever, use audience response systems, online tests/quizzes, or other web based assessment tools.	Increasingly using audience response systems, online tests/quizzes, and other web based assessment tools with students.	Have an established use of audience response systems, online tests/quizzes, and other web based assessment tools with students.
Technology has the same level of importance in both formative and summative assessment situations.	Technology is viewed as an important, but not essential, element in both formative and summative assessment situations.	Technology is viewed as an essential element in both formative and summative assessment situations.
Consistently use email to communicate with students/families.	Consistently use email to communicate with students/families. On occasion use a listserv, online bulletin boards, teacher web page, instant messaging or other Web 2.0 tools to communicate with students/families.	Consistently use email with a developing use of course web pages, a listserv, online discussion boards, and IM. Could benefit from attention to other Web 2.0 tools including twitter or social networking.

Figure 7 on the right indicates the current status of Element 2: 21st Century Assessments at the LEA level. Local progress for this element and results from specific questions posed to both teachers and administrators follow.

21st Century Assessments Summary Scores

The data reported for the summary of each element is based on a scoring strategy where questions related to this element were identified, normalized to an 8-point scale, and weighted.



A key factor in Fair Assessments for 21st Century Learning is the use of technology to facilitate both formative and summative assessments. Figure 8 provides insight into opportunities for this use in your LEA.

The following figures provide insight into the degree to which assessment strategies are used, as reported by teachers.

Additionally, Figure 9 and 10 demonstrates those strategies, as reported by teachers and administrators, for communicating student progress.

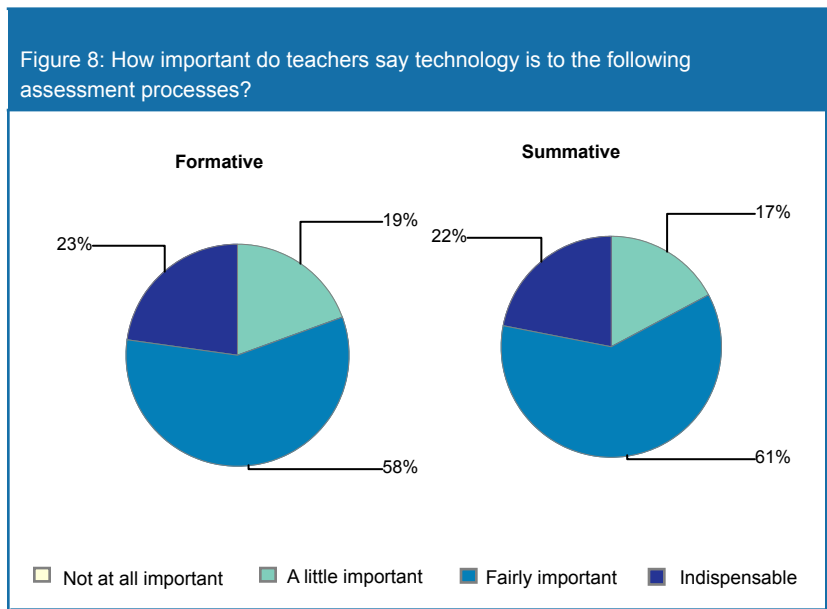


Figure 9: How often do teachers use each of the assessment strategies listed below

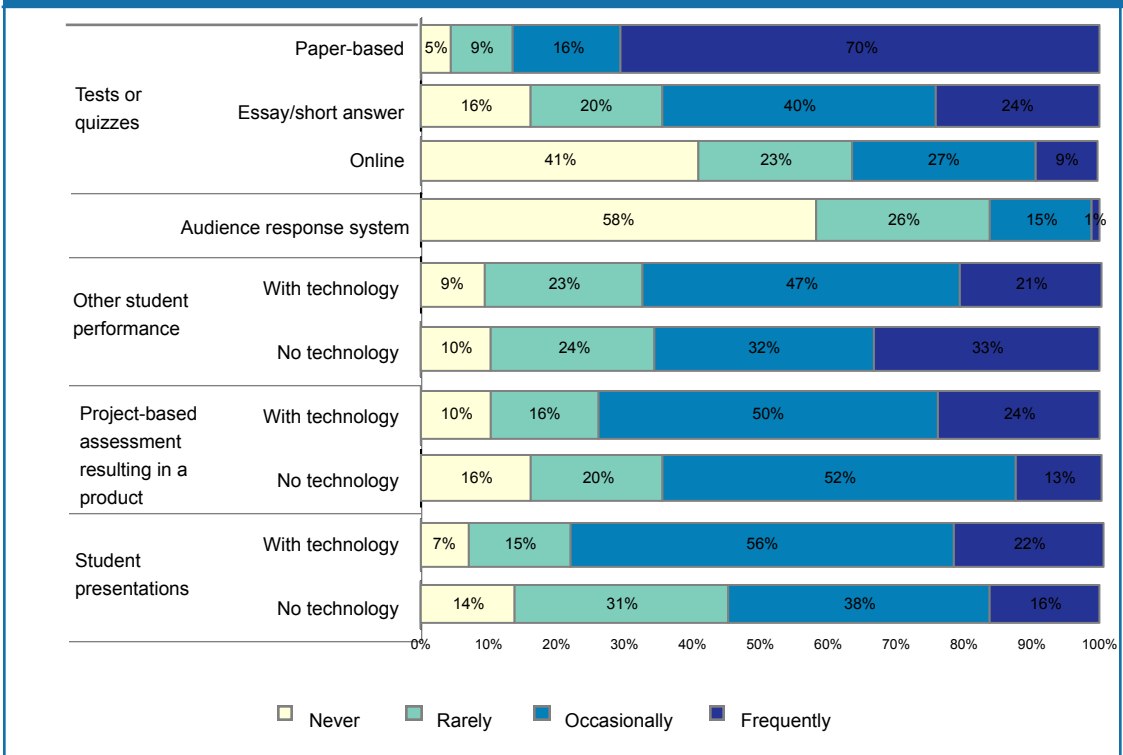
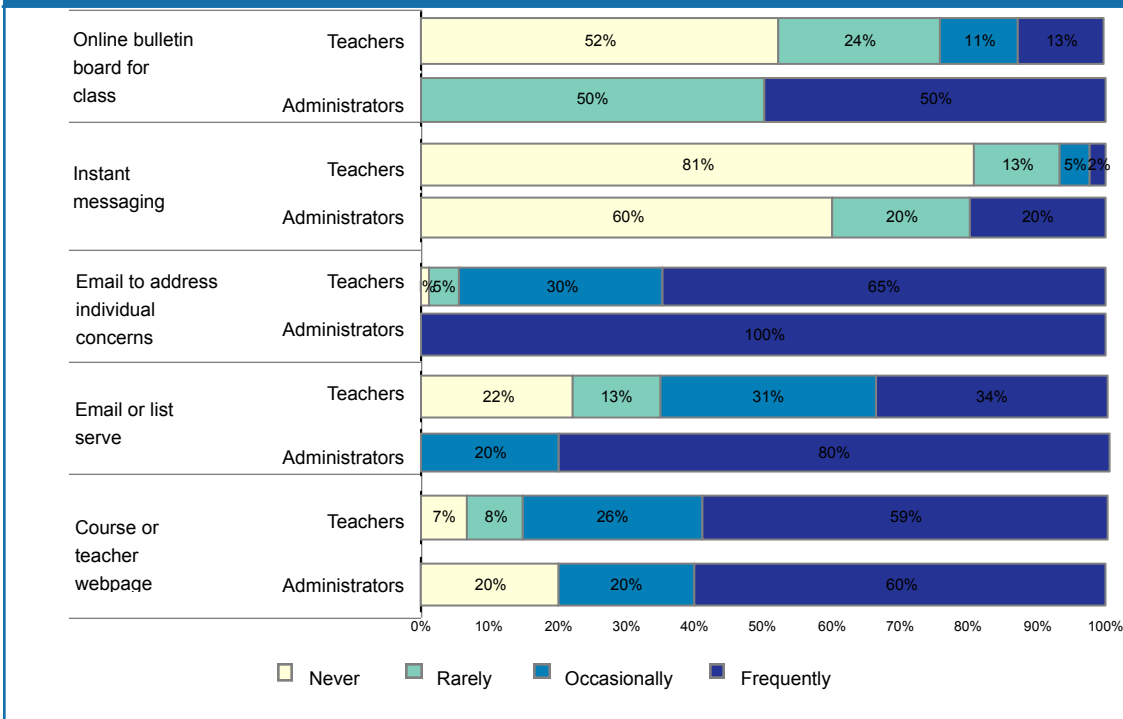


Figure 10: How frequently do teachers and administrators use the following to communicate student progress or other class-related information to students and/or parents?



Element 3: 21st Century Curriculum

Components of the Curriculum Framework SAS element include having a scope and sequence for 21st Century Skills, having big ideas attend to current research, and explicitly demonstrating the integration of 21st Century Skills.

A curriculum framework that includes 21st Century Skills articulates when and how those skills will be addressed, making it evident that 21st Century Learning is a priority throughout the curriculum. The indicators and key questions within this element address:

Curricular scope and sequence for teaching 21st Century Skills. Has the LEA outlined a scope and sequence for teaching 21st Century Skills to ensure that the integration of these skills are well thought out and addressed along a continuum throughout relevant grades?

Use of cognitive, social, and neuroscience research to ground big ideas within the 21st Century curriculum. Is it evident that the big ideas within the curriculum are grounded in research? Are inquiry, collaborative learning, multimodal resources, and authenticity integrated into the curriculum at each grade level?

Explicit integration of 21st Century Skills throughout the curriculum framework. Do curriculum frameworks explicitly address 21st Century Skills? Is it apparent what 21st Century Skills will be addressed throughout grade levels? How are 21st Century Skills being integrated throughout the curriculum?

Data from the PATI Instructional Phase indicates that there are generally three levels of progress within responding Pennsylvania schools.

Relevant Components of Technology/21st Century Learning
<p>Element 3 - 21st Century Curriculum <i>Curricula integrate and highlight 21st Century Skills and resources.</i></p> <ul style="list-style-type: none"> • There is an articulated scope and sequence for 21st Century Skills. • Big ideas are grounded in cognitive, social, and neuroscience research. • The curriculum framework demonstrates an explicit integration of 21st Century Skills.

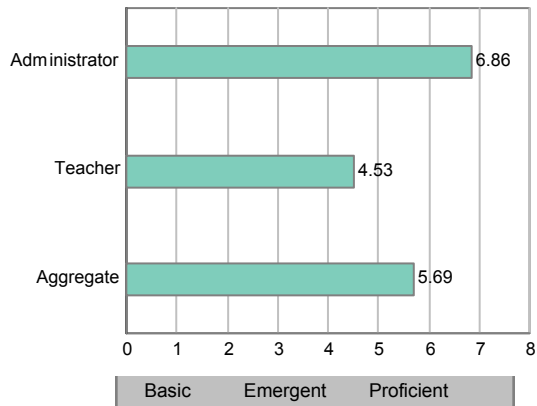
ELEMENT 3: 21ST CENTURY CURRICULUM RANGE OF PROGRESS		
BASIC	EMERGENT	PROFICIENT
There is no available scope and sequence for 21 st Century Skills available.	There may be an informal scope and sequence of 21 st Century Skills in place, or some disagreement as to whether a formal scope and sequence has been developed.	A clearly articulated scope and sequence for 21 st Century Skills has been developed and is in place throughout the LEA.
The divergent preparedness of educators to integrate 21 st Century Skills throughout the curriculum may demonstrate a need for further professional development in order to fully integrate 21 st Century Skills.	While educators feel somewhat prepared to integrate 21 st Century Skills, such as collaboration and critical thinking throughout the curriculum, those same educators may be struggling to address other skills, such as visual media literacy or self-directed learning.	Educators feel well prepared to thoughtfully integrate all 21 st Century Skills throughout the curriculum. It is evident that the LEA has fully prepared educators.
There is minimal, if any, attention to 21 st Century Skills within the curriculum framework.	21 st Century Skills are addressed within the curriculum framework.	The LEA has fully integrated 21 st Century Skills into their curriculum framework.

Figure 11 on the right indicates the current status of Element 3: 21st Century Curriculum at the LEA level. Local progress for this element and results from specific questions posed to both teachers and administrators follow.

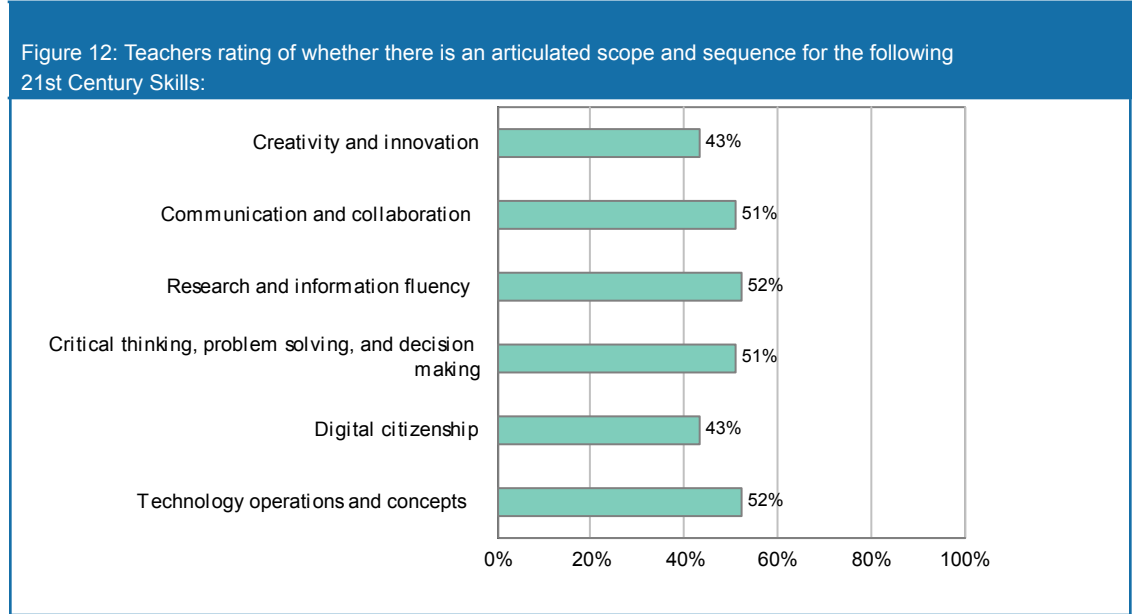
21st Century Curriculum Summary Scores

The data reported for the summary of each element is based on a scoring strategy where questions related to this element were identified, normalized to an 8-point scale, and weighted.

Figure 11: Summary of 21st Century Curriculum scores for administrator, teacher, and aggregate.



Schools that have addressed this element have developed a meaningful pathway for 21st Century Learning to occur throughout the curriculum. By addressing 21st Century Skills throughout the curriculum and presenting expectations for 21st Century Learning through an articulated scope and sequence, these schools are giving the teaching and integration of 21st Century Skills the attention they require. Digital citizenship can be defined as students understanding of human, cultural, and societal issues related to technology and their practice of legal and ethical behavior.



Responses to questions in this element demonstrate how 21st Century Skills are explicitly taught and integrated throughout the curriculum. The results shown in Figure 12 can serve as a starting point in thinking about your LEA's progress in developing a scope and sequence for 21st Century Skills, and how knowledgeable both teachers and administrators are in those areas that support this element. Results from this element may help identify professional development needs, as well as needs in instructional development/planning to ensure that 21st Century Skills are being effectively integrated throughout the curriculum.

100% of administrators in your LEA reported that a scope and sequence for 21st Century skills has been articulated.

Element 4: 21st Century Instruction

Components of the Instruction SAS element include an alignment between what is taught and current standards, having students that are challenged by the work they are presented, meeting the needs of individual students, and using instructional strategies to increase student achievement. Further, this element attends to the use of video demonstrations of instructional strategies and e-portfolios by teachers. Within the PATI-SAS framework, this SAS component expands to include 21st Century Instruction.

Integrating 21st Century Instruction into the classroom ensures that instructional practices thoughtfully model, scaffold, and develop 21st Century Skills and technology literacy of students. The indicators and key questions within this element address:

Knowledge age literacies. Does instructional practice model, scaffold, and develop information and technology literacy? Does classroom instruction embrace the power of developing local and global connections? Are students collaborating on authentic work that demands critical and creative thinking?

Access and use of technology in and outside of the classroom/school. Do students and teachers have access to technology in and outside of the classroom or school? Are students and teachers using that technology for teaching and learning in and outside of the classroom or school?

Technology supported instructional strategies. Is technology used to differentiate instruction? Is technology used during instruction to engage students? How is technology used to support instructional strategies in general?

Strategies for building 21st Century Skills. How are strategies for building 21st Century Skills integrated into instruction? Do instructional choices naturally provide opportunities for integrating 21st Century Skills?

Data from the PATI Instructional Phase indicates that there are generally three levels of progress within responding Pennsylvania schools.

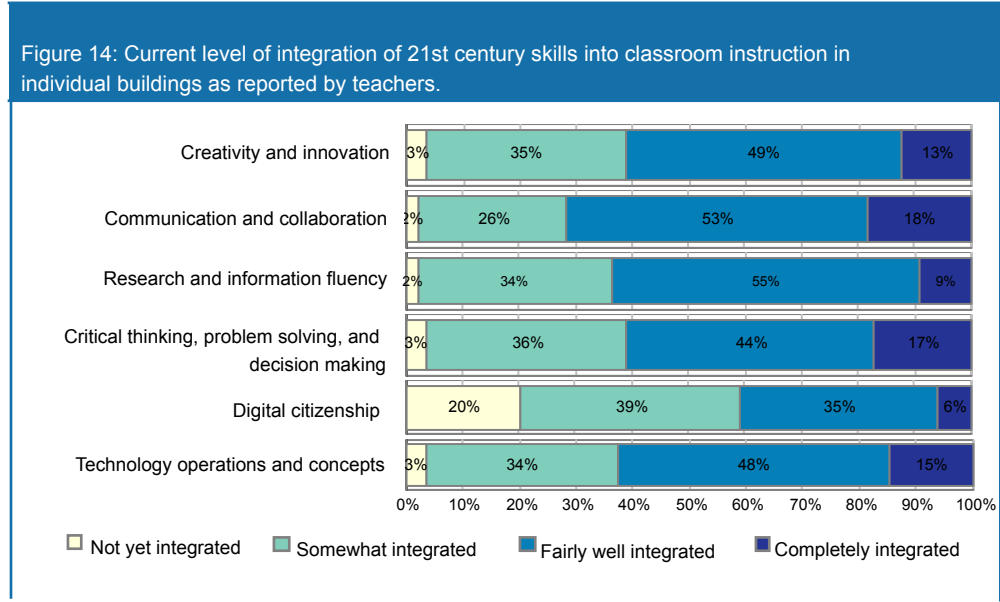
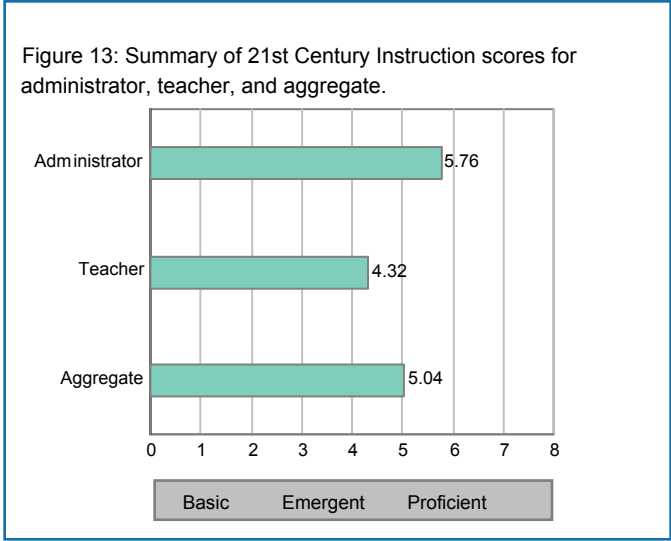
Relevant Components of Technology/21st Century Learning
<p>Element 4 -21st Century Instruction <i>Instructional practices model, scaffold, and develop 21st Century Skills and technology literacy.</i></p> <ul style="list-style-type: none"> • Knowledge age literacy and local and global connections. • Access and use of technology for teaching and learning in and outside of the classroom/school. • Technology supports instructional strategies, designed to differentiate instruction and promote student engagement. • Strategies for building 21st Century Skills are integrated into instruction.

ELEMENT 4: 21ST CENTURY INSTRUCTION RANGE OF PROGRESS		
BASIC	EMERGENT	PROFICIENT
Teachers rarely incorporate technology into instruction, and may be especially apprehensive about allowing students to collaborate with experts or peers that are not in their classroom.	Teachers are incorporating technology, and are exploring or experimenting with ways that collaboration between peers and experts outside of the classroom can be integrated into instruction.	Teachers are actively incorporating technology, and are seeking out new opportunities for students to collaborate with experts or peers that are not in their classroom.
Instruction continues to be focused on lectures, students have limited opportunities to collaborate, engage in experiments, or develop quality work products.	While teacher led discussions and demonstrations may still be a component of instruction, teachers are integrating more opportunities for students to collaborate together and work with project or problem-based learning.	Students are actively engaged in authentic experiences where they are exploring real-world problems and using technology to create dramatic demonstrations of learning that document high quality work.
Teachers have not yet explored instructional strategies that allow them to develop 21 st Century Skills.	Teachers are becoming more familiar with instructional strategies that will allow them to develop academic and 21st Century Skills.	Teachers are integrating strategies for building 21 st Century Skills across content areas in the classroom.

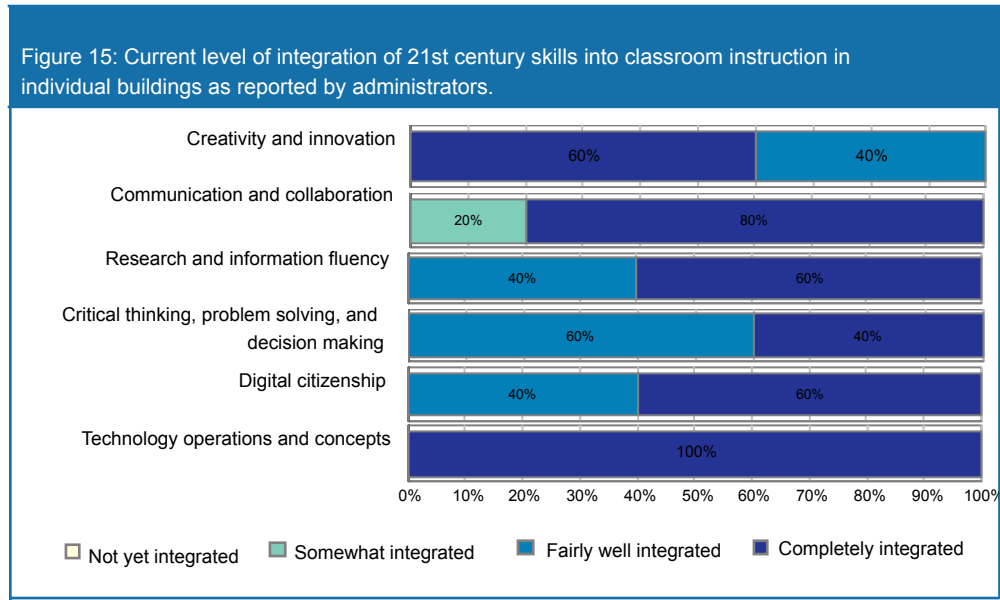
Figure 13 on the right indicates the current status of Element 4: 21st Century Instruction at the LEA level. Local progress for this element and results from specific questions posed to both teachers and administrators follow.

21st Century Instruction Summary Scores

The data reported for the summary of each element is based on a scoring strategy where questions related to this element were identified, normalized to an 8-point scale, and weighted.



A key factor in 21st Century Instruction is the use of technology to integrate 21st Century skills. Figure 14 provides an overview of the current level of integration of six 21st Century Skills as reported by teachers. Figure 15, provides an overview of the current level of integration of six 21st Century Skills as reported by administrators.



It is recommended that any gaps that exist between teachers and administrator perspectives of how 21st Century Skills are integrated into classroom instruction be identified. Tasks such as developing a common understanding or identifying areas where teachers could be more supported in the classroom can be leveraged into opportunities that can positively impact students.

Element 5: Digital Age Materials and Resources

Components of the Materials and Resources SAS element include having unit and lessons that are prepared, with standards addressed, and a clear articulation of what students should know and be able to do. Further activities are well developed with multimodal web-based content available to students, and multiple methods of assessment.

Digital Age Materials and Resources.

Empower students and teachers to access quality information and develop quality materials that are multimodal in nature. These materials and resources are supported by a quality infrastructure and a vision that supports the hardware and software necessary to generate meaningful authentic work. The indicators and key questions within this element address:

Access to technology and multimodal resources.

Do teachers and students have access to technology? Are multimodal resources available? How are students engaging in authentic work that is of high quality and meaningful?

Range of technology. Is there a range of technology available for teacher and student use? Is a range of technology use encouraged in the classroom? How is a range of technology supported? Have learning goals and technologies been aligned?

Technical Infrastructure. Does the technical infrastructure support the use of digital age materials and resources? Are technical infrastructure needs aligned to a vision for 21st Century Learning? How does access to technology support or hinder the use of digital age materials and resources in the classroom?

Data from the PATI Instructional Phase indicates that there are generally three levels of progress within responding Pennsylvania schools.

Relevant Components of Technology/21st Century Learning
<p>Element 5 - Digital Age Materials and Resources <i>Materials and resources reflect the tools and processes of a digital age.</i></p> <ul style="list-style-type: none"> Teachers and students have access to technology and multimodal resources that allow students to generate quality results through authentic work. Teachers have the opportunity to engage in dynamic professional development. A range of technology is encouraged and supported. Technical infrastructure aligns to a vision of 21st Century learning.

ELEMENT 5: DIGITAL AGE MATERIALS AND RESOURCES RANGE OF PROGRESS		
BASIC	EMERGENT	PROFICIENT
Students and teachers may have limited access to technology resources.	Students and teachers have access to some technologies, but technology resources do not consistently allow students to generate high quality, authentic work.	Students and teachers have consistent access to technology resources that enable students to engage in quality, authentic work.
Support for teacher innovation with 21 st Century Teaching and Learning practices could improve.	There is general support for teacher innovation with 21 st Century Teaching and Learning practices.	There is a great deal of support for teacher innovation with 21 st Century Teaching and Learning practices.
Teacher professional development is still face-to-face workshops or seminars. While teachers may engage in professional learning communities or independent self-study, participating in those types of professional development, or any online opportunities, is sparse.	Teacher professional development is still face-to-face workshops or seminars, professional learning communities, or independent self-study using traditional or online resources. However, teachers may be increasingly accessing professional development opportunities that are part of online professional communities.	Teachers may still be accessing professional development in workshops and seminars. However, they are engaged in professional learning communities and independent self-study where they are accessing professional development that includes online resources, and opportunities that are part of online professional communities.

Figure 16 on the right indicates the current status of Element 5: Digital Age Materials and Resources at the LEA level. Local progress for this element and results from specific questions posed to both teachers and administrators follow.

Digital Age Materials and Resources Summary Scores

The data reported for the summary of each element is based on a scoring strategy where questions related to this element were identified, normalized to an 8-point scale, and weighted.

A strong component of a 21st Century Learning environment is the use of digital age materials and resources by both teachers and students. When students have access to technology, teachers can use digital tools to engage learners in rich, authentic work. Further, LEAs build capacity when teachers have opportunity and access to technology to support their own professional practice and growth.

Access to digital age materials and resources can be leveraged to impact student learning when teachers are encouraged and supported to use those materials and resources in their classrooms. As shown in Figure 17, understanding teacher perspectives on how innovation is supported can help an LEA to strategically address how 21st Century Learning occurs.

As you plan for integrating digital age materials and resources consider how those tools are directly used by students for instructional use.

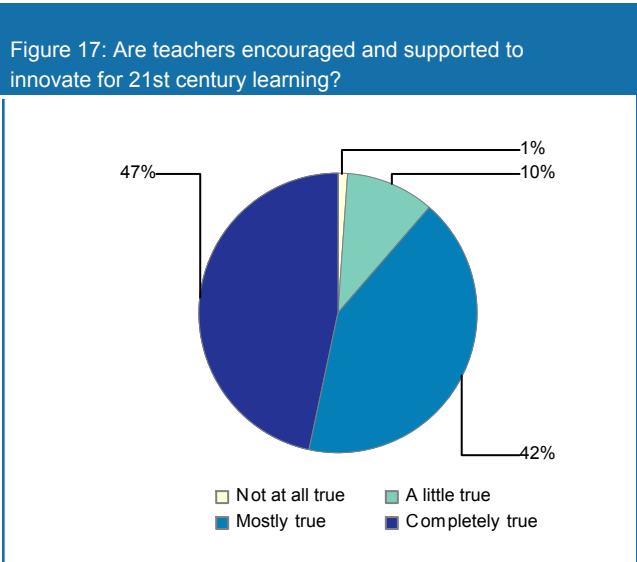
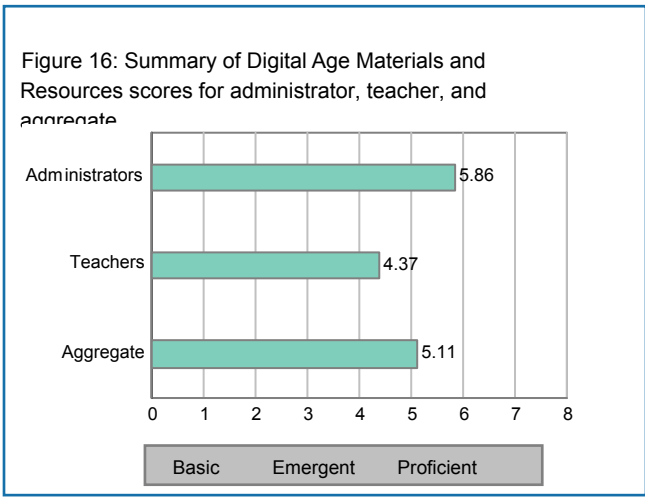
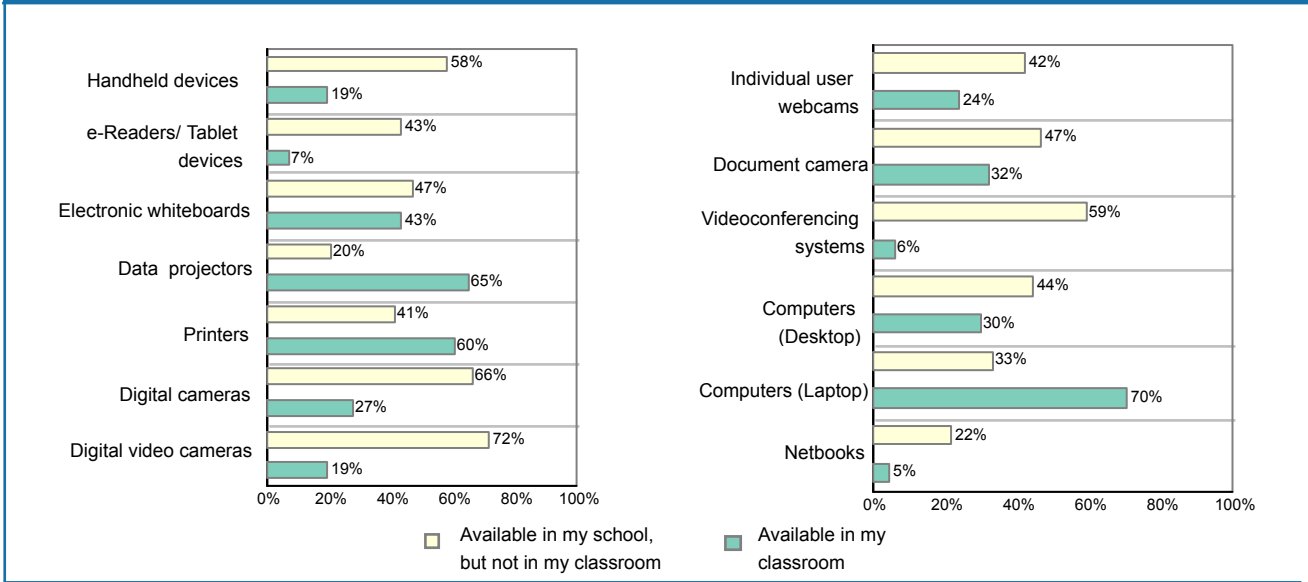


Figure 18: Availability of digital age tools for students



Element 6: 21st Century Interventions

Components of the 21st Century Interventions SAS element include having student support tied to standards. In addition, interventions are tied to specific student needs, core content areas, and assistive technologies. Also, interventions include tools for teachers such as web-based training and support materials.

21st Century Interventions are tied to 21st Century Learning Standards and address the unique needs of individual students through the use of technology. These interventions allow for scaffolding of 21st Century Skills to be explicitly taught and modeled. The indicators and key questions within this element address:

Relevancy to 21st Century learning standards. Are interventions tied to learning standards? Are interventions appropriate for a particular grade level? Are individual student needs being addressed? Are these needs being addressed through the use of technology?

21st Century Skills. Are 21st Century Skills apparent throughout interventions? Do strategies scaffold the teaching of 21st Century Skills? Are 21st Century Skills modeled? Are 21st Century Skills explicitly taught?

Teachers' access to web-based materials. Do teachers have access to professional development materials related to interventions? Are these materials web-based? Do these materials explicitly address 21st Century Interventions? Do teachers use these materials? How are teachers using these materials to implement 21st Century Interventions?

Data from the PATI Instructional Phase indicates that there are generally three levels of progress within responding Pennsylvania schools.

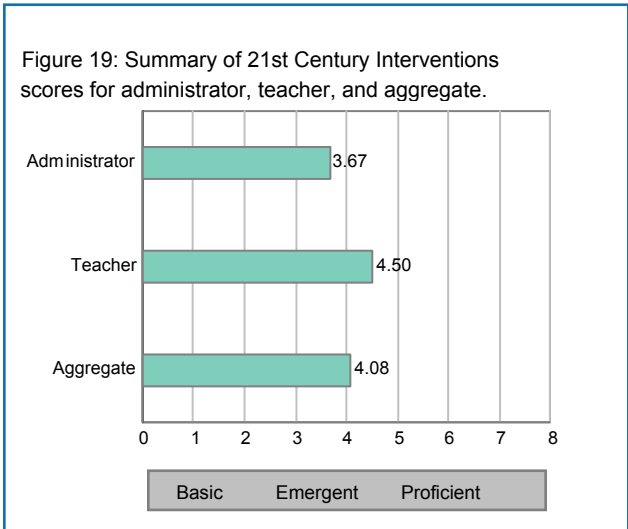
Relevant Components of Technology/21st Century Learning
<p>Element 6 - 21st Century Interventions <i>Educational interventions</i></p> <ul style="list-style-type: none"> Interventions are relevant to 21st Century Learning standards at each grade level and address individual student needs through the use of technology. Strategies for modeling, scaffolding, and explicitly teaching 21st Century Skills are addressed within interventions. Teachers have access to virtual and hybrid (technology supported with face-to-face) professional development.

ELEMENT 6: 21ST CENTURY INTERVENTIONS RANGE OF PROGRESS		
BASIC	EMERGENT	PROFICIENT
Technology -based interventions not considered.	Technology -based interventions are sometimes considered.	Teachers actively consider technology - based interventions to meet the individual needs of students.
Interventions do little to model or teach 21 st Century Skills.	Interventions may model or in some way teach 21 st Century Skills that may include some, but not all, of the following: creativity and innovation, communication and collaboration, research and information literacy, critical thinking, problem solving, and decision making, digital citizenship, and technology operations and concepts.	Interventions explicitly model and/or teach 21 st Century Skills including creativity and innovation, communication and collaboration, research and information literacy, critical thinking, problem solving, and decision making, digital citizenship, and technology operations and concepts.

Figure 19 on the right indicates the current status of Element 6: 21st Century Interventions at the LEA level. Local results from specific questions posed to both teachers and administrators follow.

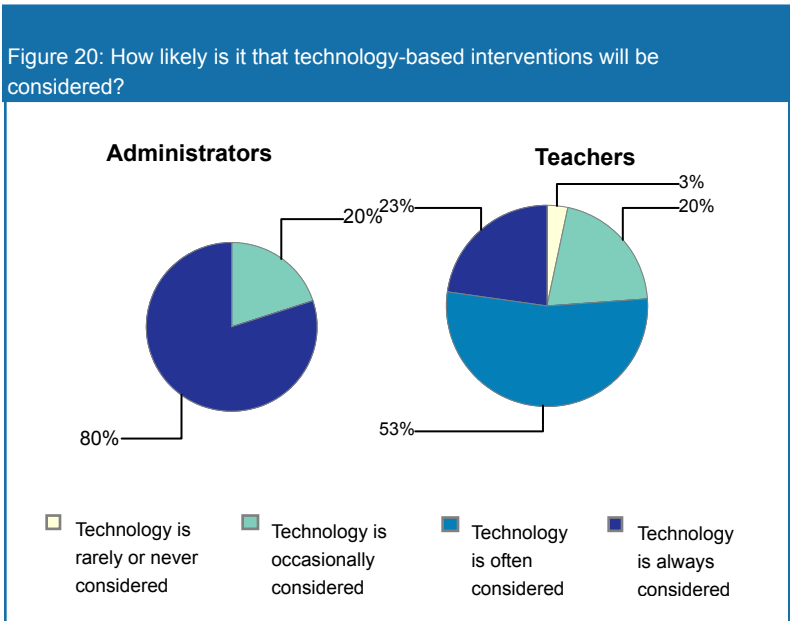
21st Century Interventions Summary Scores

The data reported for the summary of each element is based on a scoring strategy where questions related to this element were identified, normalized to an 8-point scale, and weighted.



To address 21st Century Interventions in schools, administrators and teachers must be open to exploring ways that technology-based interventions can address individual student’s needs. As interventions are designed to address specific standards, 21st Century interventions also consider how 21st Century Skills are addressed as part of those standards.

As shown in Figure 20, considering how technology-based interventions can address individual student needs is an important step in creating 21st Century Interventions. Further, as learning standards and 21st Century Skills continue to be thoughtfully integrated, developing a connection between interventions and 21st Century Skills will also be important. This movement toward full integration of 21st Century Skills will ensure that all students are developing these skills through explicit teaching and modeling.



Figures 21 and 22, below, are intended to provide a snapshot of your LEA's progress and readiness to consider and integrate 21st Century Skills and technology into planning student interventions.

Figure 21: Teachers' rating of how often strategies for building the following 21st Century Skills are included in specific interventions

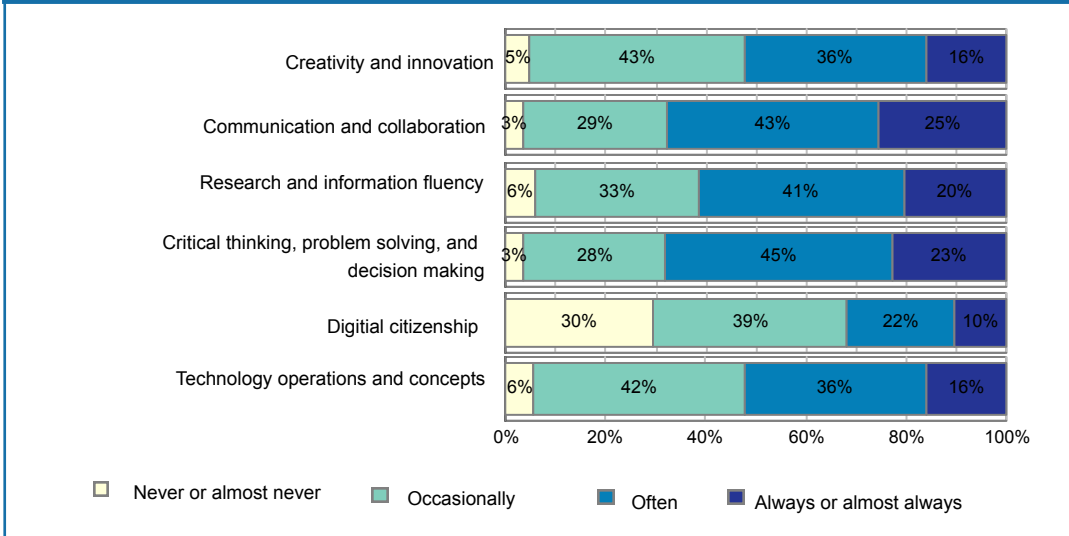
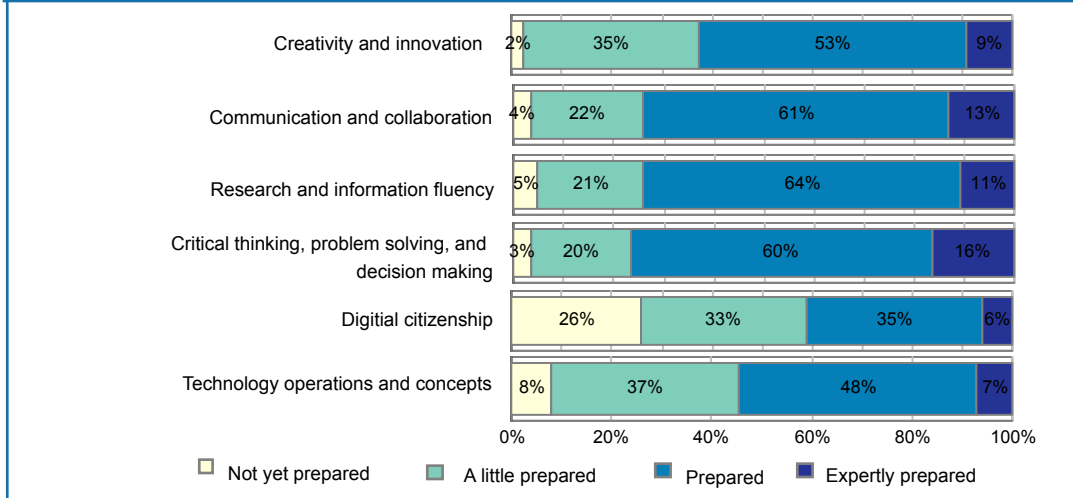


Figure 22: Teachers' rating of how prepared they are to integrate the following 21st Century



LEAs Such As Yours

The following charts are initial mean scores, based on an 8 point scale for the following elements. Scores are displayed for administrators and teachers by locale and aggregate.

Element 1: 21st Century Standards

Standards are expanded to include 21st Century Skills including Technology Literacy

Element 2: 21st Century Assessment

Assessments are expanded to include assessment of key 21st Century skills. Technology supports both assessment processes and the data from those assessments.

Element 3: 21st Century Curriculum

Curricula integrate and highlight 21st Century Skills and resources

Element 4: 21st Century Instruction

Instructional practices model, scaffold, and develop 21st Century Skills and Technology Literacy.

Element 5: Digital Age Materials and Resources

Materials and resources reflect the tools and processes of a digital age.

Element 6: 21st Century Interventions

Educational interventions are tied to 21st Century learning standards and skills.

For this section of the report data is reported by locale. For LEAs Such As Yours, LEAs were separated into three types (school district, charter school and Career and Technical Center). We further separated the districts by locale (urban, suburban, town, and rural). The following table provides locale definitions from the National Center for Educational Statistics (Office of Management and Budget, 2000; Standards for Defining Metropolitan and Micropolitan Statistical Areas; Notice Federal Register [65] No. 249).

Locale	Definition
Urban	
Large	Territory inside an urbanized area and inside a principal city with population of 250,000 or more
Midsized	Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000
Small	Territory inside an urbanized area and inside a principal city with population less than 100,000
Suburban	
Large	Territory outside a principal city and inside an urbanized area with population of 250,000 or more
Midsized	Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000
Small	Territory outside a principal city and inside an urbanized area with population less than 100,000
Town	
Fringe	Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area
Distant	Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area
Remote	Territory inside an urban cluster that is more than 35 miles from an urbanized area
Rural	
Fringe	Census -defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster
Distant	Census -defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster
Remote	Census -defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster
Charter	
	A school providing free public elementary and/or secondary education to eligible students under a specific charter granted by the state legislature or other appropriate authority, and designated by such authority to be a charter school.
CTC	
	School organizations that provide personal and leadership development related to a career and technical program area as recognized by the United States Department of Education

Overview

The first set of figures demonstrates the statewide mean scores based on an aggregate of teacher and administrator responses, by locale and LEA types : charter school and Career and Technical Center.

Your LEA is
classified as:
Suburban

Figure 23: Element 1: 21st Century Standards Aggregate Scores (Mean)

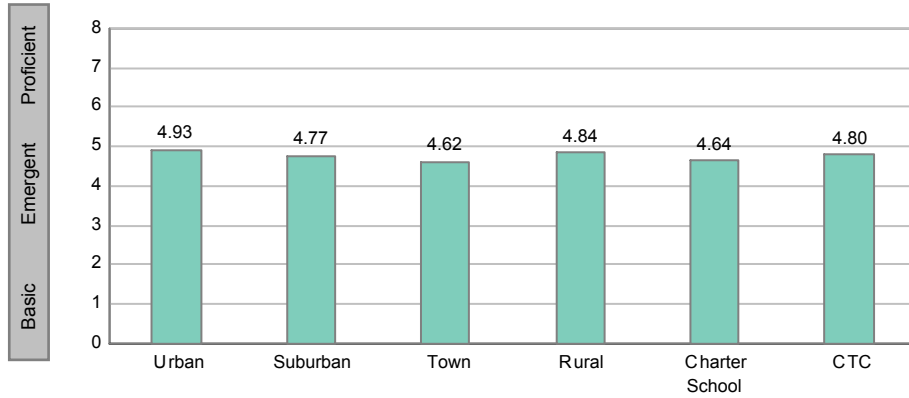


Figure 24: Element 2: 21st Century Assessments Aggregate Scores (Mean)

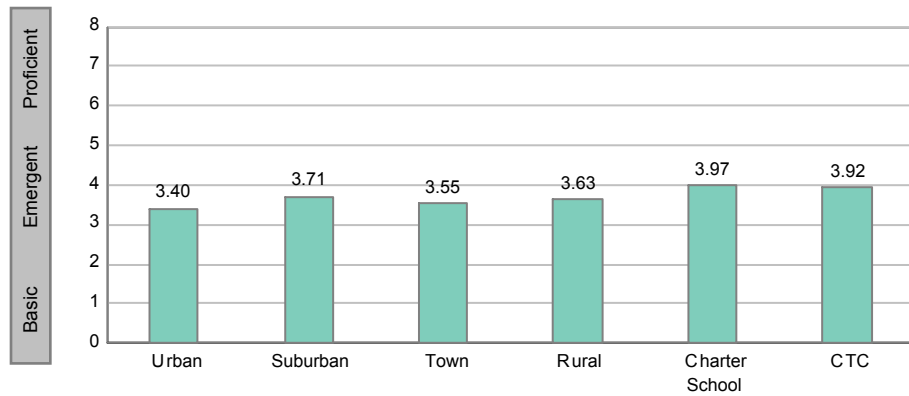


Figure 25: Element 3: 21st Century Curriculum Aggregate Scores (Mean)

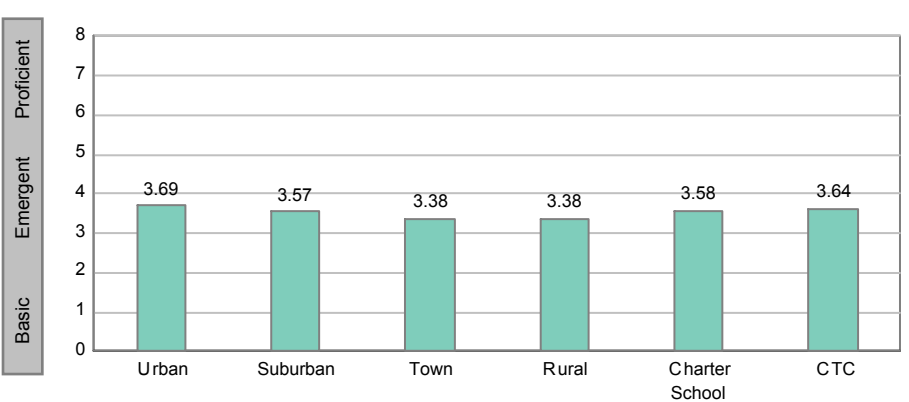


Figure 26: Element 4: 21st Century Instruction Aggregate Scores (Mean)

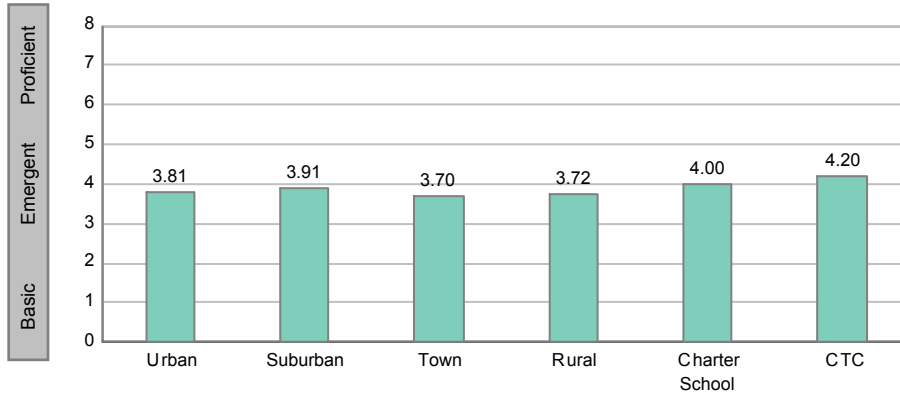


Figure 27: Element 5: Digital Age Materials and Resources Aggregate Scores (Mean)

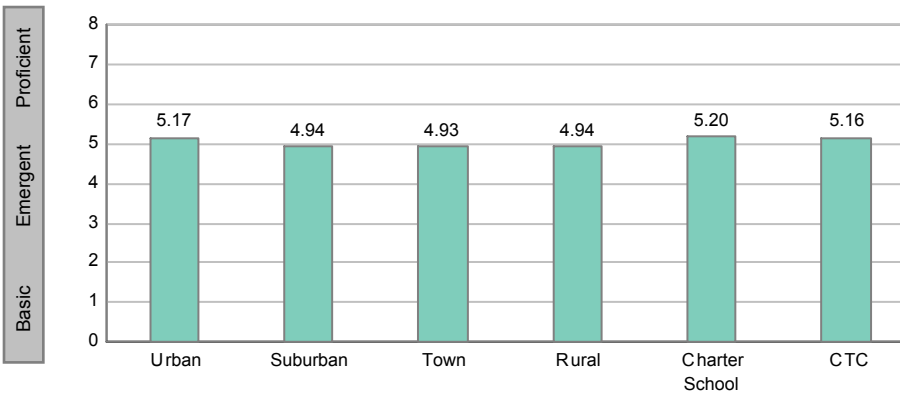
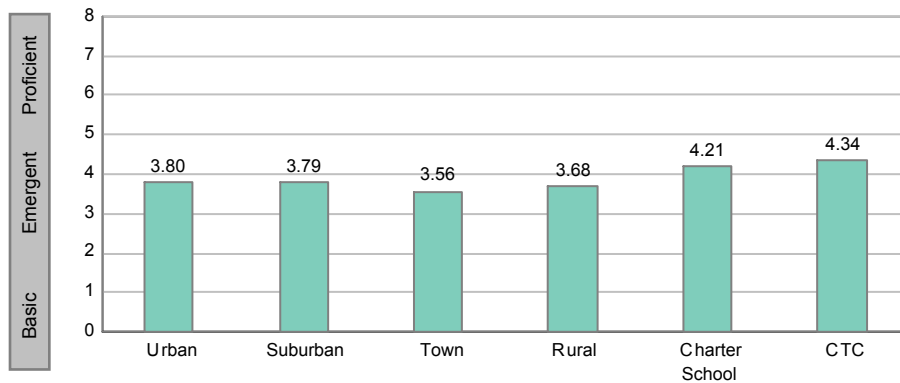
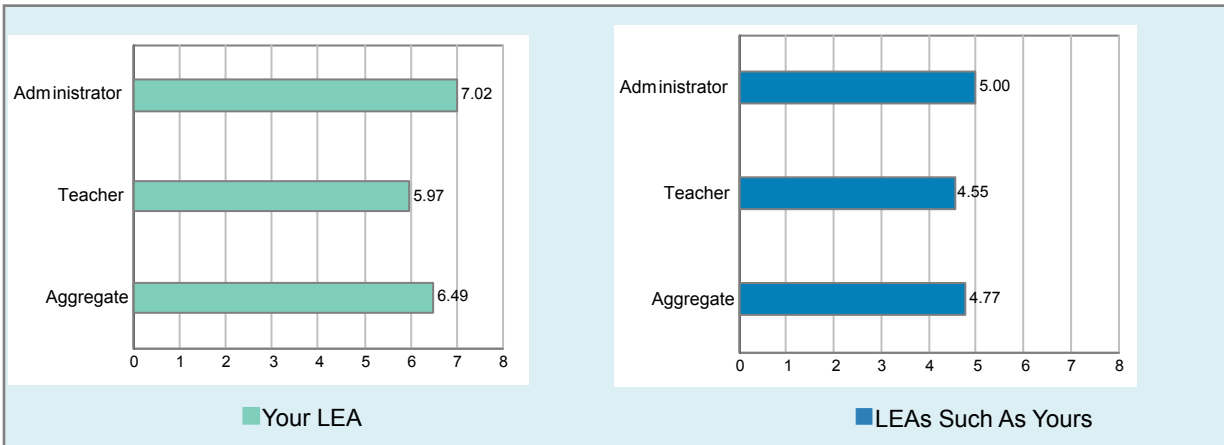
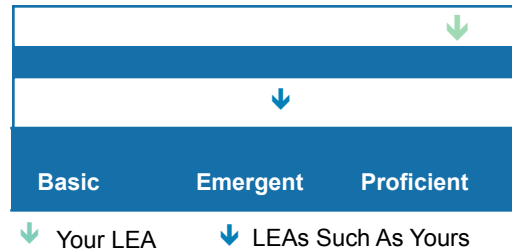


Figure 28: Element 6: 21st Century Interventions Aggregate Scores (Mean)



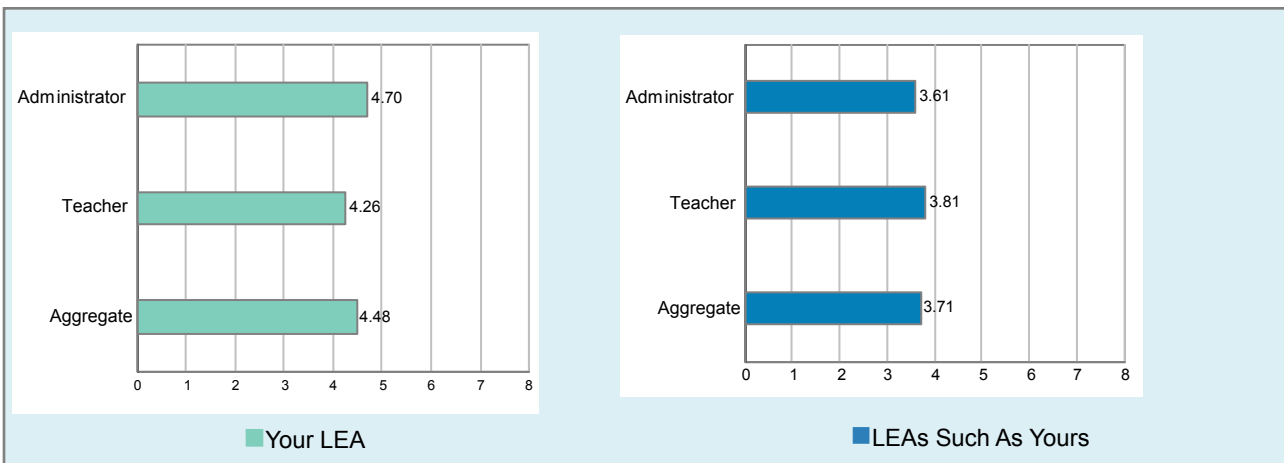
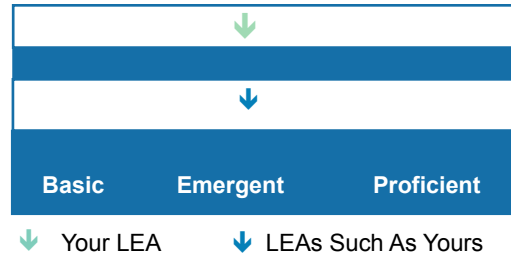
LEAs Such As Yours - Element 1

Your aggregate score in Element 1: 21st Century Standards demonstrated that your LEA is currently progressing at either the Basic, Emergent, or Proficient levels. LEAs such as yours (as determined by locale) are progressing at one of those three levels as well.



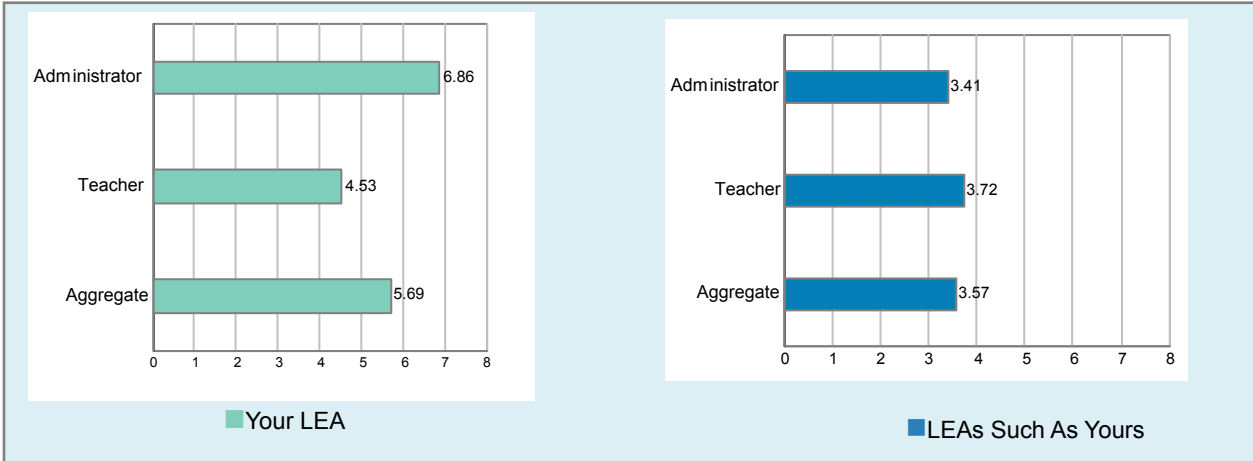
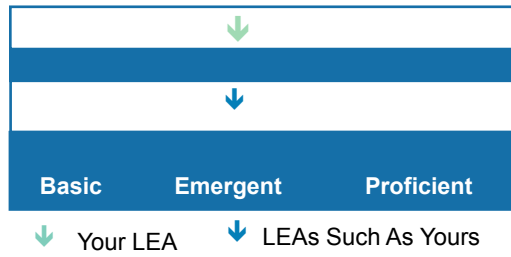
LEAs Such As Yours - Element 2

Your aggregate score in Element 2: 21st Century Assessments demonstrated that your LEA is currently progressing at either the Basic, Emergent, or Proficient levels. LEAs such as yours (as determined by locale) are progressing at one of those three levels as well.



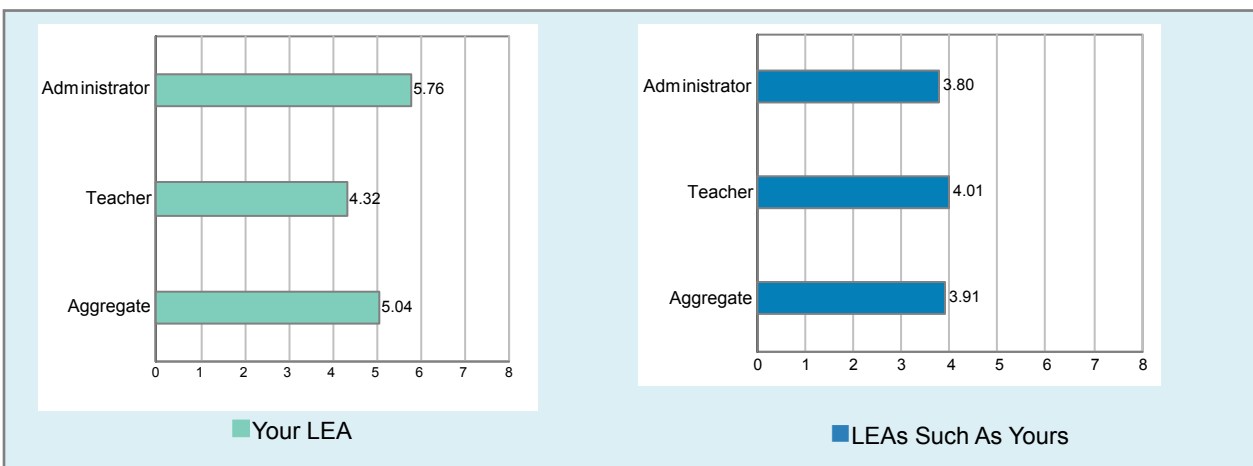
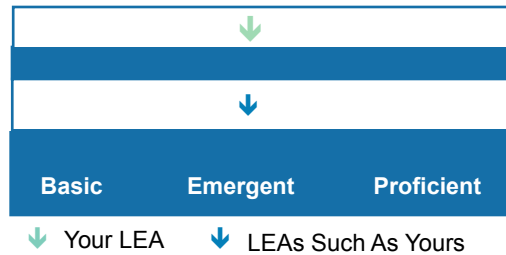
LEAs Such As Yours - Element 3

Your aggregate score in Element 3: 21st Century Curriculum demonstrated that your LEA is currently progressing at either the Basic, Emergent, or Proficient levels. LEAs such as yours (as determined by locale) are progressing at one of those three levels as well.



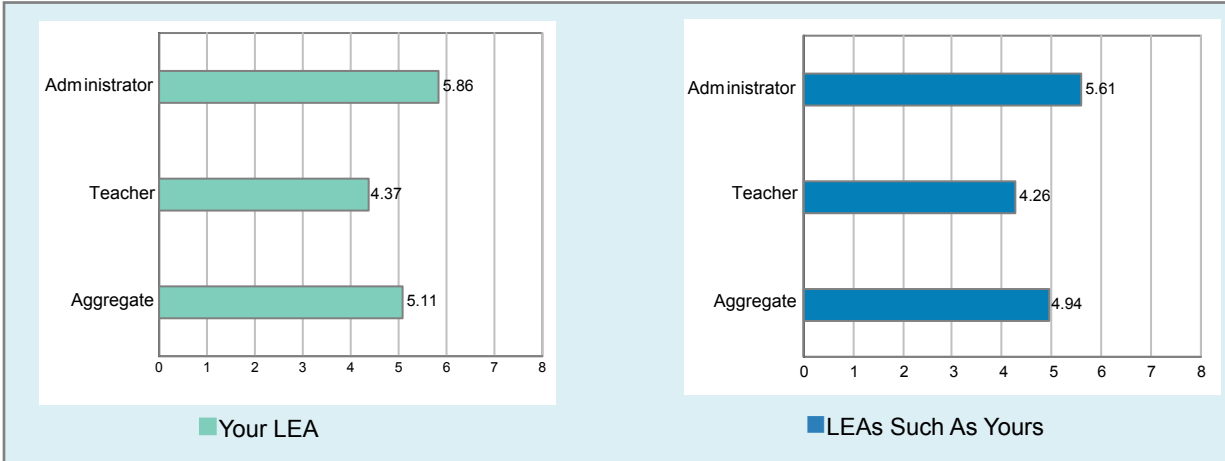
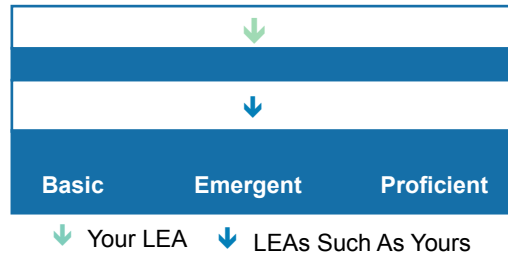
LEAs Such As Yours - Element 4

Your aggregate score in Element 4: 21st Century Instruction demonstrated that your LEA is currently progressing at either the Basic, Emergent, or Proficient levels. LEAs such as yours (as determined by locale) are progressing at one of those three levels as well.



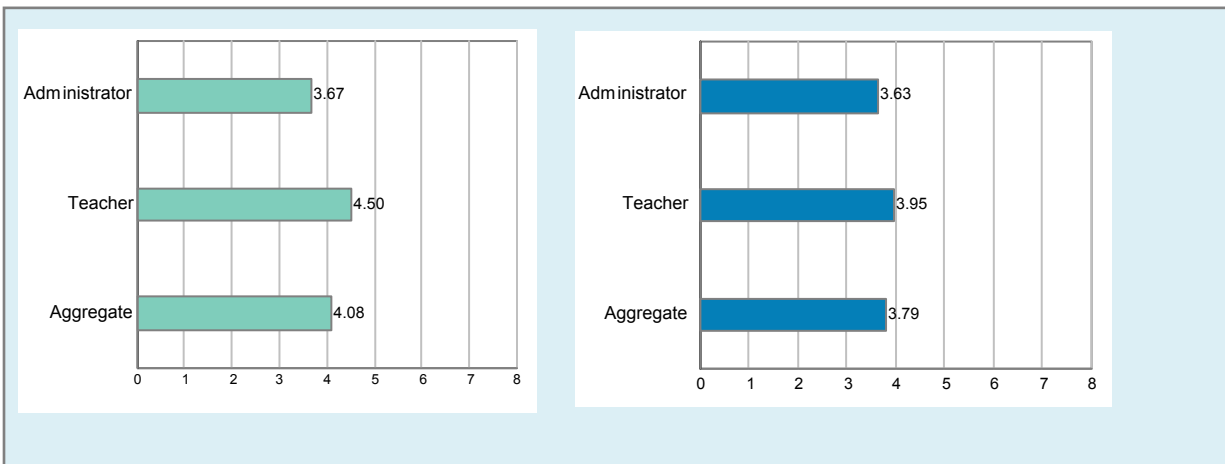
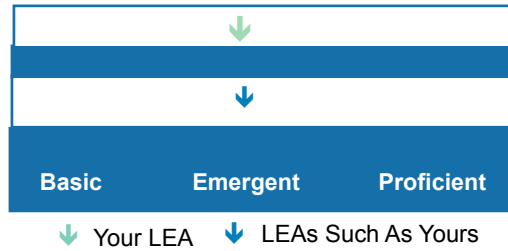
LEAs Such As Yours - Element 5

Your aggregate score in Element 5: Digital Age Materials and Resources demonstrated that your LEA is currently progressing at either the Basic, Emergent, or Proficient levels. LEAs such as yours (as determined by locale) are progressing at one of those three levels as well.

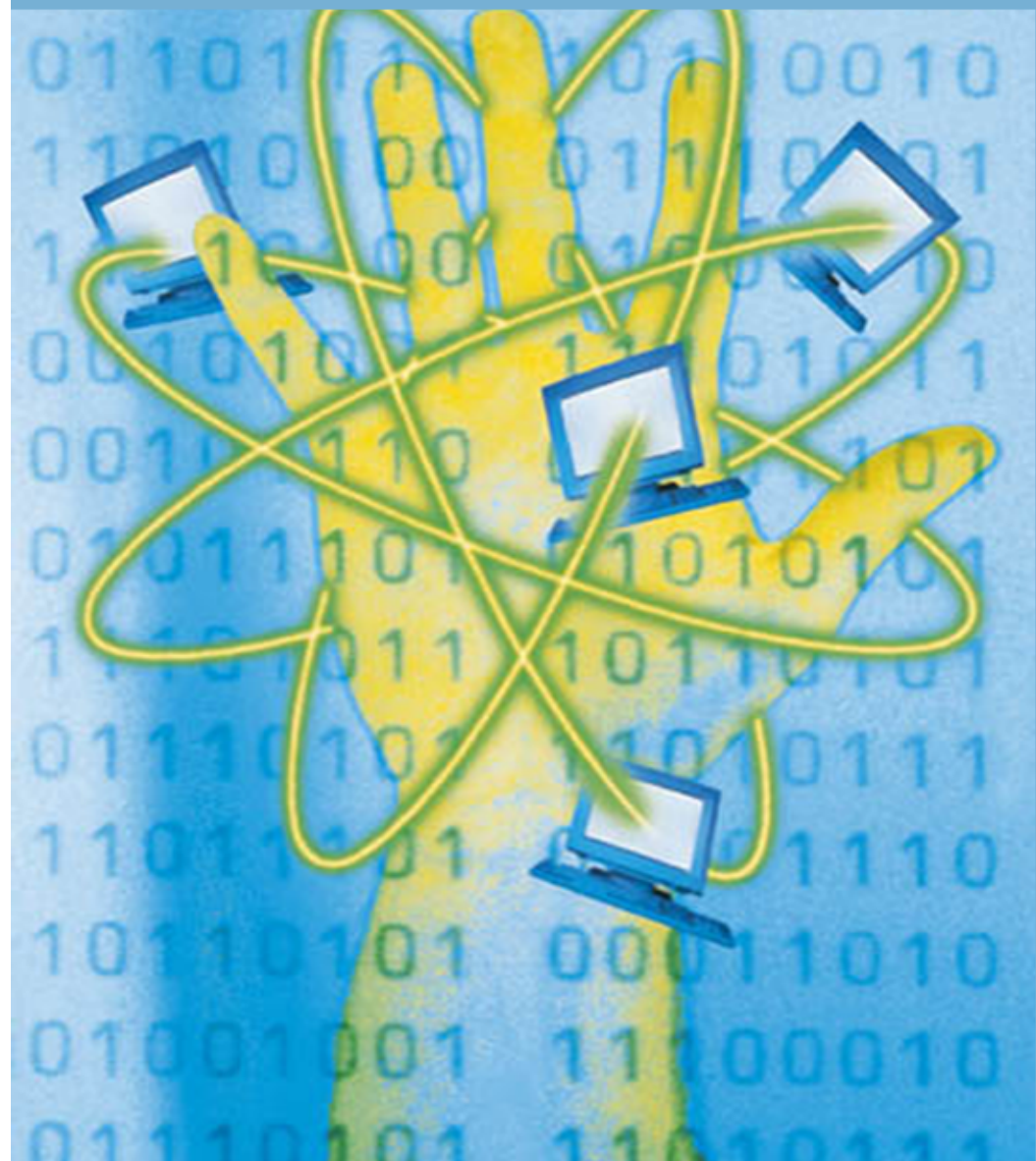


LEAs Such As Yours - Element 6

Your aggregate score in Element 6: 21st Century Interventions demonstrated that your LEA is currently progressing at either the Basic, Emergent, or Proficient levels. LEAs such as yours (as determined by locale) are progressing at one of those three levels as well.



PATI Technology Phase Report: Southern Lehigh SD



Connectivity, Networking and Wide Area Networks (WANs)

*Is the school network robust and appropriate to the teaching, learning, and administrative needs of the school?
Has the LEA established a wide area network capable of meeting the learning and administrative needs of everyone in the school community?*

LEA- BASED WAN QUESTIONS

Data regarding LEA-Based WANs were collected in the LEA Technology Directors survey .

Southern Lehigh SD has an LEA-Based Wide Area Network (WAN) connection where all schools in the LEA share one internet connection.

Table T1: In relation to the LEA head end, what is the:

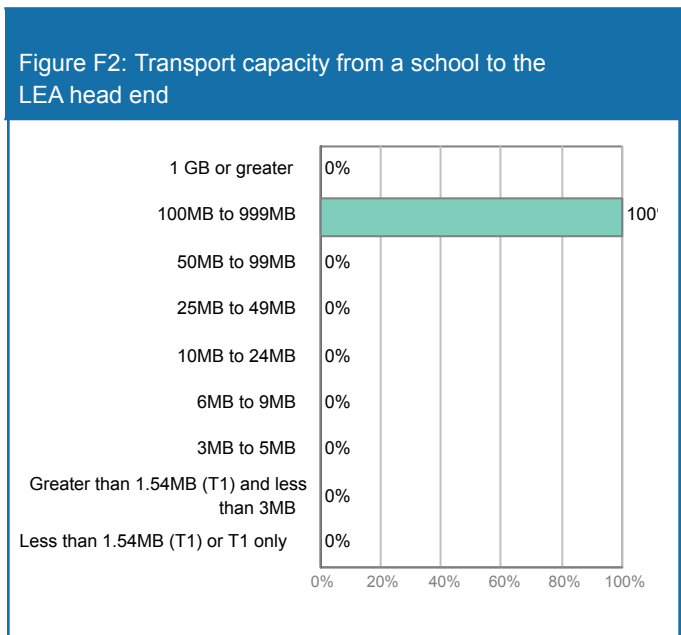
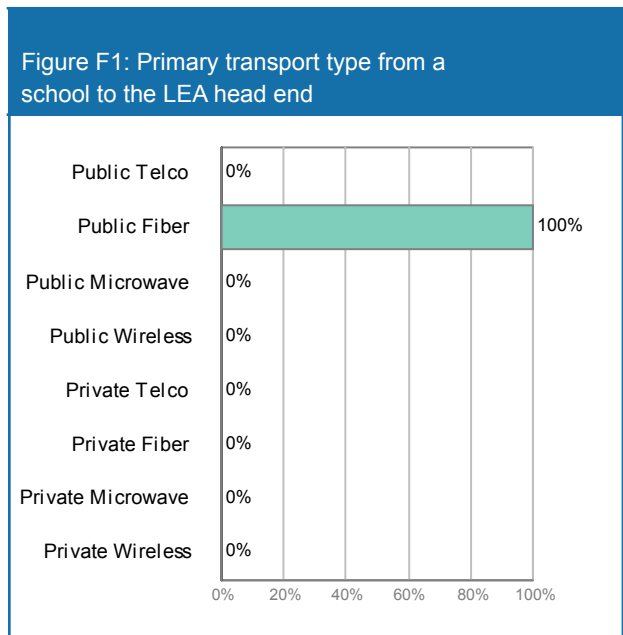
Response	
Primary transport type	Public Fiber
Transport capacity	100MB to 999MB
Protocol utilized	Ethernet
Internet capacity	100MB to 999MB

In Southern Lehigh SD, Internet2 is available.

SCHOOL CONNECTIONS TO LEA-BASED WAN

Data in the following section were collected in the School Technology survey .

In Southern Lehigh SD, 83% of schools reported having a connection to an LEA- Based Wide Area Network (WAN) that is used for applications such as file sharing, administrative functions, student information, and digital content.



HOW SCHOOLS RECEIVE THEIR INTERNET CONNECTION

Data in the following section were collected in the School Technology survey .

In Southern Lehigh SD, 0% of schools reported receiving their Internet connection through the LEA- Based WAN, 100% of schools receive their Internet connection directly from an Internet Service Provider (ISP), and 0% schools do not have a connection to the Internet.

Figure F3: The Internet capacity from a school to the LEA head end when the Internet is provided through an LEA-based WAN

n/a

Figure F4: The Internet capacity from a school to the Internet Service Provider when Internet is provided through an ISP

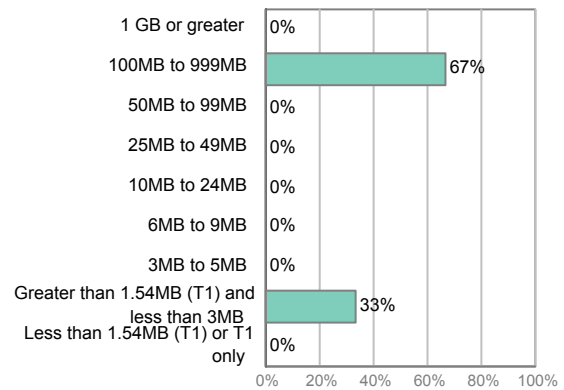
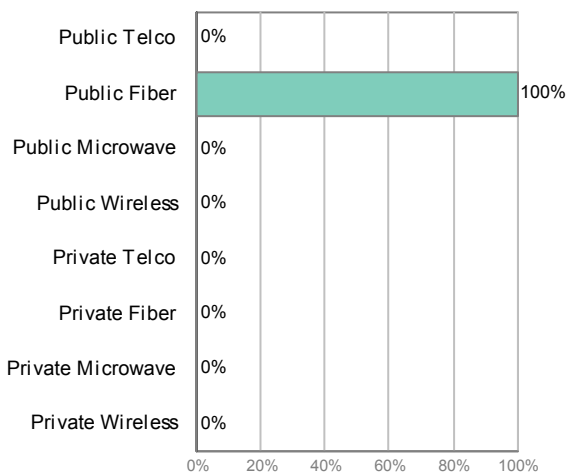


Figure F5: The primary transport type from a school to the Internet Service Provider when Internet is provided through an ISP



LOCAL AREA NETWORK QUESTIONS

Data in the following section were collected in the School Technology survey .

Figure F6: Maximum Local Area Network (LAN) capacity at a school

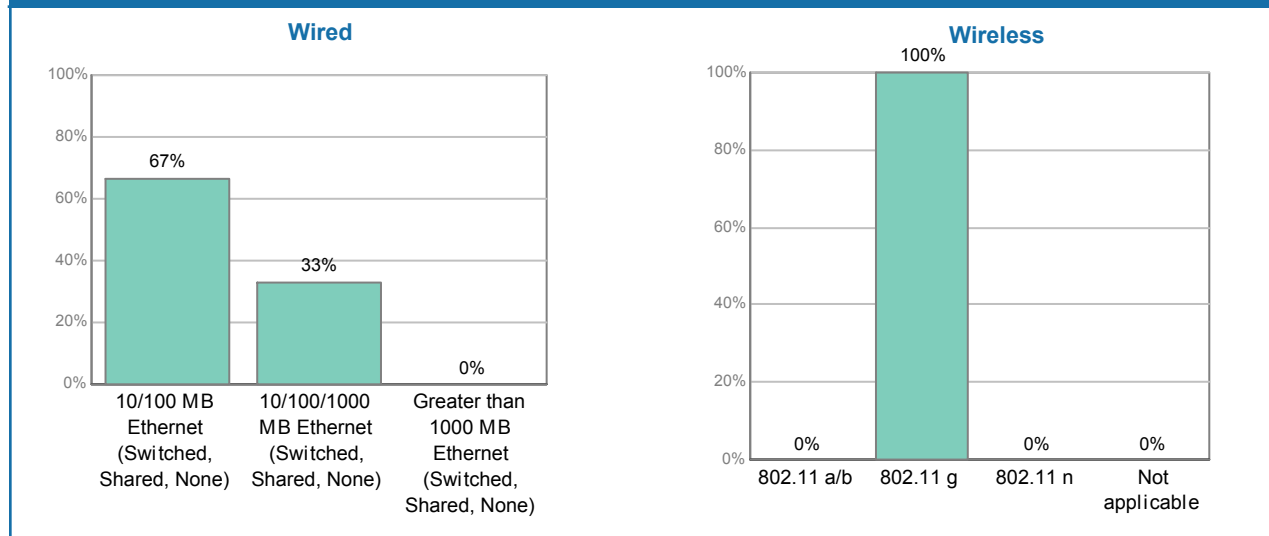
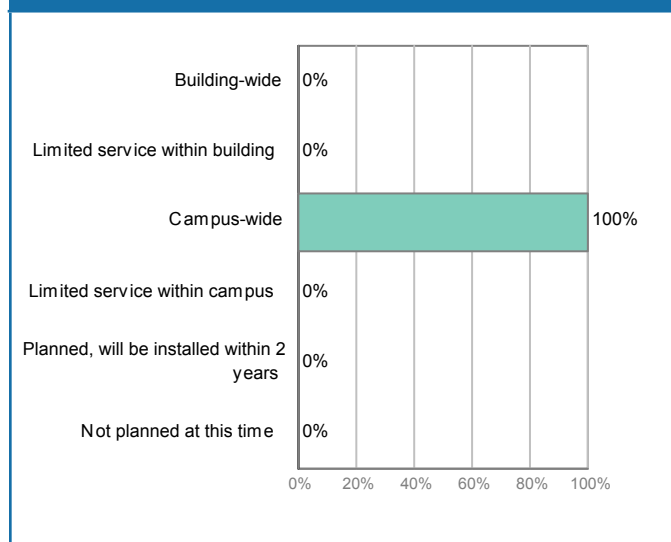


Figure F7: Wireless Local Area Network (LAN) capacity at a school



Technology Availability & Usage

Are the amount of technology resources for teaching and learning sufficient and conveniently located in order to maximize impact? How and with what frequency, are students using technology to support their learning?

Data regarding computer and device counts were collected in the School Technology survey .

COMPUTERS & DEVICES FOR INSTRUCTIONAL USE

TABLE T2: THE NUMBER OF HIGH, MID AND LOW CAPACITY COMPUTERS LOCATED IN CLASSROOMS, STATIONARY LABS, MOBILE COMPUTER LABS AND LIBRARY/MEDIA CENTERS.

	Classrooms		Stationary Computer Labs		Mobile Computer Labs		Library/Media Centers	
	SUM	MEAN	SUM	MEAN	SUM	MEAN	SUM	MEAN
High capacity computers	284	47	204	34	1,245	208	76	13
Mid capacity computers	88	15	183	31	599	100	35	6
Low capacity computers	79	13	-	-	-	-	-	-
Thin Clients	-	-	-	-	-	-	-	-
Netbooks	17	3	19	3	-	-	-	-

Within your classrooms, stationary computer labs, mobile computer labs and library/media centers, identify the number of high, mid and low capacity computers. Only high speed connectivity responses are displayed. Means represent average number of computers per school.

Responses were too low to report for computers of all types with dial-up or no Internet connections. Statewide, there were 19,252 computers available through 1 to 1 student laptop programs, and 2,499 computers with either a dialup Internet connection or no connection.

Student to computer ratios

Ratios are based on the **total possible** number of computers within a school that are available for instructional use (including thin clients and netbooks). They include data from classrooms, stationary labs, mobile labs, library/media centers, and 1-1 student laptop programs. This calculation is based on data provided by respondents of the School Technology survey .

	All Computers	High Capacity Computers
Student to computer ratio	1:1	2:1

Devices either have or do not have Internet access, as indicated.

TABLE T3: THE NUMBER OF DEVICES LOCATED IN CLASSROOMS, STATIONARY COMPUTER LABS, MOBILE COMPUTER LABS AND LIBRARY/MEDIA CENTERS.

	ACCESS	NO ACCESS
	Handheld Devices	245
e-Readers / Tablets	152	65

COMPUTERS FOR ADMINISTRATIVE USE

TABLE T4: THE NUMBER OF HIGH, MID, AND LOW CAPACITY COMPUTERS WITHIN ADMINISTRATIVE OFFICES

	SUM	MEAN
High capacity computers	67	11
Mid capacity computers	4	1
Low capacity computers	4	1

Only high speed connectivity responses are displayed. Means represent average number of computers per school.

Statewide there were 503 netbooks and 371 thin clients located in administrative offices. Additionally, there were 926 handheld devices and 428 e-Readers/tablets available to administrators.

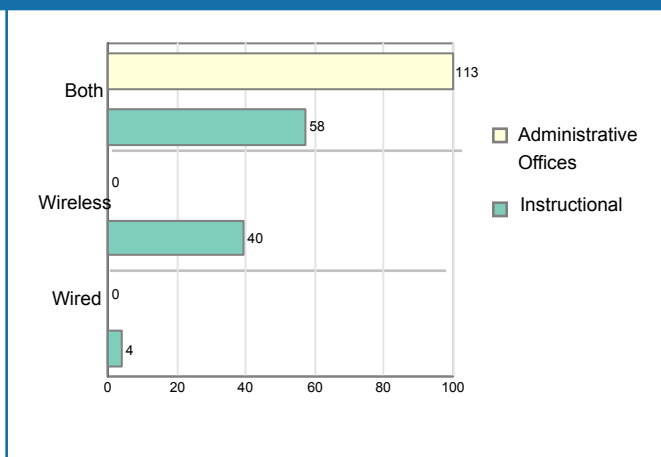
ROOMS/LABS FOR INSTRUCTIONAL & ADMINISTRATIVE USE

TABLE T5: THE NUMBER OF ROOMS/LABS WITH ACCESS TO THE INTERNET AND THOSE WITHOUT INTERNET ACCESS. FOR THOSE ROOMS/LABS WITH INTERNET PROVIDE COUNTS FOR THE NUMBER OF ROOMS/LABS WITH WIRED, WIRELESS, AND BOTH WIRELESS ACCESS.

	Classrooms	Stationary Computer Labs	Library/Media Centers	Administrative Offices
Wired	-	7	3	-
Wireless	95	-	-	-
Both wired and wireless	127	5	6	44

Notie The number of instructional use rooms without Internet access was insignificant

Figure F8: Types of Internet access in instructional and administrative rooms



Internet access within a school is noted in one of three ways. The percentage of rooms with “Both” indicates that those rooms have both wired and wireless connections. The total connectivity at a school can be found by adding all three classroom types together. The percentage of rooms without Internet access was negligible (<0.05%).

DIGITAL TOOLS AND NETWORK ACCESS

TABLE T6: DIGITAL TOOLS AVAILABLE FOR USE IN INSTRUCTIONAL ROOMS AND ADMINISTRATIVE OFFICES

	Instructional Rooms	Administrative Offices
Electronic whiteboards	75	1
Data projectors	182	1
Printers	167	35
Digital cameras	69	-
Digital video cameras	150	-
Individual user web cams	1,229	-
Wireless access points	63	2
Document cameras	84	-
Videoconferencing systems	84	-

TABLE T7: LEVEL OF USAGE OF WEB BASED TECHNOLOGIES AT THE LEA LEVEL

Videoconferencing	Moderate: 1-3 times per quarter
Web-casting	Occasional: 1-3 times a year
Streaming video	Regular: Monthly
Virtual field trips	Occasional: 1-3 times a year
Satellite courses	None

TABLE T8: AVAILABILITY OF ONLINE COURSES AVAILABLE FOR STUDENTS AND TEACHERS AT THE LEA LEVEL

Students are taking	Less than a quarter of all users
Teachers are taking for professional development	Less than a quarter of all users
Teachers are teaching for their LEA	Less than a quarter of all users

Appendix

Notes

- Only responses from completed PATI surveys are included in this report.
- Graphs and tables that display a 0 or blank space indicate no respondents answered that question, the value was smaller than .5%, or the question was not applicable.
- Due to rounding, some graphs and tables may not total 100%.
- Questions that allow multiple answers may add up to more than 100%.
- Responses are graphed or reported in tables as percentages unless otherwise noted.
- For the purpose of this report, Local Education Agency (LEA) refers to School Districts, Charter Schools, and Career and Technical Centers.

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Office of Management and Budget (2000). Standards for defining metropolitan and micropolitan statistical areas; Notice. Federal Register (65) No. 249.

Respondents by IU

The following table provides a detailed overview of those participating in the 2010- 11 PATI survey. Data are broken down by Intermediate Unit and type of personnel. Data from the PDE Professional Personnel Summary Report were used in the calculation of respondent percentages. The Professional Personnel Summary report can be found at <<http://www.education.state.pa.us/>>.

	TEACHERS		ADMINISTRATORS		SCHOOL TECHNOLOGY COORDINATORS		LEA TECHNOLOGY DIRECTORS	
	N	%	N	%	N	%	N	%
Intermediate Unit 1	1,960	51%	62	27%	82	69%	24	80%
Pittsburgh-Mt Oliver IU 2	911	39%	52	34%	58	84%	2	25%
Allegheny IU 3	3,920	42%	166	31%	213	94%	46	85%
Midwestern IU 4	1,541	39%	71	30%	93	82%	23	77%
Northwest Tri-County IU 5	2,250	54%	83	30%	109	92%	17	74%
Riverview IU 6	1,168	60%	53	42%	74	100%	20	100%
Westmoreland IU 7	879	26%	48	26%	83	84%	18	86%
Appalachia IU 8	2,769	70%	129	51%	120	94%	39	95%
Seneca Highlands IU 9	534	51%	23	33%	30	83%	14	93%
Central IU 10	678	31%	42	34%	46	67%	12	63%
Tuscarora IU 11	420	31%	41	53%	52	96%	11	85%
Lincoln IU 12	2,602	42%	136	34%	135	85%	27	87%
Lancaster-Lebanon IU 13	2,054	34%	92	24%	140	92%	23	92%
Berks County IU 14	562	12%	34	12%	89	79%	16	76%
Capital Area IU 15	1,933	30%	90	23%	158	99%	27	93%
Central Susquehanna IU 16	700	27%	46	31%	63	81%	18	86%
BLaST IU 17	775	31%	49	32%	72	87%	19	90%
Luzerne IU 18	1,171	39%	45	30%	65	89%	13	87%
Northeastern Educational IU 19	598	18%	33	18%	45	54%	16	70%
Colonial IU 20	1,612	27%	64	20%	94	83%	14	67%
Carbon-Lehigh IU 21	1,398	36%	66	29%	87	95%	17	100%
Bucks County IU 22	1,091	18%	87	27%	113	82%	17	89%
Montgomery County IU 23	2,317	29%	133	28%	148	92%	23	82%
Chester County IU 24	1,183	21%	62	21%	81	76%	16	70%
Delaware County IU 25	1,745	34%	73	24%	87	78%	14	78%
Philadelphia IU 26	1,781	14%	118	17%	285	88%	19	32%
Beaver Valley IU 27	546	29%	32	27%	41	77%	15	83%
ARIN IU 28	703	45%	41	47%	46	98%	12	92%
Schuylkill IU 29	561	40%	25	30%	37	100%	14	100%
PA State Aggregate	40,362	32%	1,996	27%	2,746	86%	546	79%

Notes:

N = Represents the number of PATI responses per category for the 2010-11 survey

%= Represents the percentage response rate per category for the 2010- 11 survey

Total computers with high speed connectivity available for instructional use by IU

TOTAL	High capacity computers		Mid capacity computers		Low capacity computers		Thin Clients		Netbooks		Total Computers	
	SUM	MEAN	SUM	MEAN	SUM	MEAN	SUM	MEAN	SUM	MEAN	SUM	MEAN
Intermediate Unit 1	5,490	29	12,211	53	1,178	10	766	8	638	6	20,283	19
Pittsburgh-Mt Oliver IU 2	3,245	23	4,322	31	1,955	20	305	3	79	1	9,906	13
Allegheny IU 3	29,943	52	26,082	51	5,948	19	3,073	8	3,666	10	68,712	25
Midwestern IU 4	13,835	51	7,669	39	784	6	334	3	616	5	23,238	18
Northwest Tri-County IU 5	9,465	39	14,040	45	3,003	16	982	6	1,592	9	29,082	20
Riverview IU 6	7,212	33	5,900	30	1,086	9	1,563	11	555	5	16,316	16
Westmoreland IU 7	12,285	49	6,873	32	1,329	8	256	2	754	5	21,497	16
Appalachia IU 8	15,911	42	12,311	38	2,639	11	139	1	905	4	31,905	16
Seneca Highlands IU 9	2,257	34	3,880	46	283	6	347	9	31	1	6,798	17
Central IU 10	6,382	54	3,318	28	1,647	14	262	3	123	1	11,732	17
Tuscarora IU 11	3,588	23	2,350	16	1,371	11	18	0	317	5	7,644	10
Lincoln IU 12	13,158	43	22,358	54	2,237	11	4,588	26	4,377	19	46,718	29
Lancaster-Lebanon IU 13	17,646	49	15,730	44	3,524	13	910	4	3,548	14	41,358	22
Berks County IU 14	16,770	73	10,015	50	1,074	13	1,106	13	1,022	10	29,987	28
Capital Area IU 15	11,939	36	18,992	50	7,519	29	1,260	6	4,099	16	43,809	25
Central Susquehanna IU 16	8,923	44	6,397	41	1,169	9	1,964	13	864	6	19,317	21
BLaST IU 17	8,166	42	10,359	56	952	8	93	1	318	3	19,888	19
Luzerne IU 18	8,125	45	6,261	39	736	7	781	7	592	6	16,495	18
Northeastern Educational IU 19	7,013	51	4,615	32	513	4	589	5	177	2	12,907	16
Colonial IU 20	14,419	57	20,745	80	3,172	18	565	6	519	5	39,420	28
Carbon-Lehigh IU 21	15,723	63	13,779	67	3,093	23	1,535	18	668	7	34,798	32
Bucks County IU 22	14,163	60	13,428	54	695	13	1,045	14	1,516	15	30,847	28
Montgomery County IU 23	25,774	58	22,890	62	4,359	20	344	2	3,003	17	56,370	28
Chester County IU 24	19,966	69	12,593	53	1,767	9	569	3	1,290	8	36,185	25
Delaware County IU 25	14,236	53	11,600	46	3,408	12	394	4	2,265	17	31,903	24
Philadelphia IU 26	52,101	47	46,094	42	43,757	42	99	0	212	0	142,263	22
Beaver Valley IU 27	4,447	38	4,719	43	1,353	18	249	4	61	1	10,829	18
ARIN IU 28	4,930	41	5,272	48	625	11	106	2	831	12	11,764	20
Schuylkill IU 29	3,397	32	4,398	48	694	12	809	13	683	11	9,981	21
PA State Aggregate	370,851	45	349,913	44	102,029	14	25,051	7	35,372	7	883,216	21

Respondents by locale (statewide)

	TEACHERS		ADMINISTRATORS		SCHOOL TECHNOLOGY COORDINATORS		LEA TECHNOLOGY DIRECTORS	
	N	%	N	%	N	%	N	%
Urban	5,108	23%	282	25%	496	93%	15	94%
Suburban	17,193	31%	844	27%	1,162	89%	197	93%
Town	6,410	39%	350	36%	430	86%	91	92%
Rural	10,703	45%	434	31%	583	88%	159	91%
Charter School	554	12%	43	11%	40	31%	41	33%
CTC	645	30%	59	29%	49	67%	43	65%

Computers by locale (statewide)

TOTAL	HIGH CAPACITY COMPUTERS		MID CAPACITY COMPUTERS		LOW CAPACITY COMPUTERS	
	SUM	MEAN	SUM	MEAN	SUM	MEAN
Urban	82,239	49	67,721	38	53,393	33
Suburban	172,099	55	148,691	50	27,208	15
Town	45,871	39	47,056	42	7,897	11
Rural	61,054	40	75,866	52	11,168	12
Charter School	3,563	35	2,823	30	1,772	11
CTC	6,022	37	7,684	54	574	6

Computers by locale (statewide - con't)

TOTAL	THIN CLIENTS		NETBOOKS		TOTAL COMPUTERS	
	SUM	MEAN	SUM	MEAN	SUM	MEAN
Urban	1,086	1	1,639	1	206,078	21
Suburban	11,488	8	18,109	11	377,595	25
Town	5,240	8	5,142	7	111,206	19
Rural	6,595	8	8,149	10	162,832	22
Charter School	177	6	2,078	41	10,413	24
CTC	465	5	255	3	15,000	18

Glossary

High Capacity Computer	<ul style="list-style-type: none"> • 2 years old or newer • Contains a 10/100/1000mb network card and can run data intensive/graphic/video rendering applications such as CAD, web design, video production etc. <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>Designed for Windows 7 or Vista (PC)</i> • <i>Able to run Microsoft Office 2007 (PC)</i> • <i>Designed for Mac OS X v10.5 (Leopard) or OS X 10.6 (Snow Leopard)</i> • <i>Able to run Microsoft Office 2008 (Mac)</i>
Mid Capacity Computer	<ul style="list-style-type: none"> • 5 years old or newer • Contains a 10/100mb network card and can run integrated applications such as Microsoft Office Suite, etc. <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>Designed for Windows XP Service Pack 2 (SP2) or later</i> • <i>Able to run Microsoft Office XP and has the capability to upgrade to Microsoft Office 2007 (PC)</i> • <i>Designed for Mac OS X v10.3 (Panther) or OS X v10.4 (Tiger)</i> • <i>Able to run Microsoft Office 2004 and has the capability to upgrade to Microsoft Office 2008 (Mac)</i>
Low Capacity Computer	<ul style="list-style-type: none"> • Older than 5 years • Contains a 10mb or no network card and can run basic, stand-alone applications such as word processing, tutorial programs, etc. <p><i>Examples:</i></p> <ul style="list-style-type: none"> • <i>Designed for Windows XP Service Pack 1 (SP1) , Windows 2000 or older</i> • <i>Designed for Mac OS X v10.2 (Jaguar) or older</i>
1-1 Student Laptop Programs	<p>Some schools provide laptops for 1-1 student use. To be counted in this category, laptops must be assigned to individual students for multiple class use.</p> <ul style="list-style-type: none"> • DOES NOT include 1-1 student access to laptop computers that reside in a specific classroom. These are included under the classroom count. • DOES NOT include computers that are part of Classrooms for the Future (CFF) under this category. These are included under the classroom count.
21st Century Skills	<p>"21st Century Skills" are capabilities that have been predicted to be related to success in the future. These include: the ability to produce high-quality products; creativity; cultural literacy or global awareness; e-communication skills; higher order thinking; planning, prioritizing, and managing work; scientific literacy; self-direction; social or personal responsibility; teaming or collaboration skills; the use of real world technology tools; and visual literacy.</p>
Administrative offices	<p>Offices under this category include areas where administrative functions take place. Examples include areas that are non-instructional such as the main office, guidance office, attendance office, principal's office, health/nurse office, food service, technology office, athletic offices, transportation buildings, maintenance facilities, etc.</p>
Blogs	<p>Web logs or "blogs" are web-based diaries that are written to express personal points of view.</p>
Classroom	<p>A room that is used for instructional purposes.</p>

Differentiated learning	Differentiated learning is when assignments, materials and/or roles are matched to the needs or characteristics of individual students
Digital Citizenship	Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.
Digital learning objects	Digital learning objects, often referred to as "applets" as they are small computer-based applications, are short computer programs that focus on a particular skill, usually through interaction or simulation.
e-Readers/ Tablets	Devices that are not laptops or pocket sized, and are used primarily for reading, accessing multimedia content, and may have the option to access the Internet. Examples include: Kindle, Nook, iPad, etc Note that "Tablet PCs" containing touch screens along with a physical keyboard should be included.
Experiential learning	Experiential learning refers to learning through activity and experience as opposed to learning simply through reading and listening.
Formal online	Groups of people with a common interest who use digital communications media to learn together and share their experiences within a formal, predetermined structure.
Handheld devices	Mobile devices that are pocket-sized, typically having a display screen with touch input, miniature keyboard, or other user interface. <i>Examples include: PDAs (Palm Pilot, etc.) Audio/Video Devices (MP3 player, iPod, etc.) Other Wi-Fi accessible devices</i>
ILS	Integrated Learning Systems (ILS): Software systems that introduce students to content.
Informal online	Groups of people with a common interest who use digital communications media to learn together and share their experiences within an informal environment.
Information sources	The use of Web, ERIC, and EBSCO. Searching for these efficiently, for example, by using "and" / "or" to narrow/expand a search, and identifying synonyms or keywords
Instructional use	Instructional use includes Classrooms, Stationary Computer Labs, Mobile Computer Labs, Library Media Centers, and 1-1 Students Laptop Programs.
Interactive instruction	Interactive instruction includes debating, brainstorming, think/pair/share, jigsaw, problem solving, conferencing, etc.
Investigate concepts	e.g., through concept mapping, graphing, reading charts
LEA	Local Education Agency (LEA): A school district, charter school or career and technical center.
LEA-based WAN	An LEA-based WAN is defined as a building to building network that connects buildings within an LEA.
Learning objects	Small programs that allow students to explore very specific concepts, and simple flash animations that help students learn
Library/Media Center	This is a general resource area where students conduct research and/or receive instruction.
Mobile Computer Labs	This include mobile carts that consist of 16 or more computers and other digital tools that remain exclusively with the mobile lab.
Modeling software	Software that allows users to create functional conceptual models of content being studied. In STELLA, for example, a student might create a model for a food chain that would demonstrate the impact of introducing a new predator on other organisms.

Netbooks	Netbooks (sometimes also called mini notebooks or ultra-portables) are small, light, and inexpensive laptop computers suited for general computing and accessing web-based applications. Screen sizes are generally less than 10" diagonally. Computers that are classified as netbooks usually contain an Intel Atom processor or equivalent.
Online collaborative	Online projects that allow students and teacher to work collaboratively with others at remote sites that may be national or global in reference.
Peripheral device	Peripheral devices include, among other devices, digital cameras, probes, and scanners.
Personally owned	Personally owned refers to devices owned by the teacher or student that are brought into the classroom specifically for educational use. These devices: <ul style="list-style-type: none"> • May be connected to the school's network; • Are approved for use by school/district policy.
Real-world problems	Real-world problems involve situations, issues, and tasks that people actually tackle in the outside world.
Skill development	Skill development/Exercise type work: This work might include pages of math problems, writing a summary of a book just read, or answering a set of questions at the end of the chapter.
Stationary Computer Labs	A Room/Lab that is used for general computer use (NOT course specific).
Student developed	The student has created the task either independently or with facilitation/guidance from the teacher; also student defined.
Tablets	See e-Readers/Tablets.
Teacher developed	The teacher has created the task and students are told fairly explicitly what to do. This category could include: worksheets; essay questions; or PowerPoint presentations where the teacher gives the students a topic and outline; also teacher defined.
Technology literacy	Technology literacy is the ability to responsibly use real world technology tools appropriate to communicate, solve problems, and access, manage, integrate, evaluate, and create information to improve learning in all subject areas and to acquire lifelong knowledge and skills in the 21st century. Note that Technology Literacy is part of 21st Century Skills.
Thin Client	A thin client is client computer or client software in client-server architecture network which depends primarily on the central server for processing activities.
Virtual learning	Virtual learning occurs in online courses, BlackBoard access, or professional development offered through video-conferencing.
Virtual social	Virtual social sites include Facebook-style sites; character sites such as Second Life; etc.
Wired for Internet access	Infrastructure is in place for an Internet connected computer.
Wireless Internet access	Wireless signal is accessible from the room/lab.