North Carolina's Digital-Age Learning Initiative

Dashboards for Reporting and Strategic Planning

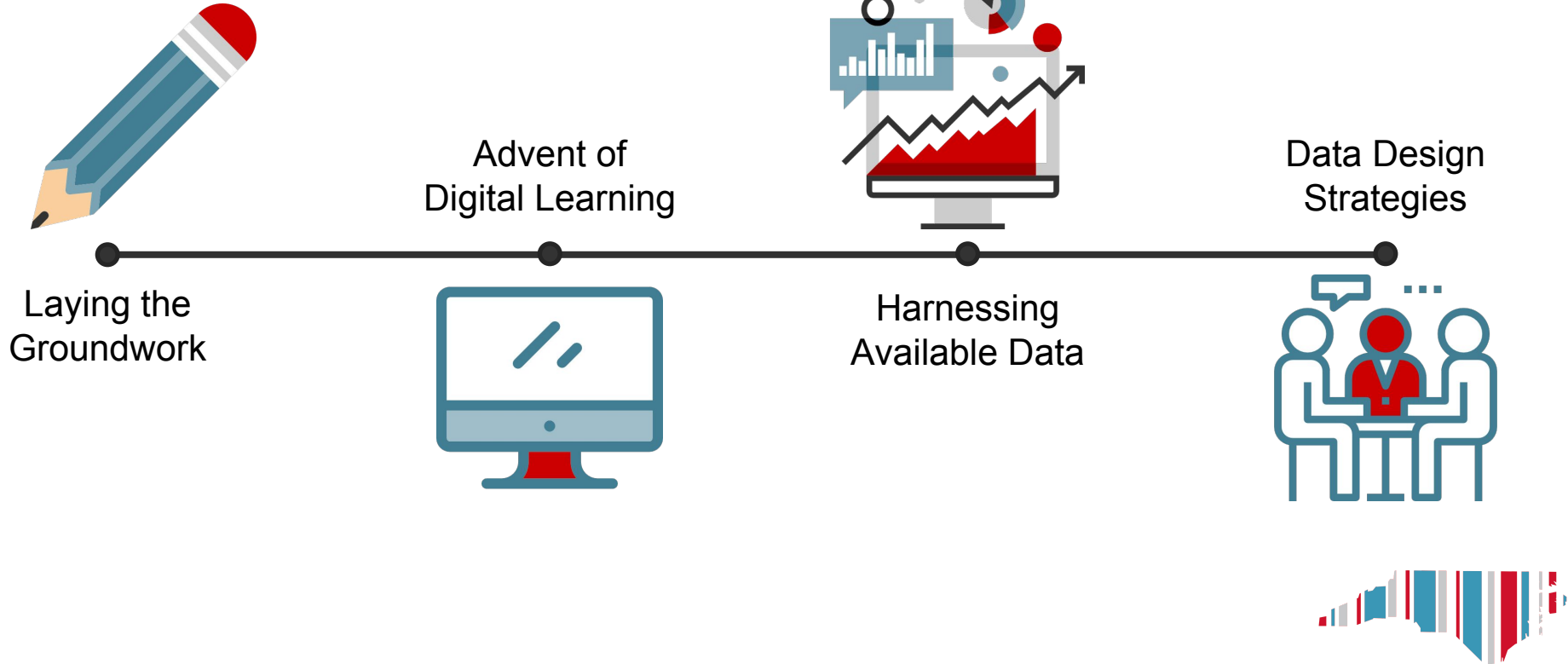**NC STATE**
College of Education

THE WILLIAM & IDA
FRIDAY INSTITUTE
FOR EDUCATIONAL INNOVATION

Public Schools of North Carolina
State Board of Education
Department of Public Instruction

Agenda

Laying the
Groundwork

Advent of
Digital Learning

Harnessing
Available Data

Data Design
Strategies

Laying the groundwork for digital learning in North Carolina

About SETDA

Mission: to build and increase the capacity of state and national leaders to improve education through technology policy and practice.

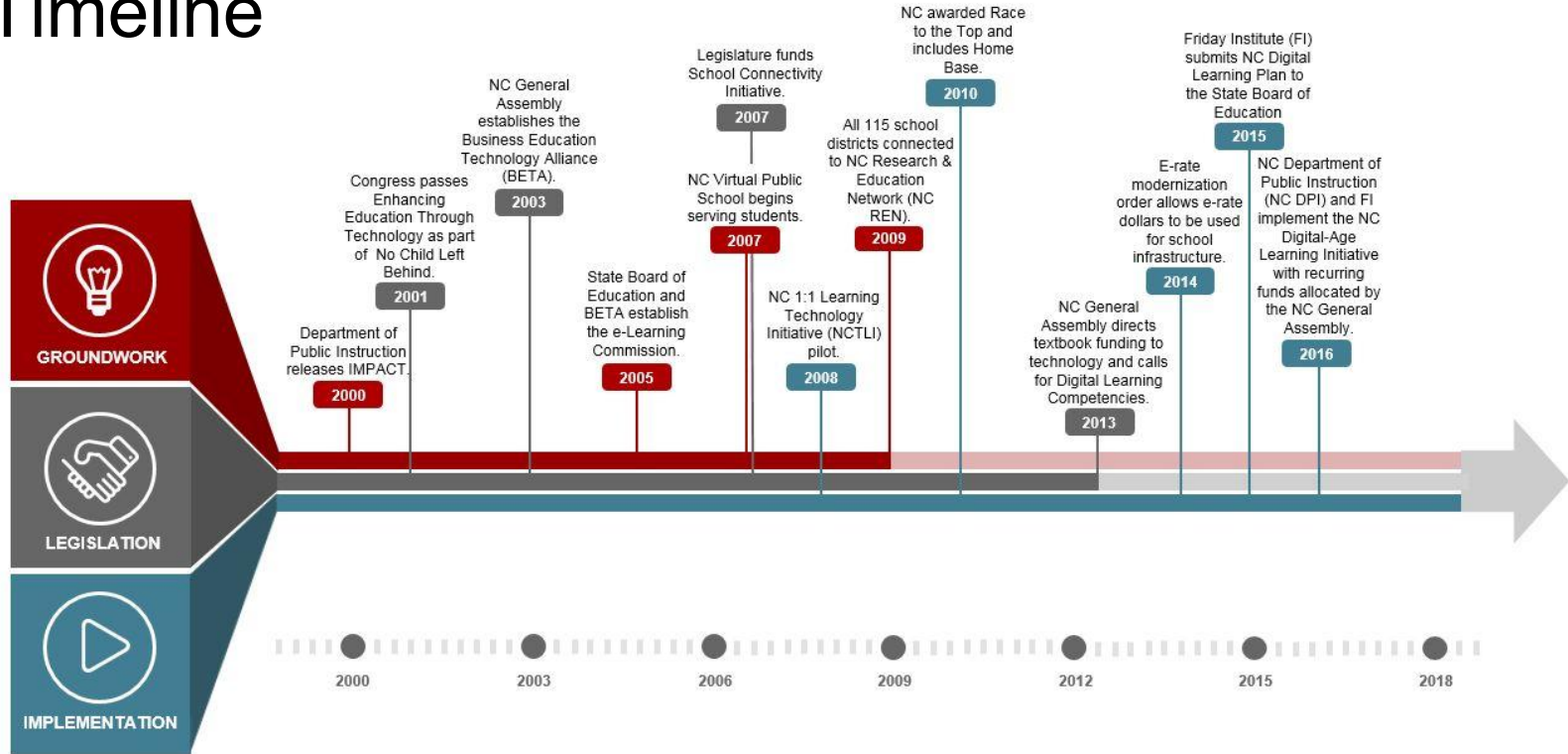- Advocacy for policy and practice
- Professional learning
- Inter-state collaboration
- Public-private partnerships
- State - federal relations

Timeline

GROUNDWORK

LEGISLATION

IMPLEMENTATION

Department of Public Instruction releases IMPACT.
2000

Congress passes Enhancing Education Through Technology as part of No Child Left Behind.
2001

NC General Assembly establishes the Business Education Technology Alliance (BETA).
2003

State Board of Education and BETA establish the e-Learning Commission.
2005

Legislature funds School Connectivity Initiative.
2007

NC Virtual Public School begins serving students.
2007

NC 1:1 Learning Technology Initiative (NCTLI) pilot.
2008

All 115 school districts connected to NC Research & Education Network (NC REN).
2009

NC awarded Race to the Top and includes Home Base.
2010

NC General Assembly directs textbook funding to technology and calls for Digital Learning Competencies.
2013

E-rate modernization order allows e-rate dollars to be used for school infrastructure.
2014

Friday Institute (FI) submits NC Digital Learning Plan to the State Board of Education
2015

NC Department of Public Instruction (NC DPI) and FI implement the NC Digital-Age Learning Initiative with recurring funds allocated by the NC General Assembly.
2016

2000   2003   2006   2009   2012   2015   2018

The Digital Learning Plan and Digital-Age Learning Initiative

Digital Learning Legislation

S.L. 2016-94 §8.23
S.L. 2017-57 §7.23

- State Board of Education (SBE) + NC DPI + FI
- To continue implementing the Digital Learning Plan in NC public schools.

Digital Learning Plan Directive Details

HUMAN CAPACITY

CONTENT, INSTRUCTION AND ASSESSMENT

TECHNOLOGY INFRASTRUCTURE AND DEVICES

POLICY AND FUNDING

REGIONAL AND STATE SUPPORT SYSTEMS

NCDLI Brief

Projected Expenditures

Budget Categories	July 2017 - June 2018
1) Enhanced Professional Learning	$2.0M
2) Digital Content Strategy	$2.6M
3) Home Base Roadmap/Portal	$600K
4) Systemic Data Approach	$1.2M
5) New: District Grants & Digital Resources	$2.2M
TOTAL	$8.6M*

*$6.4M (R) for biennium + $2.2M carryover for IT Projects

Harnessing Available Data

Available Digital Learning Data

- [NC Digital Learning Progress Rubric](#)
- [NC Digital Learning & Media Inventory (DLMI)](#)
- [NC Teaching Working Conditions (TWC) Survey](#)
- Vendor Data

Rubric Development Timeline

Rubric for Districts (Version 1) released

2015

2014

115 Districts, 120 charter schools complete Rubric

Rubric for Districts edited, Version 2 released

Rubric for Schools released

2016

2017

Rubric for Charters released

SBE requests 115 Districts, 173 charters complete Rubric

2018
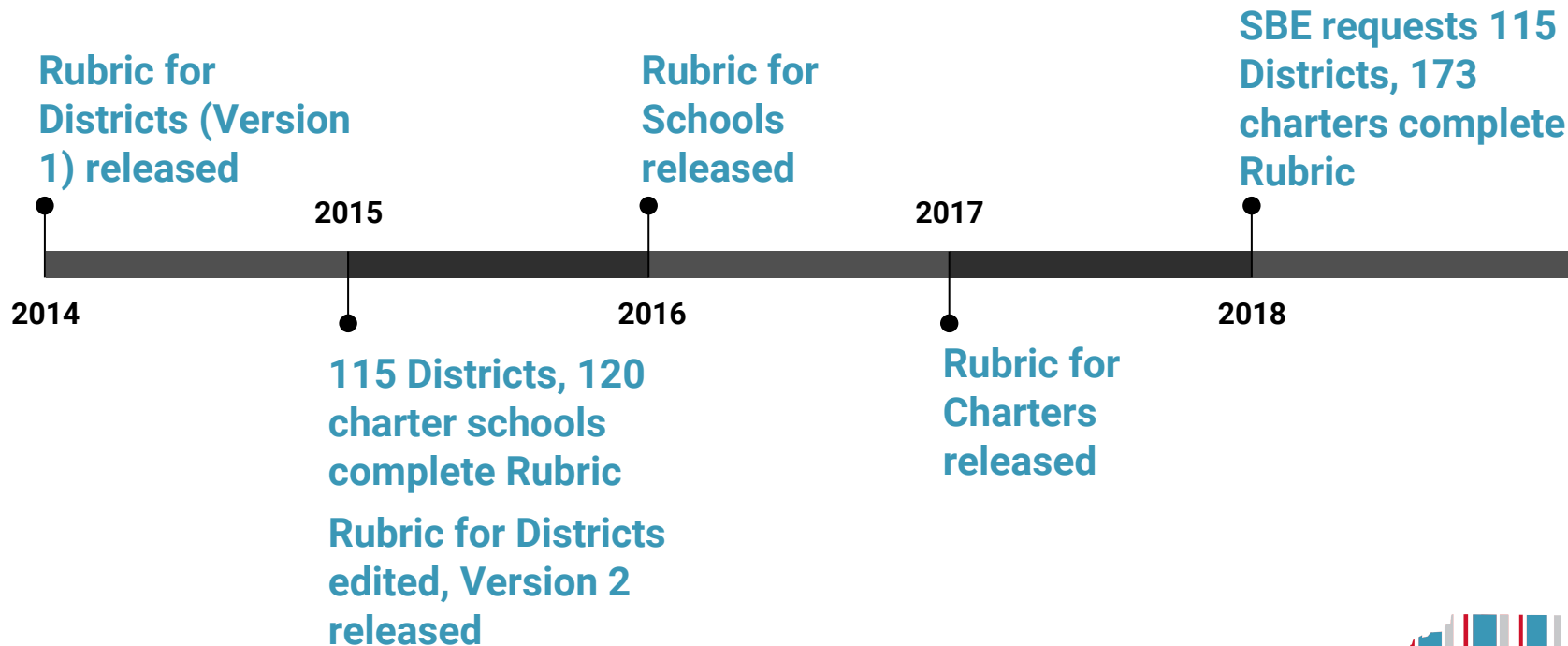
Rubrics are based on information from ...

The following resources:
- Christensen Institute
- International Society for Technology in Education (ISTE) Standards
- NC Department of Public Instruction Standards
- NC IMPACT Model
- NC Learning Technology Initiative
- Partnership for 21st Century Learning
- Texas Education Agency

Expertise from:
- The NC Department of Public Instruction
- The Friday Institute
- 12+ NC Local Education Agencies (districts)

Student Learning

Leadership
- L1 Shared Vision
- L2 Personnel
- L3 Communication & Collaboration
- L4 Sustainability
- L5 Policy
- L6 Continuous Improvement
- L7 Procurement

Professional Learning
- P1 Focus
- P2 Format
- P3 Participation

Content and Instruction
- C1 Educator Role
- C2 Student-Centered Learning
- C3 Access to Digital Content
- C4 Learning Management System
- C5 Curation & Development
- C6 Data-Driven Instruction

Data and Assessment
- D1 Data Systems
- D2 Learner Profiles
- D3 Multiple & Varied Assessments

Technology Infrastructure and Devices
- T1 School Networks
- T2 End-User Devices
- T3 Learning Environments
- T4 Technical Support
- T5 Supporting Services
- T6 Outside of School
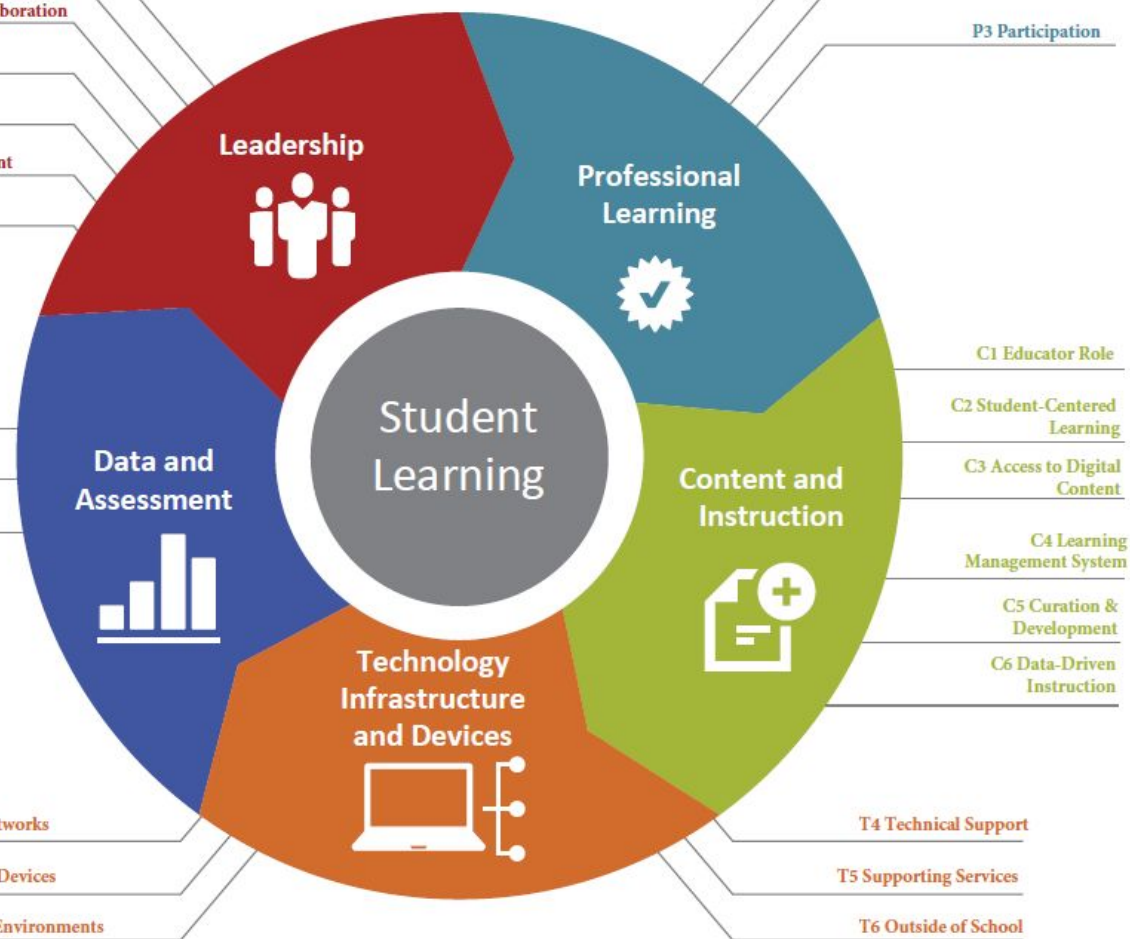
NC Digital Learning Progress Rubric

LEADERSHIP — L1 Shared Vision

	Early	Developing	Advanced	Target
L1 Shared Vision	☐ A school leadership team is being created for the purposes of planning and leading digital teaching and learning. ☐ A vision for digital teaching and learning has not yet been created. ☐ A planned effort to discuss the eventual vision for digital teaching and learning with faculty, staff, and other stakeholders has not been put in place. ☐ There is no consistent effort to have school leaders consistently communicate about digital teaching and learning practices. ☐ *Administrators do not focus on achieving* the "NC Digital Learning Competencies for Administrators."	☐ A school leadership team, consisting of a *few* individuals, collaboratively crafts the vision for digital teaching and learning. ☐ A vision for digital teaching and learning *guides school digital education activities.* ☐ School leadership *annually* promote the vision for digital teaching and learning *to faculty and staff.* ☐ School leaders communicate about *digital teaching and learning practices, but do not model effective use of digital resources.* ☐ *Some administrators demonstrate the experienced level of achievement regarding the* "NC Digital Learning Competencies for Administrators."	☐ A school leadership team, consisting of *many* individuals, collaboratively crafts the vision, goals, and strategies for digital teaching and learning. ☐ *The vision, goals, and strategies for digital teaching and learning exist as a self-contained initiative.* ☐ School leadership *occasionally* promote the vision for digital teaching and learning *to all stakeholders, including faculty, staff, students, parents, and community members.* ☐ School leaders serve *as lead learners for digital teaching and learning practices, modeling effective use of high quality digital resources.* ☐ *Most administrators demonstrate the experienced level of achievement regarding the* "NC Digital Learning Competencies for Administrators."	☐ A *diverse, representative* school leadership team, *consisting of school administrators, teachers, students, parents, and community members,* collaboratively crafts the vision, goals, and strategies for digital teaching and learning. ☐ The vision, goals, and strategies for digital teaching and learning *are integrated as core components of the school's School Improvement Plan and other high-level guiding frameworks.* ☐ School leaders *consistently* promote the vision for digital teaching and learning *to all stakeholders, including faculty, staff, students, parents, and community members.* ☐ *School leaders serve as lead learners for digital teaching and learning practices, modeling effective use of high quality digital resources.* ☐ *Most administrators demonstrate mastery* with the "NC Digital Learning Competencies for Administrators."
Evidence, Comments				

LEADERSHIP — L2 Personnel

	Early	Developing	Advanced	Target
L2 Personnel	☐ The school requires teacher leaders and other faculty to lead, learn, and share together about digital teaching and learning in meetings before or after school. ☐ The school does not yet make digital teaching and learning skills a requirement or priority for any teaching position. ☐ The school does not yet identify teacher-leaders for digital teaching and learning.	☐ The school has *at least one part-time instructional coach for technology or at least one full-time certified school library media coordinator.* ☐ The school recruits, hires, and develops *a few* teachers on their faculty to have high quality digital teaching and learning skills. ☐ The school has *informal pathways to identify current teacher-leaders* for digital teaching and learning.	☐ The school has *at least one full-time instructional coach for technology and at least one full-time certified school library media coordinator.* ☐ The school recruits, hires, and develops *many* teachers on their faculty to have high quality digital teaching and learning skills. ☐ The school has *informal pathways to identify and develop current and future teacher-leaders* for digital teaching and learning.	☐ The school has *at least one full-time instructional technology facilitator and at least one full-time certified school library media coordinator.* ☐ The school recruits, hires, and develops *all* teachers on their faculty to have high quality digital teaching and learning skills. ☐ The school has *formal pathways to identify and develop current and future teacher-leaders* for digital teaching and learning.
Evidence, Comments				

Versions of the Rubric

For Districts

(Version 2.0, Revised February 2016)

For Schools

(Pilot Version 1.0, Revised September 2016)

For Charters

(Pilot Version 1.0, Revised March 2017)

Intended & Amended Rubric Purpose

Composite Rubric Score Range (May 2015)	Proportion	
	LEAs (N=115)	Charter Schools (N=120)
1.0 - 1.9 (Early)	20%	16%
2.0 - 2.9 (Developing)	74%	67%
3.0 - 3.9 (Advanced)	6%	16%
4.0 (Target)	0	1%

Note: "Rubric score" is the average of every key element score (there are 25 key elements total). The rubric is scored on a 4-point scale: "early" (1-1.9); "developing" (2-2.9); "advanced" (3-3.9); and "target" (4). All data is self-reported.

Digital Learning & Media Inventory (DLMI)

DLMI Features

- Aligned to the NC Digital Learning Progress Rubrics

- Built-in customizable reports

- District / charter profile reports

DLMI: District Profile

DLMI: Public Reporting

Teacher Working Conditions (TWC)

- Audience: **Teachers**
- Purpose: **Continuous School Improvement**
- Administered: **Bi-annually**
- Response rate: **80-90%**
- Components:

  - **Time**
  - **Facilities and Resources**
  - **Community Support and Involvement**
  - **Managing Student Conduct**

  - **Teacher Leadership**
  - **School Leadership**
  - **Professional Development**
  - **Instructional Practices**

TWC Items Related to Digital Learning

- Teachers have sufficient access to digital content and resources.
- Teachers have sufficient access to instructional technology, including computers, devices, printers, software, and internet access.
- The reliability and speed of Internet connections in this school are sufficient to support instructional practices.
- The school leadership facilitates using data to improve student learning.
- Teachers have sufficient training to fully utilize instructional technology.

- Do you need professional development on integrating technology into instruction?

Q3.1 **Please rate how strongly you agree or disagree with the following statemer school facilities and resources.**

a. Teachers have sufficient access to appropriate instructional materials.	75.4%
b. Teachers have sufficient access to digital content and resources.	84.9%
c. Teachers have sufficient access to instructional technology, including computers, devices, printers, software and internet access.	79.7%
d. Teachers have access to reliable communication technology, including phones, faxes and email.	91.6%

Vendor Data - Home Base Applications
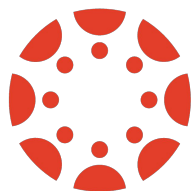
Data Design Strategies

Purpose of Systematic Data Team

Provide feedback to the NCDPI-FI Digital Learning Plan team **on** the priorities, tasks, and timeline for **Data Collection, Management, and Automation work**, **including how and which data sources**, such as the NC Digital Learning Progress Rubric and the NC Digital Learning & Media Inventory (DLMI) **are displayed and used** for the NC Digital Learning Data Dashboard and other public-facing data integration display tools.

Data Design Best Practices

Lessons Learned

- Audience

- Purpose

- Stakeholders + Champions

___

Who is your audience?

Audiences for Data Products

	Legislator/Statewide Decision-maker	District or Charter Leader/Decision-maker
Legislative Dashboard	✓	
DLMI Reporting		✓
DLMI Profiles		✓
Vendor Data Dashboards		✓
Rubric Dashboard		✓

What is the purpose of your visualization?

DALI Data Products and Functions

	Internal	External
Curated	(Future) Vendor Dashboards	DLI Legislative Dashboard DLI Rubric Dashboard
Not Curated	DLMI Profiles	DLMI Reporting Tool

Who can provide feedback and champion your work when you are ready to share?
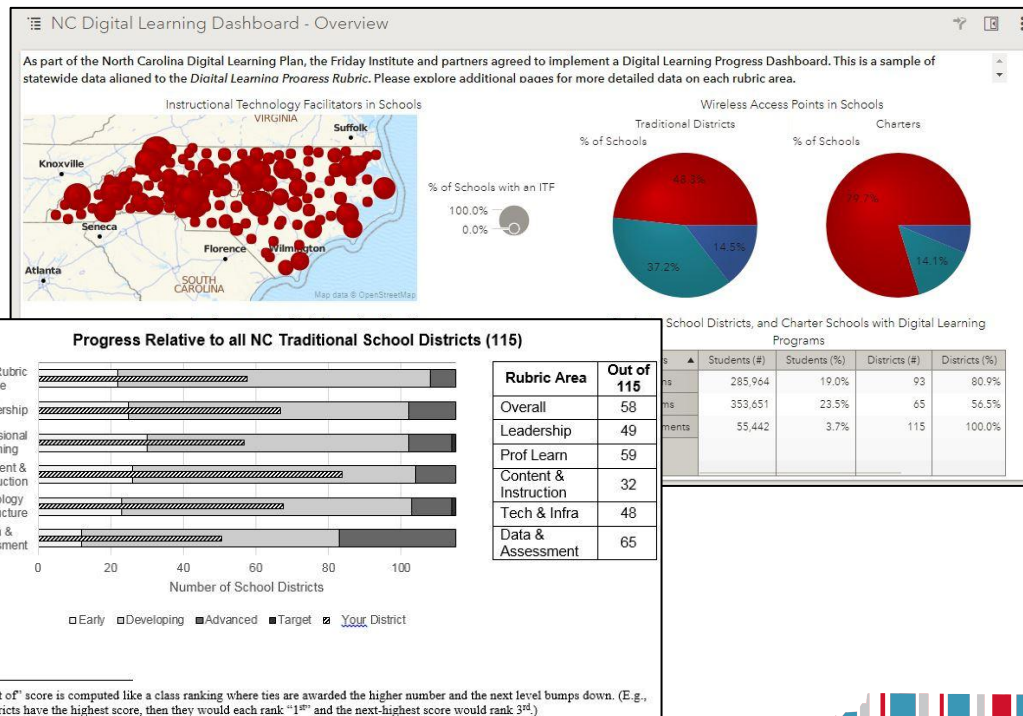
Evolution of Data Sharing

2015 **Static Reports**
Digital Learning Dashboard v1

2016 Digital Learning Dashboard v2
Connectivity Dashboard

2017 Legislative Dashboard
Vendor Data Dashboards

Static Reports

- Audience: **District Leaders and Teams**
- Purpose: **Provide data aligned to Digital Learning Progress Rubric to aid in decision-making**
- Components:

  - **District rubric data comparisons**
  - **Rubric + TWC fact sheets**
  - **Data Interpretation Guides**

District Rubric Data Comparisons

Progress Relative to all NC Traditional School Districts (115)
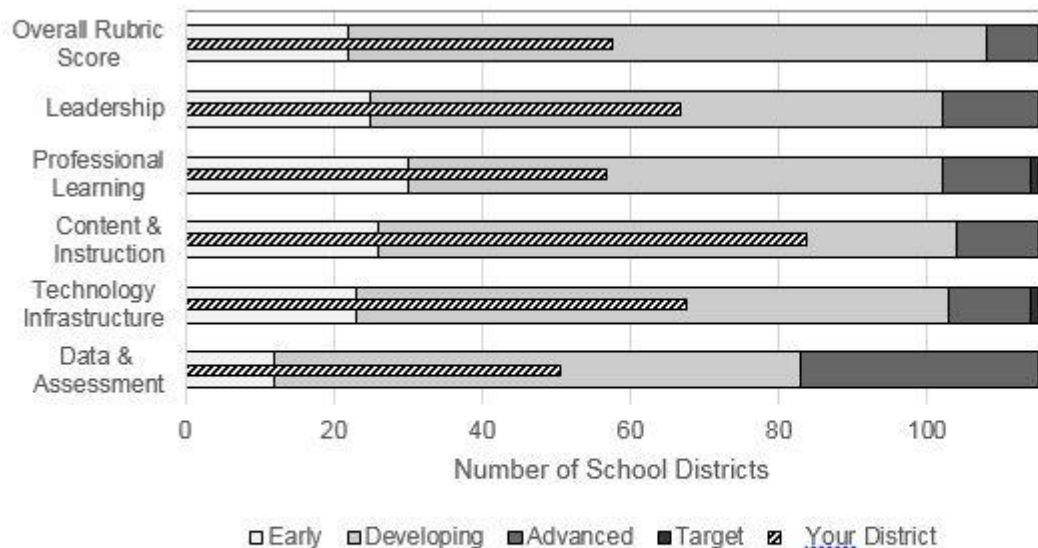
Rubric Area	Out of 115
Overall	58
Leadership	49
Prof Learn	59
Content & Instruction	32
Tech & Infra	48
Data & Assessment	65

[1] The "Out of" score is computed like a class ranking where ties are awarded the higher number and the next level bumps down. (E.g., if two districts have the highest score, then they would each rank "1st" and the next-highest score would rank 3rd.)

Rubric + TWC fact sheets
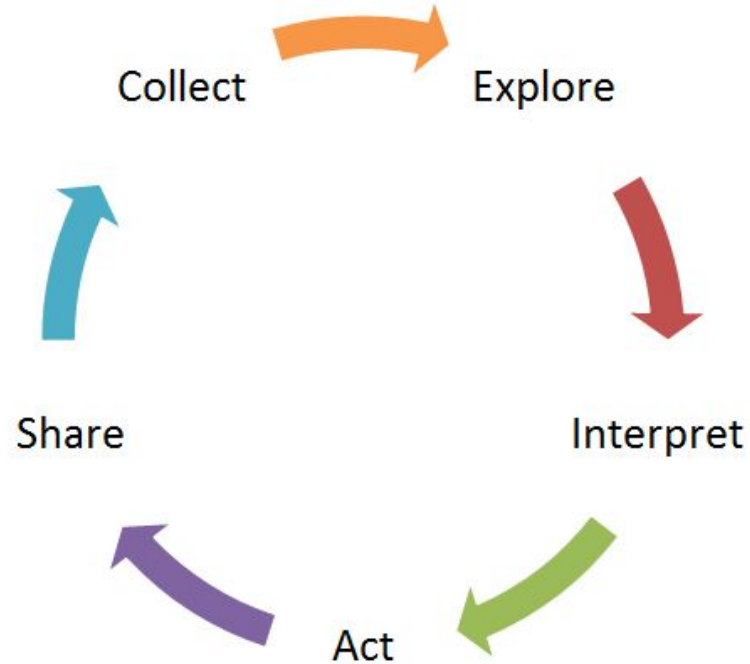
2015 Digital Learning Progress Rubric - District	
Overall Leadership Score (average of L1-L7):	Developing
L1: Shared Vision	Developing
L2: Personnel	Developing
L3: Communication and Collaboration	Advanced
L4: Community Engagement	Developing
L5: Sustainability	Developing
L6: Policy	Advanced
L7: Continuous Improvement	Developing

2014 Teacher Working Conditions Survey	
"Regarding school leadership in your school: The faculty and staff have a shared vision."	89% of respondents agree/strongly agree
"Teachers have sufficient access to a broad range of professional support personnel."	92% of respondents agree/strongly agree
"This school maintains clear, two-way communication with the community."	91% of respondents agree/strongly agree
"Teachers provide parents/guardians with useful information about student learning."	96% of respondents agree/strongly agree

Data Interpretation Guides

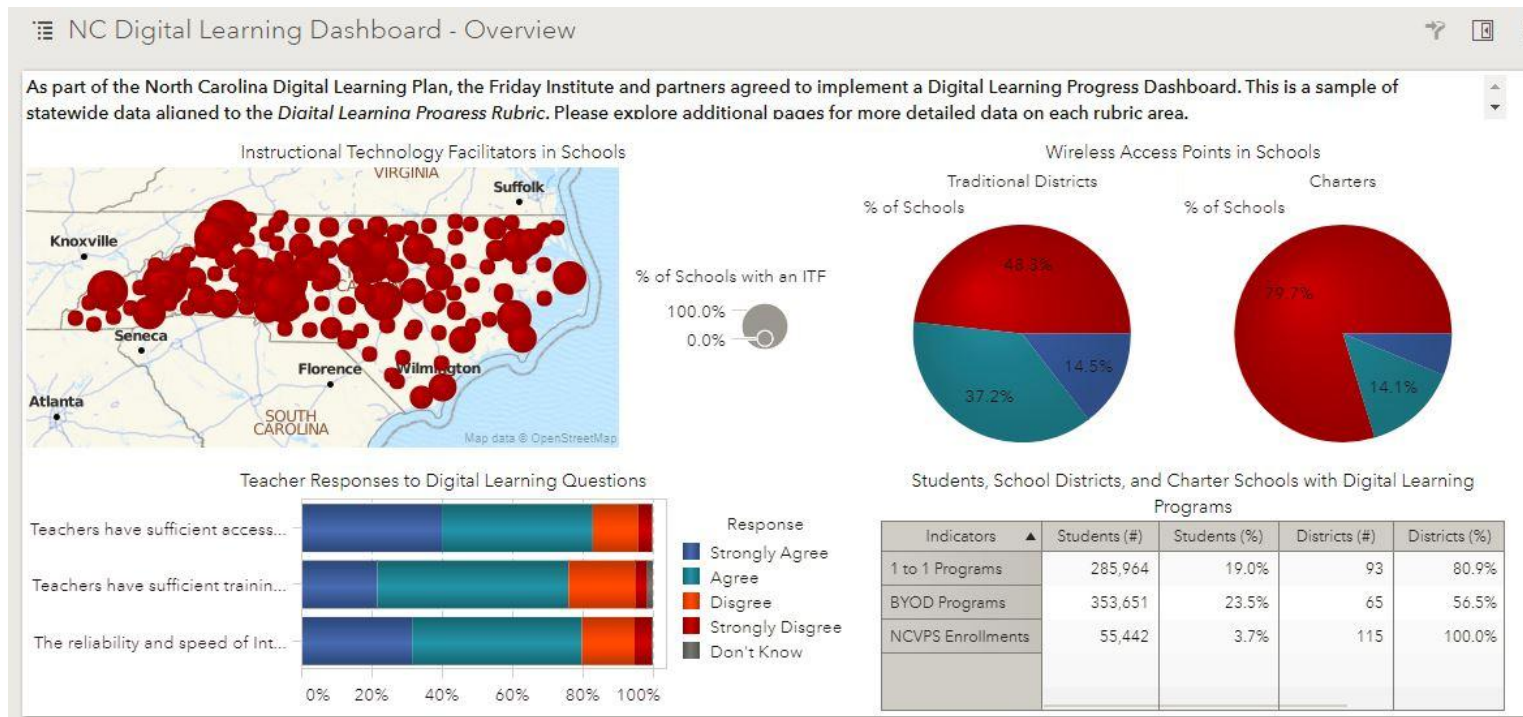# Digital Learning Dashboard V1

- Audience: **Policymakers & Lawmakers**
- Purpose: **Provide data aligned to Digital Learning Progress Rubric**
- Components:

  - **Overview**
  - **Leadership**
  - **Professional Learning**
  - **Content and Instruction**

  - **Data and Assessment**
  - **Technology Infrastructure and Devices**

Digital Learning Data Dashboard V1

Digital Learning Dashboard V1
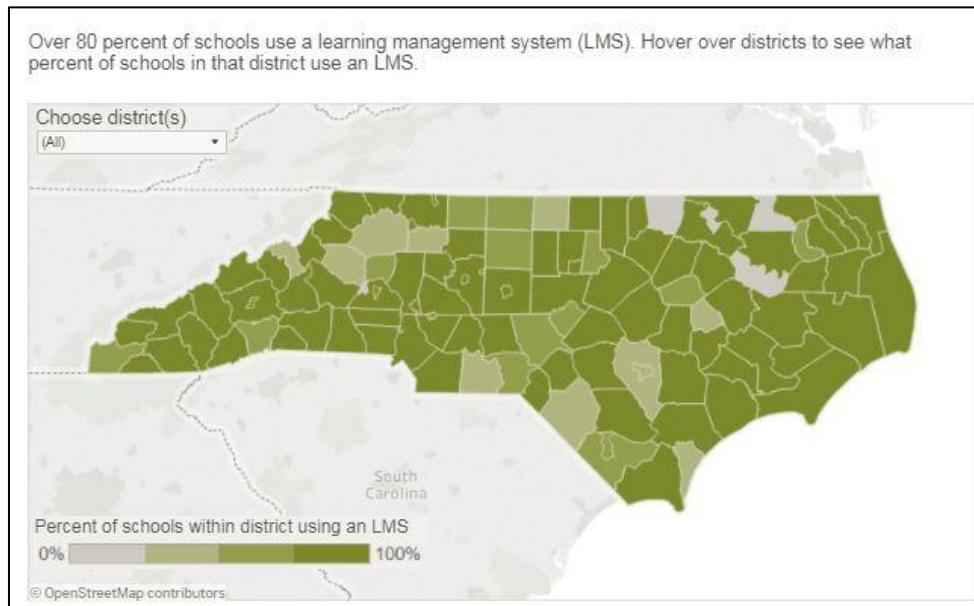
Evolution of Data Sharing

2015   **Digital Learning Dashboard v1**
Static Reports

2016   **Digital Learning Dashboard v2**

2017   Legislative Dashboard
Vendor Data Dashboards

Over 80 percent of schools use a learning management system (LMS). Hover over districts to see what percent of schools in that district use an LMS.

Choose district(s)
(All)

Percent of schools within district using an LMS
0%   100%

© OpenStreetMap contributors

South Carolina

Digital Learning Dashboard V2

- Audience: **Policymakers & Lawmakers**
- Purpose: **Provide data aligned to Funding Priorities**
- Components:

  - **Professional Learning Programs**
  - **Digital Content Purchasing and Sharing**
  - **Updating State Policies**

  - **Infrastructure Maintenance and Support**
  - **Continuous Improvement**

Digital Learning Data Dashboard V2

Digital Learning Dashboard V2

Manage statewide cooperative purchasing of content, including statewide shared resources for teachers to use for lesson planning and formative student assessments.

→ Funding Priority

To date, no direct data on cooperative purchasing of content is available. The data points below provide insights on how schools and districts access and support digital content. Four-fifths of schools use a learning management system and nearly all obtain digital content from NCVPS and community colleges. Nearly all school districts use either locally created or purchased digital content. The majority use partner resources, online course material, and open educational resources.
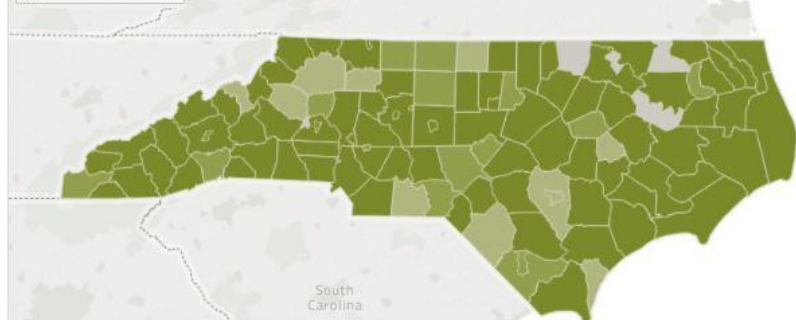
→ Summary

Over 80 percent of schools use a learning management system (LMS). Hover over districts to see what percent of schools in that district use an LMS.

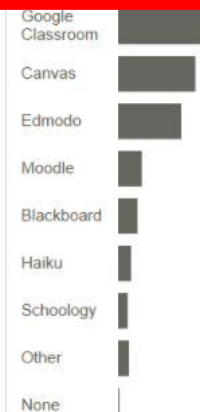Schools use various LMS brands and 2/3 of schools use multiple.

→ Visualization, explained

Choose district(s)
(All)

Google Classroom
Canvas
Edmodo
Moodle
Blackboard
Haiku
Schoology
Other
None

South Carolina

Percent of schools within district using an LMS
0%   100%
© OpenStreetMap contributors

→ Visualization of state-/ district-level data: bar charts, line graphs, maps, etc.

Evolution of Data Sharing

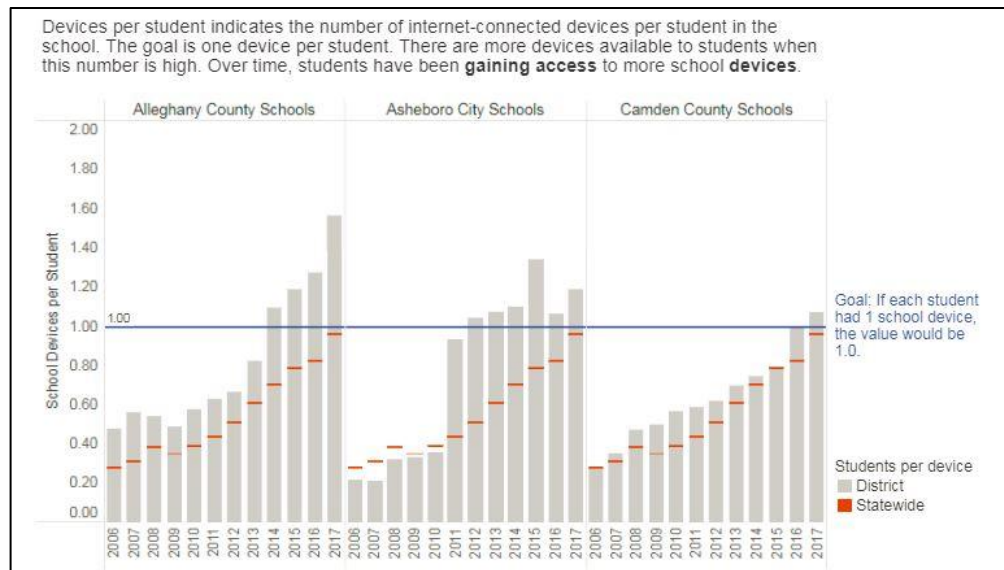**2015** — **Digital Learning Dashboard v1**
Static Reports

2016 — **Digital Learning Dashboard v2**
Connectivity Dashboard

2017 — **Legislative Dashboard**
Data Collection

Devices per student indicates the number of internet-connected devices per student in the school. The goal is one device per student. There are more devices available to students when this number is high. Over time, students have been **gaining access** to more school **devices**.

Goal: If each student had 1 school device, the value would be 1.0.

Students per device
District
Statewide

Legislative Dashboard

- Audience: **Policymakers & Lawmakers**
- Purpose: **Provide data about digital learning**
- Components:

  - **Devices Trends**
  - **Devices**
  - **Content**
  - **School Internet**

  - **Personnel**
  - **Professional Development**
  - **Funding**

Legislative Dashboard

Simple Navigation

Legislative Dashboard

Select an Area to Explore:

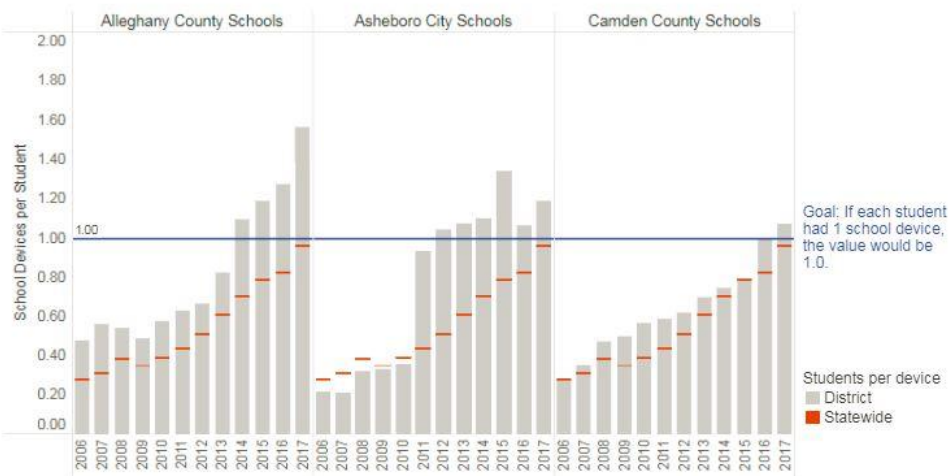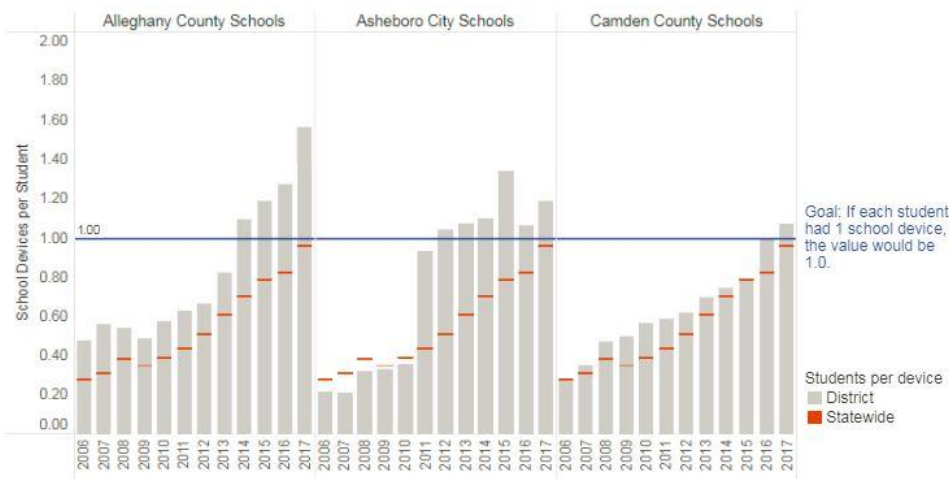| Devices Trends | Devices | Content | School Internet | Personnel | Professional Development | Funding |

Include up to Three Districts:

| Asheboro City Schools ▼ | Alleghany County Schools ▼ | Camden County Schools ▼ |

→ 3-district view

Devices per student indicates the number of internet-connected devices per student in the school. The goal is one device per student. There are more devices available to students when this number is high. Over time, students have been **gaining access** to more school **devices**.

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Students per device
- District
- Statewide

Legislative Dashboard

Select an Area to Explore:

| Devices Trends | Devices | Content | School Internet | Personnel | Professional Development | Funding |

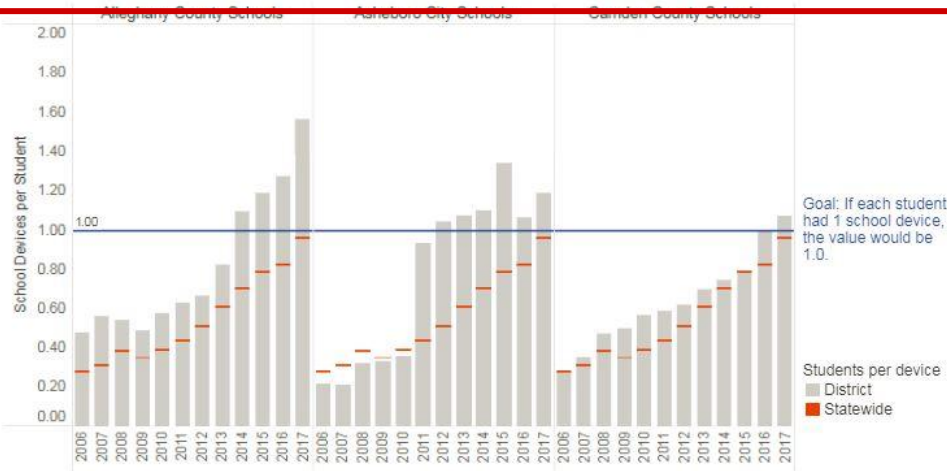Include up to Three Districts:

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Devices per student indicates the number of internet-connected devices per student in the school. The goal is one device per student. There are more devices available to students when this number is high. Over time, students have been **gaining access** to more school **devices**.

→ Description of statewide data

Legislative Dashboard

Select an Area to Explore:

Devices Trends | Devices | Content | School Internet | Personnel | Professional Development | Funding

Include up to Three Districts:

Asheboro City Schools ▼ | Alleghany County Schools ▼ | Camden County Schools ▼

Devices per student indicates the number of internet-connected devices per student in the school. The goal is one device per student. There are more devices available to students when this number is high. Over time, students have been **gaining access** to more school **devices**.
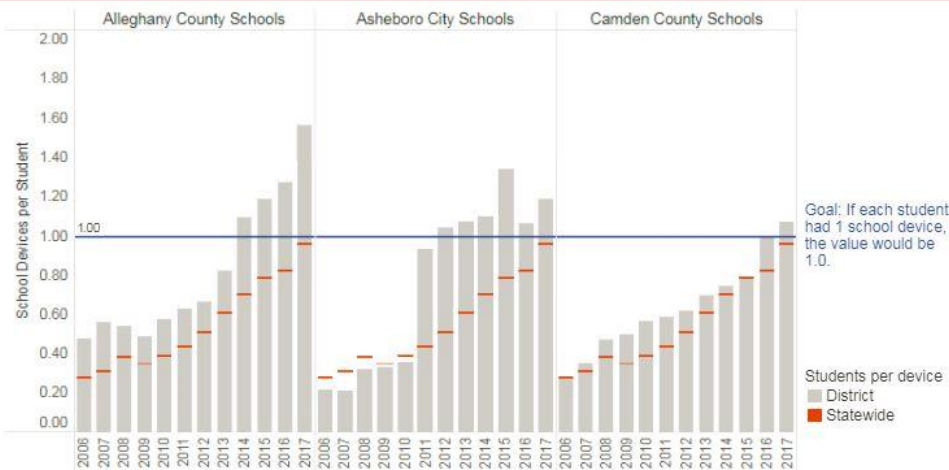
In each visualization, statewide data is **orange**, and benchmarks are **dark blue**.

Legislative Dashboard

Select an Area to Explore:

Devices Trends | **Devices** | Content | School Internet | Personnel | Professional Development | Funding
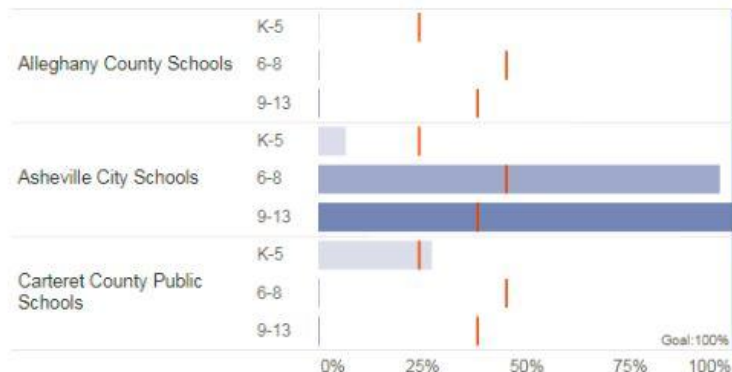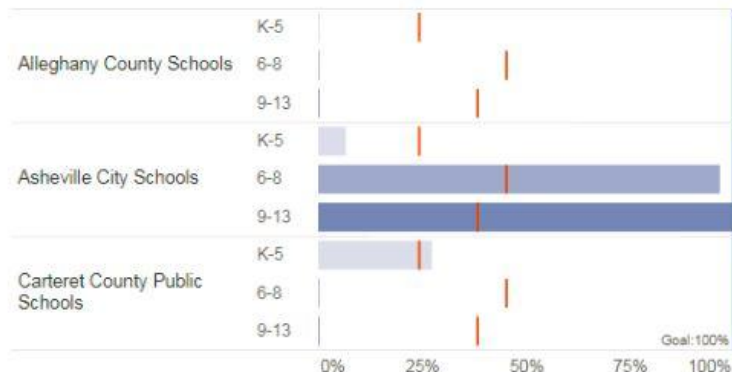
Include up to Three Districts:

Alleghany County Schools ▼	Carteret County Public Schools ▼	Asheville City Schools ▼

Statewide 24% of elementary, 45% of middle, and 38% of high school students are issued **personal devices** by the school.

Does your district plan to implement or expand student-issued device programs in the next calendar year? 32% of districts responded "yes".

Alleghany County Schools	✕
Asheville City Schools	✕
Carteret County Public Schools	✓

Legislative Dashboard

Forthcoming Dashboards

- Dashboard: **Digital Learning Dashboard V3**
- Audience: **District-level educators**
- Purpose: **Provide data about digital learning aligned to the Digital Learning Progress Rubrics**
- Components: **TBD, will likely pull from DL Dashboard V2**

- Dashboard: **Vendor Data Dashboard**
- Audience: **District- and school-level educators - for internal use only**
- Purpose: **Provide data about use of paid products**
- Components: **TBD**

Forthcoming Dashboards

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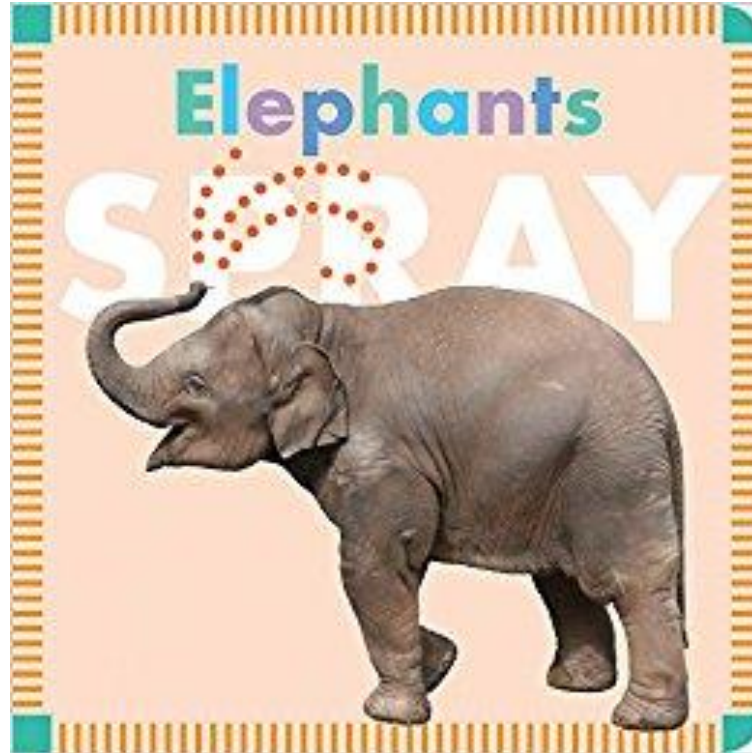- Purpose: **Provide data about use of paid products**
- Components: **TBD**

Is your message clear?

Is your message clear?

Big Animal Pictures

Thank you!

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