North Carolina's Digital-Age Learning Initiative

Dashboards for Reporting and Strategic Planning
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.
Timeline

- Congress passes Enhancing Education Through Technology as part of No Child Left Behind, 2001
- Department of Public Instruction releases IMPACT, 2006
- NC General Assembly establishes the Business Education Technology Alliance (BETA), 2003
- NC Virtual Public School begins serving students, 2007
- State Board of Education and BETA establish the e-Learning Commission, 2005
- Legislation funds School Connectivity Initiative, 2007
- All 115 school districts connected to NC Research & Education Network (NC REN), 2009
- NC awarded Race to the Top and Includes Home Base, 2010
- 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
- NC General Assembly directs textbook funding to technology and calls for Digital Learning Competencies, 2011
The Digital Learning Plan and Digital-Age Learning Initiative
Digital Learning Legislation

- 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

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

*$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

- **2014**: Rubric for Districts (Version 1) released
- **2015**: Rubric for Schools released
- **2016**: 115 Districts, 120 charter schools complete Rubric
- **2017**: Rubric for Charters released
- **2018**: SBE requests 115 Districts, 173 charters complete Rubric

Rubric for Districts edited, Version 2 released
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)
**NC Digital Learning Progress Rubric**

### LEADERSHIP

<table>
<thead>
<tr>
<th>Early</th>
<th>Developing</th>
<th>Advanced</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

### Early Personnel

<table>
<thead>
<tr>
<th>Early</th>
<th>Developing</th>
<th>Advanced</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Evidence Comments

<table>
<thead>
<tr>
<th>Early</th>
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<th>Target</th>
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</thead>
<tbody>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

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

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.
### End-Users Devices

- **207. In which grade(s) do(es) your school provide a school issued device to every student?**
  - PK 1 2 3 4 5 6 7 8 9 10 11 12 13
  - None

  - Please check if students take devices home.
    - PK 1 2 3 4 5 6 7 8 9 10 11 12 13

- **How do you insure student devices?**
  - Self insured by district
  - District buys insurance policy
  - District offers optional insurance policy to parents
  - Other (Please Specify)

### 208. Indicate the number of student laptops/desks'topes for each of the following operating systems:

<table>
<thead>
<tr>
<th>Devices with Screen Sizes &lt; 9.5&quot;</th>
<th>-Chrome OS</th>
<th>-Linux</th>
<th>-Mac OS &lt; 10.7</th>
<th>-Mac OS 10.7 or &gt;</th>
<th>-Windows XP</th>
<th>-Windows Vista</th>
<th>-Windows 7</th>
<th>-Windows 8</th>
<th>-Windows 10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Devices with Screen Sizes &gt;= 9.5&quot;</td>
<td>0</td>
<td>0</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>46</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many of the above devices are issued to individual students</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Devices that go home</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>
DLMI Features

- Aligned to the NC Digital Learning Progress Rubrics
- Built-in customizable reports
- District / charter profile reports
### DLMI: Public Reporting

#### LEA Type: LEA

<table>
<thead>
<tr>
<th>LEA Code</th>
<th>LEA Name</th>
<th>Average Daily Membership Range</th>
<th>Economically Disadvantaged Range</th>
<th>Number Of Schools</th>
<th>LMS Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>010</td>
<td>Alamance-Burlington Schools</td>
<td>20000-40000</td>
<td>Between 60% and 65%</td>
<td>36</td>
<td>Y</td>
</tr>
<tr>
<td>010</td>
<td>Alamance-Burlington Schools</td>
<td>20000-40000</td>
<td>Between 60% and 65%</td>
<td>36</td>
<td>Y</td>
</tr>
<tr>
<td>020</td>
<td>Alexander County Schools</td>
<td>0-5000</td>
<td>Between 50% and 55%</td>
<td>11</td>
<td>Y</td>
</tr>
<tr>
<td>020</td>
<td>Alexander County Schools</td>
<td>0-5000</td>
<td>Between 50% and 55%</td>
<td>11</td>
<td>Y</td>
</tr>
<tr>
<td>020</td>
<td>Alexander County Schools</td>
<td>0-5000</td>
<td>Between 50% and 55%</td>
<td>11</td>
<td>Y</td>
</tr>
<tr>
<td>030</td>
<td>Alleghany County Schools</td>
<td>0-5000</td>
<td>Between 50% and 55%</td>
<td>4</td>
<td>Y</td>
</tr>
<tr>
<td>040</td>
<td>Anson County Schools</td>
<td>0-5000</td>
<td>Between 80% and 85%</td>
<td>11</td>
<td>Y</td>
</tr>
<tr>
<td>040</td>
<td>Anson County Schools</td>
<td>0-5000</td>
<td>Between 80% and 85%</td>
<td>11</td>
<td>Y</td>
</tr>
<tr>
<td>050</td>
<td>Ashe County Schools</td>
<td>0-5000</td>
<td>Between 60% and 65%</td>
<td>5</td>
<td>Y</td>
</tr>
</tbody>
</table>

- **Canvas**: 90
- **Google Classroom**: 80
- **Edmodo**: 70
- **Moodle**: 60
- **Haiku**: 50
- **Schoolology**: 40
- **Other**: 30
- **0.00**: 20
- **Blackboard**: 10
- **We do not use an LMS**: 0
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

#TakeTheSurvey2018
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?

<table>
<thead>
<tr>
<th>Q3.1</th>
<th>Please rate how strongly you agree or disagree with the following statement.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Teachers have sufficient access to appropriate instructional materials.</td>
</tr>
<tr>
<td></td>
<td>75.4%</td>
</tr>
<tr>
<td>b.</td>
<td>Teachers have sufficient access to digital content and resources.</td>
</tr>
<tr>
<td></td>
<td>84.9%</td>
</tr>
<tr>
<td>c.</td>
<td>Teachers have sufficient access to instructional technology,</td>
</tr>
<tr>
<td></td>
<td>including computers, devices, printers, software and internet access.</td>
</tr>
<tr>
<td></td>
<td>79.7%</td>
</tr>
<tr>
<td>d.</td>
<td>Teachers have access to reliable communication technology,</td>
</tr>
<tr>
<td></td>
<td>including phones, faxes and email.</td>
</tr>
<tr>
<td></td>
<td>91.6%</td>
</tr>
</tbody>
</table>
Vendor Data - Home Base Applications

Home Base

Canvas

Schoolnet

PowerSchool

true north logic
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

<table>
<thead>
<tr>
<th>Legislative Dashboard</th>
<th>District or Charter Leader/Decision-maker</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLMI Reporting</td>
<td></td>
</tr>
<tr>
<td>DLMI Profiles</td>
<td></td>
</tr>
<tr>
<td>Vendor Data Dashboards</td>
<td></td>
</tr>
<tr>
<td>Rubric Dashboard</td>
<td></td>
</tr>
</tbody>
</table>
What is the purpose of your visualization?
DALI Data Products and Functions

- Internal
  - (Future) Vendor Dashboards
- External
  - DLI Legislative Dashboard
  - DLI Rubric Dashboard

- Curated
  - DLI Rubric Dashboard
- Not Curated
  - DLI Legislative Dashboard
  - DLI 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)](image)

<table>
<thead>
<tr>
<th>Rubric Area</th>
<th>Out of 115</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>58</td>
</tr>
<tr>
<td>Leadership</td>
<td>49</td>
</tr>
<tr>
<td>Prof Learn</td>
<td>59</td>
</tr>
<tr>
<td>Content &amp; Instruction</td>
<td>32</td>
</tr>
<tr>
<td>Tech &amp; Infra</td>
<td>48</td>
</tr>
<tr>
<td>Data &amp; Assessment</td>
<td>65</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>2015 Digital Learning Progress Rubric - District</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Leadership Score (average of L1-L7):</strong></td>
</tr>
<tr>
<td>L1: Shared Vision</td>
</tr>
<tr>
<td>L2: Personnel</td>
</tr>
<tr>
<td>L3: Communication and Collaboration</td>
</tr>
<tr>
<td>L4: Community Engagement</td>
</tr>
<tr>
<td>L5: Sustainability</td>
</tr>
<tr>
<td>L6: Policy</td>
</tr>
<tr>
<td>L7: Continuous Improvement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2014 Teacher Working Conditions Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Regarding school leadership in your school: The faculty and staff have a shared vision.&quot;</td>
</tr>
<tr>
<td>&quot;Teachers have sufficient access to a broad range of professional support personnel.&quot;</td>
</tr>
<tr>
<td>&quot;This school maintains clear, two-way communication with the community.&quot;</td>
</tr>
<tr>
<td>&quot;Teachers provide parents/guardians with useful information about student learning.&quot;</td>
</tr>
</tbody>
</table>
Data Interpretation Guides

Collect ➔ Explore ➔ Interpret ➔ Act ➔ Share
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
As part of the North Carolina Digital Learning Plan, the Friday Institute and partners agreed to implement a Digital Learning Progress Dashboard. This is a sample of statewide data aligned to the Digital Learning Progress Rubric. Please explore additional pages for more detailed data on each rubric area.
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.

Percent of schools within district using an LMS
0% 100%
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
Manage statewide cooperative purchasing of content, including statewide shared resources for teachers to use for lesson planning and formative student assessments.

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.

Digital Learning Dashboard V2

Funding Priority
Summary
Visualization, explained
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.
Legislative Dashboard

- **Audience:** Policymakers & Lawmakers
- **Purpose:** Provide data about digital learning
- **Components:**
  - Devices Trends
  - Devices
  - Content
  - School Internet
  - Personnel
  - Professional Development
  - Funding
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

Select an Area to Explore:

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.
Description of statewide data
In each visualization, statewide data is orange, and benchmarks are dark blue.
Legislative Dashboard

Select an Area to Explore:

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

Select an Area to Explore:

Include up to Three Districts:

- Alleghany County Schools
- Carteret County Public Schools
- Asheville City Schools

Statewide, 24% of elementary, 46% 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 ✓
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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- **Dashboard:** Vendor Data Dashboard
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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!

Presenter Information:

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