

Student Device, Home Connectivity, and K12 Artificial Intelligence Guidance Updates

January 29, 2024

House Select Committee on Education Reform

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NC Department of Public Instruction

Agenda



Student Device
Landscape post
COVID



State of Home
Connectivity



School Bus Wi-Fi



Guidance on the
use of Artificial
Intelligence

Student Devices

Status of PSU Technology and Digital Resources

- To inform support, policy and funding decisions at the state level, the North Carolina Digital Learning and Media Inventory (DLMI) is required to be completed every year by PSUs with a deadline of June 30th, since June of 1996.
- This survey, completed by PSU and School leaders provides information on the technology and digital instructional assets.
- All data is self-reported by the PSU.
- The DLMI is used to inform the School Report Card data points on student to device ratio and number of media titles.
- Student home connectivity and access to devices at home are collected by schools through parent surveys and displayed in a separate dashboard linked below.
- *The DLMI is the data powering the "Student Digital Learning Dashboard" linked above with data visualizations on targeted questions.

Home Access: <https://go.ncdpi.gov/DigitalDashboard>

Full DLMI: <https://go.ncdpi.gov/DLMI22>

Digital Devices in Schools

1.98 million

Student Devices in PSUs

- Devices in active use by PSU students
- Includes labs, mobile carts, spare devices, and damaged devices used for spare parts

Current State of Digital Devices in Schools

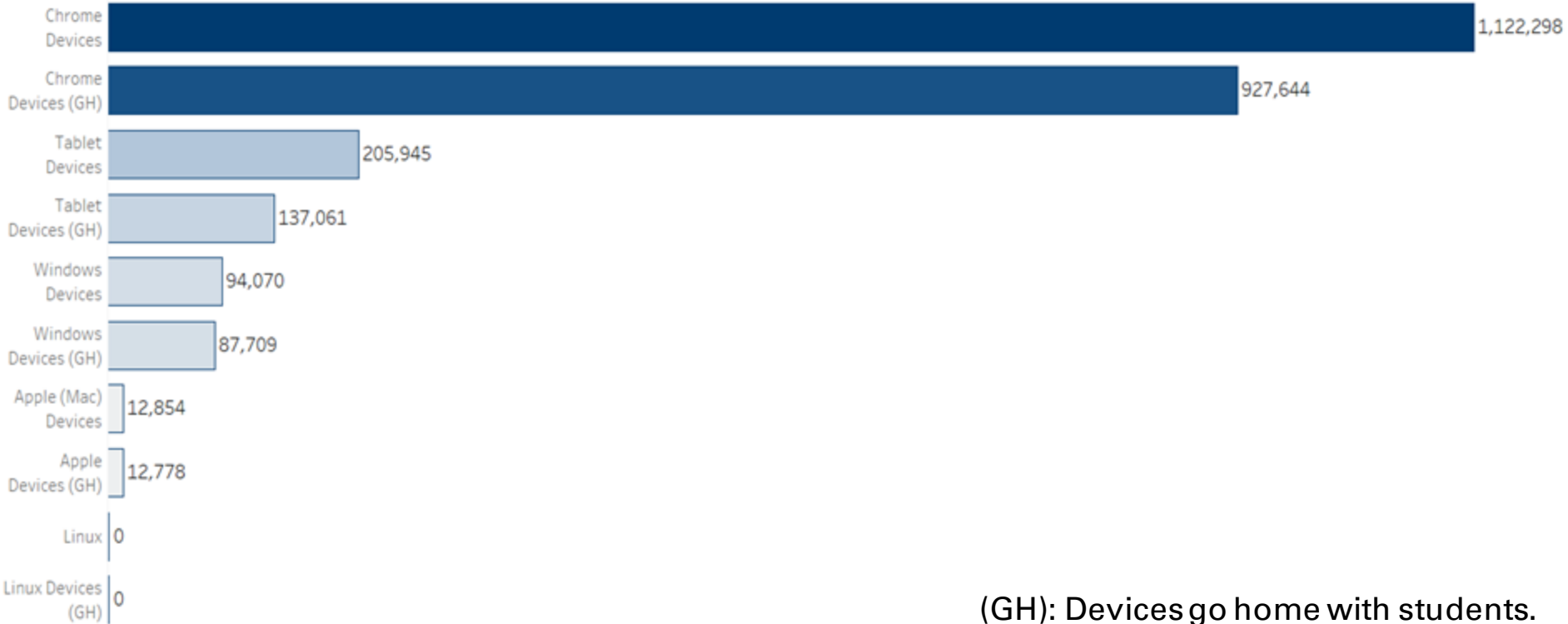
114

of 115 LEAs have
one device per
student.

162

of 215 charters
have one device
per student.

Types of Student Issued Devices in Schools



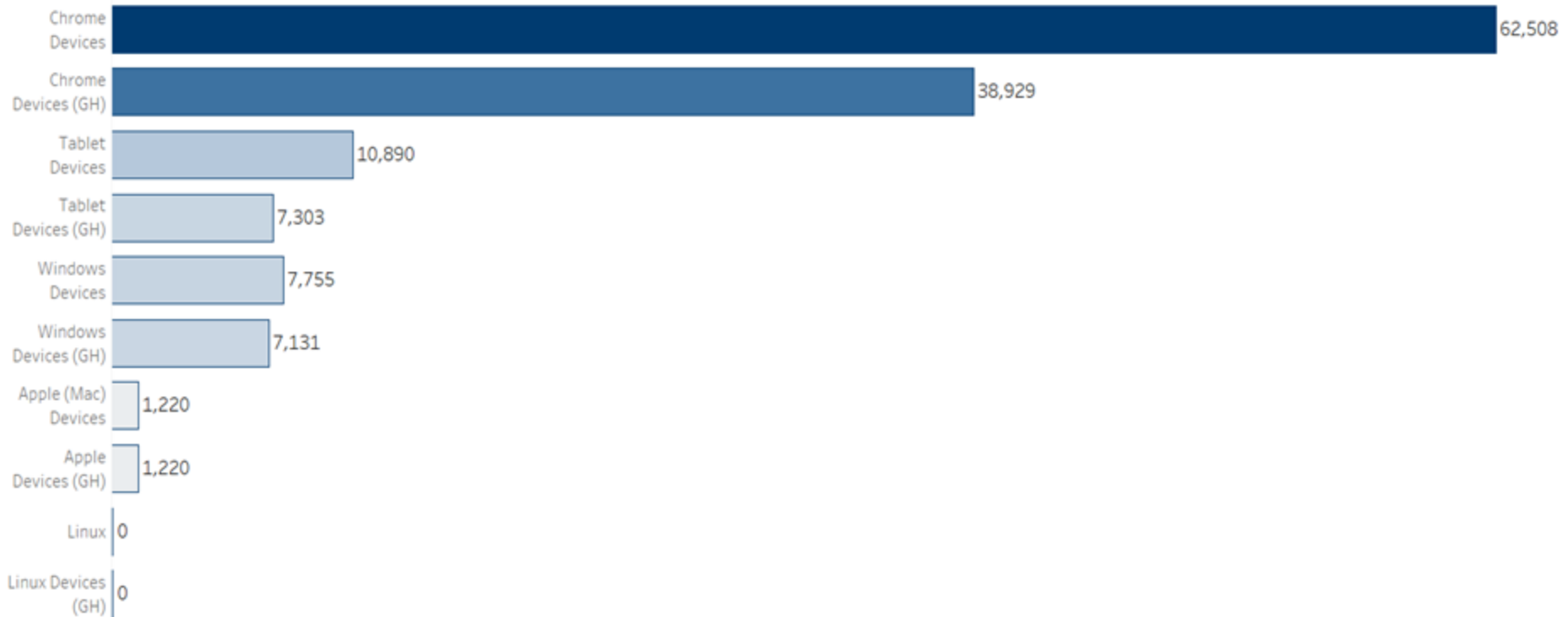
(GH): Devices go home with students.

Types of Student Issued Devices in Schools: LEAs



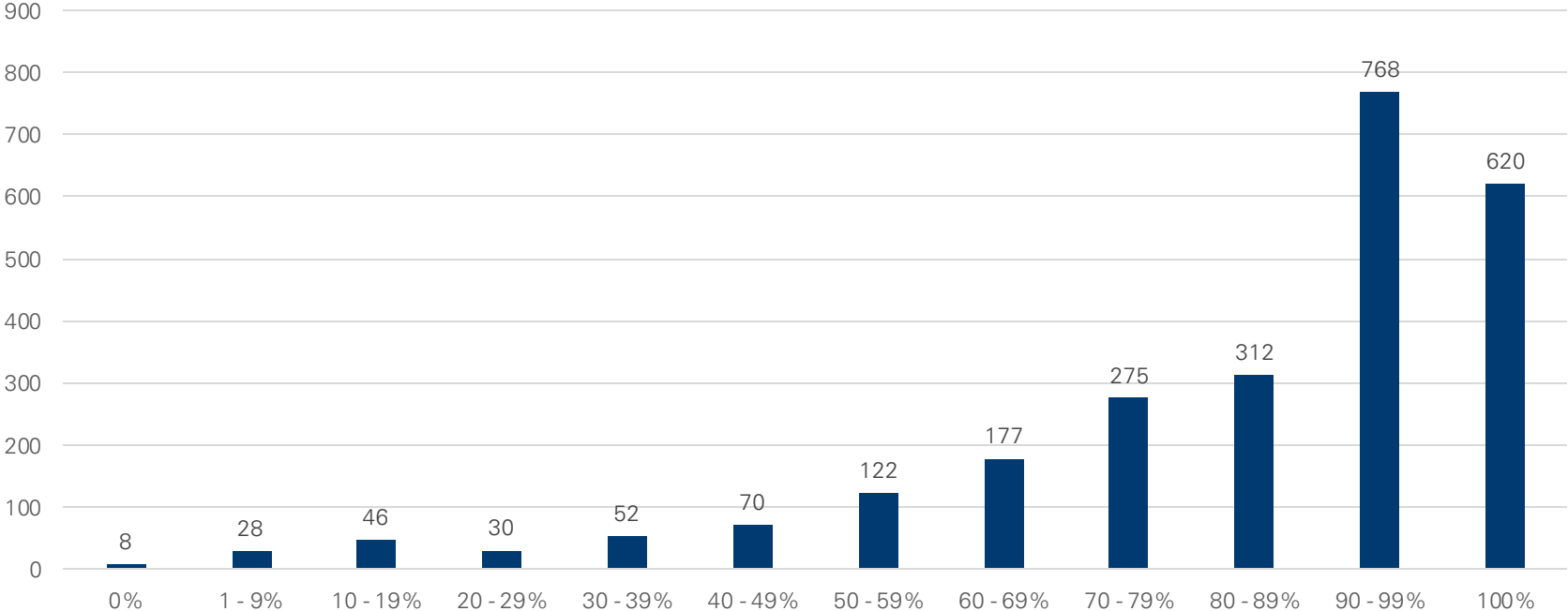
(GH): Devices go home with students.

Student Issued Devices in Schools: Charters

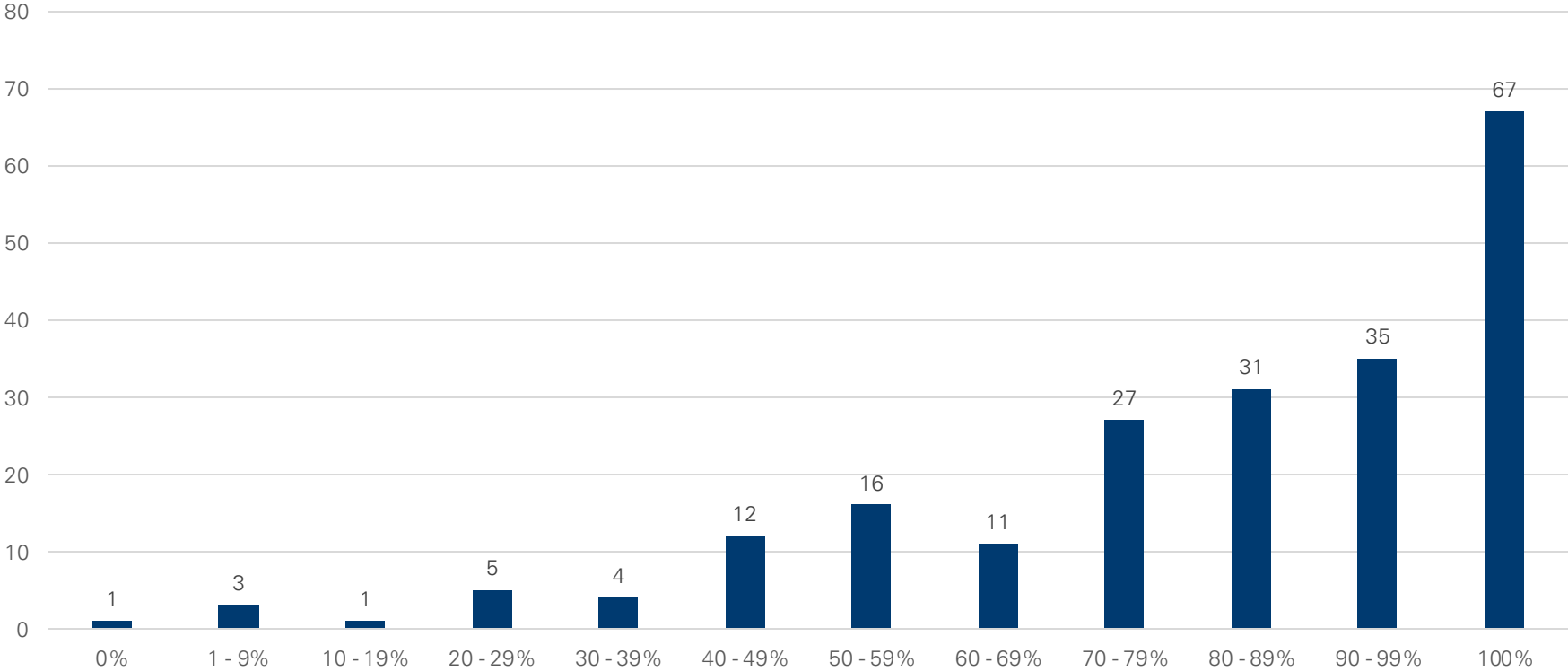


(GH): Devices go home with students.

Devices 4 Years Old or Less: LEA Schools (6/2023)



Devices 4 Years Old or Less: Charter Schools (6/2023)



LEA Device Sustainability

89

of 115 LEAs have reported they do not have identified and/or sufficient resources to sustain their refresh cycles for student devices beyond ESSER funding.

Device Replacement

\$525

Average cost of a student device with warranty

4-5

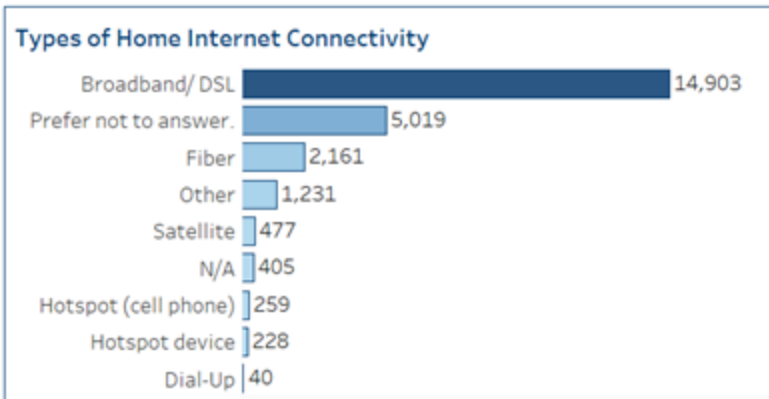
Average replacement cycle (years)

Student Home Connectivity and Device Access

Home Connectivity

- Per NC Broadband Office, at least 1.1 million North Carolina households lack access to high-speed internet, cannot afford it or do not have the skills needed to take advantage of the digital economy
- NC Broadband Office project approximately 65% of households without Internet access do not have connectivity to due to geographic location
- Student Digital Learning Dashboard asks specific questions concerning home internet quality and type and access to devices.
- Parent response rate to the home connectivity and device access align with NC Broadband Office response rates of approximately 2.3%

Student Internet Access Reported by Families: State-wide



Reason(s) for Lack of Internet Access

| | |
|------------------------------------------|--------|
| Not Applicable | 20,237 |
| Prefer not to answer. | 2,706 |
| Internet available but not dependable. | 505 |
| Internet available but too expensive. | 191 |
| Not available where the home is located. | 104 |
| Internet available but not adequate. | 71 |
| No cell signal, hotspots do not work. | 24 |
| Family chooses not to have internet. | 19 |
| No alternatives provided by school. | 13 |
| Broken or outdated equipment. | <10 |

Other Sources for Internet Connectivity

| | |
|---------------------------------------|-------|
| Prefer not to answer. | 7,967 |
| Internet at another home. | 1,929 |
| Hotspot provided by the home. | 1,921 |
| No regular and reliable internet. | 857 |
| Internet at the public library. | 818 |
| Internet in school parking lot. | 212 |
| Internet within the community. | 192 |
| Hotspot provided by the school. | 153 |
| Internet at other community location. | 126 |
| Internet at a park and ride. | <10 |

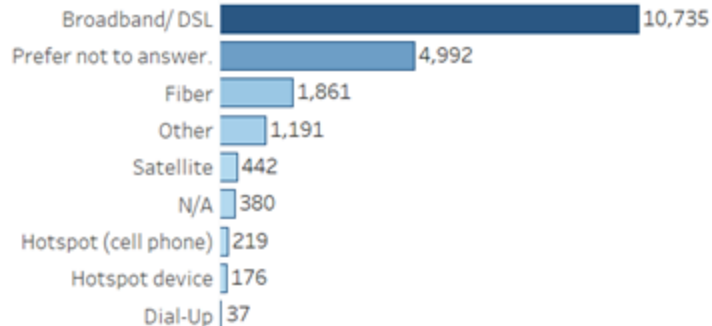
Student Internet Access Reported by Families: LEAs

Internet Access at Home

Do students in your home have consistent internet access at home that is adequate to complete schoolwork?



Types of Home Internet Connectivity



Reason(s) for Lack of Internet Access

| | |
|------------------------------------------|--------|
| Not Applicable | 14,757 |
| Prefer not to answer. | 2,689 |
| Internet available but not dependable. | 482 |
| Internet available but too expensive. | 172 |
| Not available where the home is located. | 100 |
| Internet available but not adequate. | 67 |
| No cell signal, hotspots do not work. | 23 |
| Family chooses not to have internet. | 19 |
| No alternatives provided by school. | 11 |
| Broken or outdated equipment. | <10 |

Other Sources for Internet Connectivity

| | |
|---------------------------------------|-------|
| Prefer not to answer. | 4,746 |
| Hotspot provided by the home. | 1,736 |
| Internet at another home. | 1,720 |
| No regular and reliable internet. | 771 |
| Internet at the public library. | 717 |
| Internet in school parking lot. | 197 |
| Internet within the community. | 142 |
| Hotspot provided by the school. | 142 |
| Internet at other community location. | 118 |
| Internet at a park and ride. | <10 |

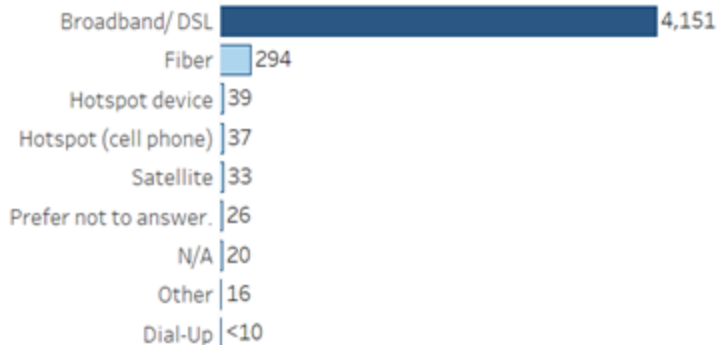
Student Home Internet Access Reported by Families: Charters

Internet Access at Home

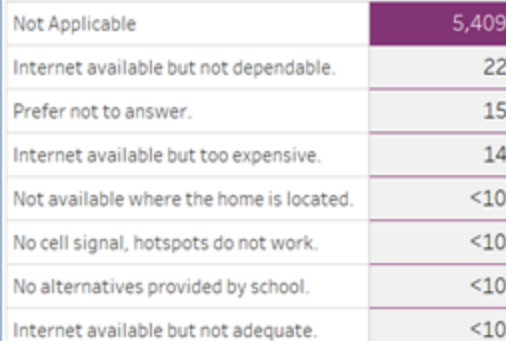
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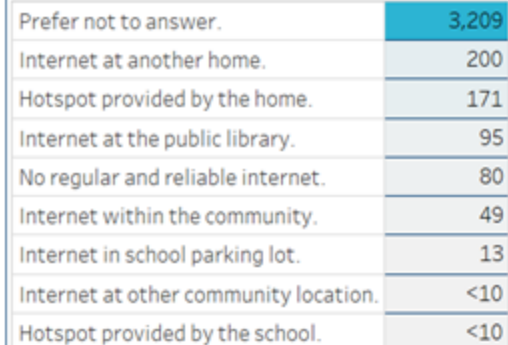
Types of Home Internet Connectivity



Reason(s) for Lack of Internet Access

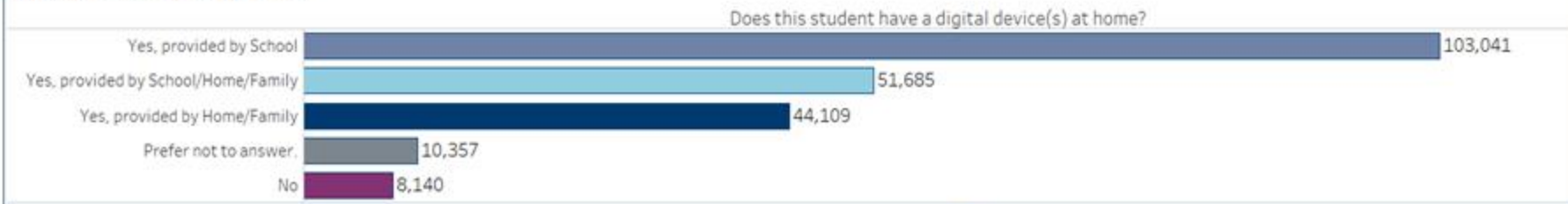


Other Sources for Internet Connectivity

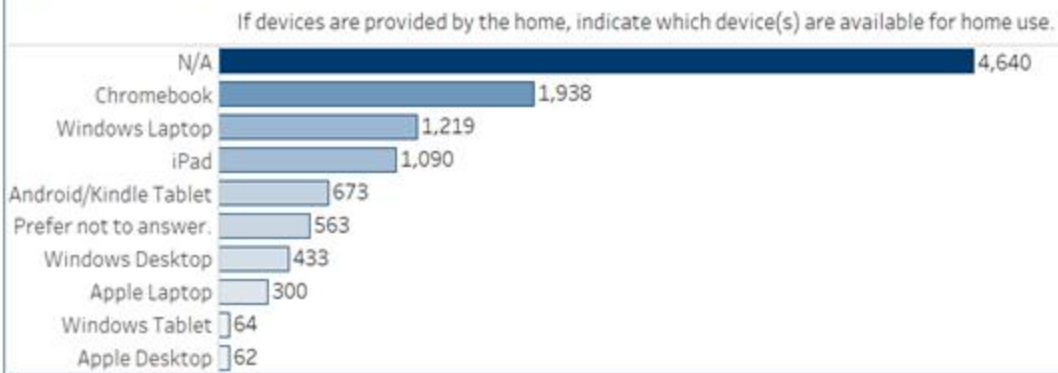


Student Home Device Access Reported by Families: State-wide

Student Device Access (Home)



Types of Devices (at Home)

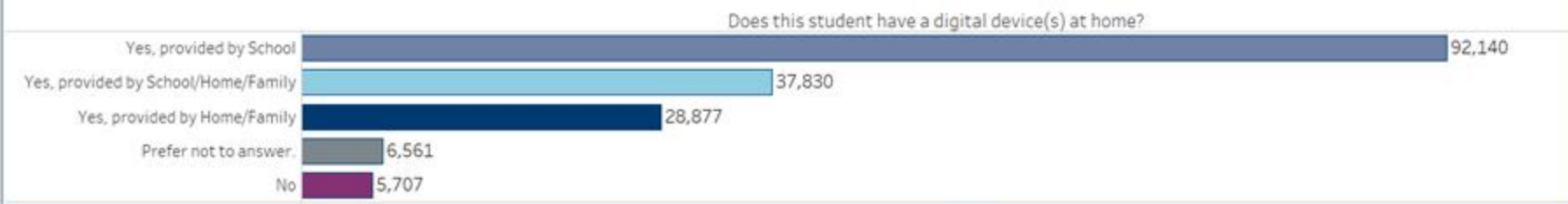


Reasons for Lack of Devices at Home

| | |
|------------------------------------------|--------|
| Not Applicable | 18,389 |
| Device too expensive | 325 |
| Prefer not to answer. | 199 |
| Device broken/ damaged/ outdated | 187 |
| Device not provided by school | 135 |
| Family chooses to not purchase a device. | 129 |
| Other | 95 |
| Lack of internet to use device | 72 |

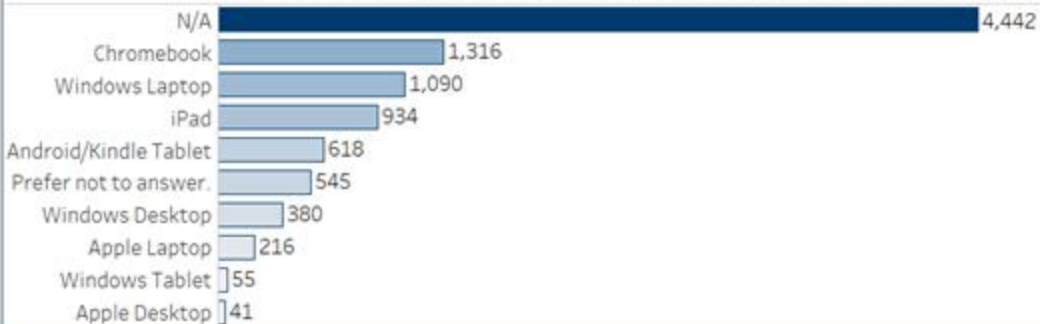
Student Home Device Access Reported by Families: LEAs

Student Device Access (Home)



Types of Devices (at Home)

If devices are provided by the home, indicate which device(s) are available for home use.



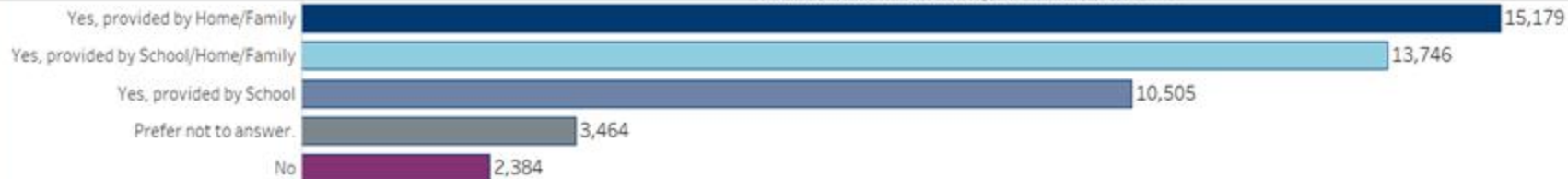
Reasons for Lack of Devices at Home

| | |
|------------------------------------------|--------|
| Not Applicable | 15,461 |
| Device too expensive | 286 |
| Prefer not to answer | 180 |
| Device broken/ damaged/ outdated | 153 |
| Family chooses to not purchase a device. | 122 |
| Device not provided by school | 100 |
| Other | 81 |
| Lack of internet to use device | 67 |

Student Home Device Access Reported by Families: Charters

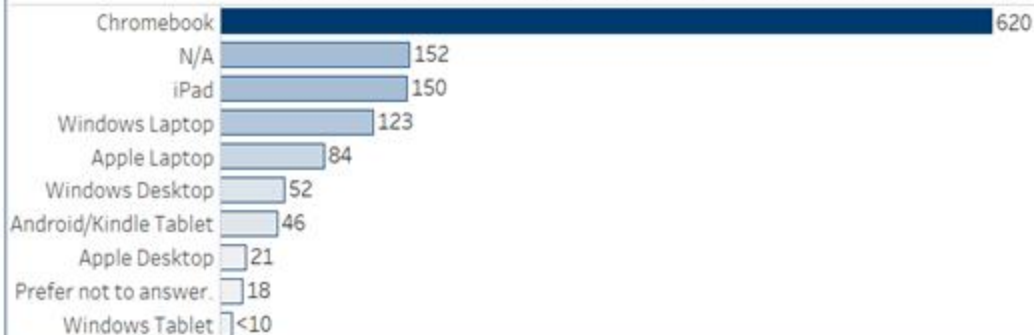
Student Device Access (Home)

Does this student have a digital device(s) at home?



Types of Devices (at Home)

If devices are provided by the home, indicate which device(s) are available for home use.



Reasons for Lack of Devices at Home

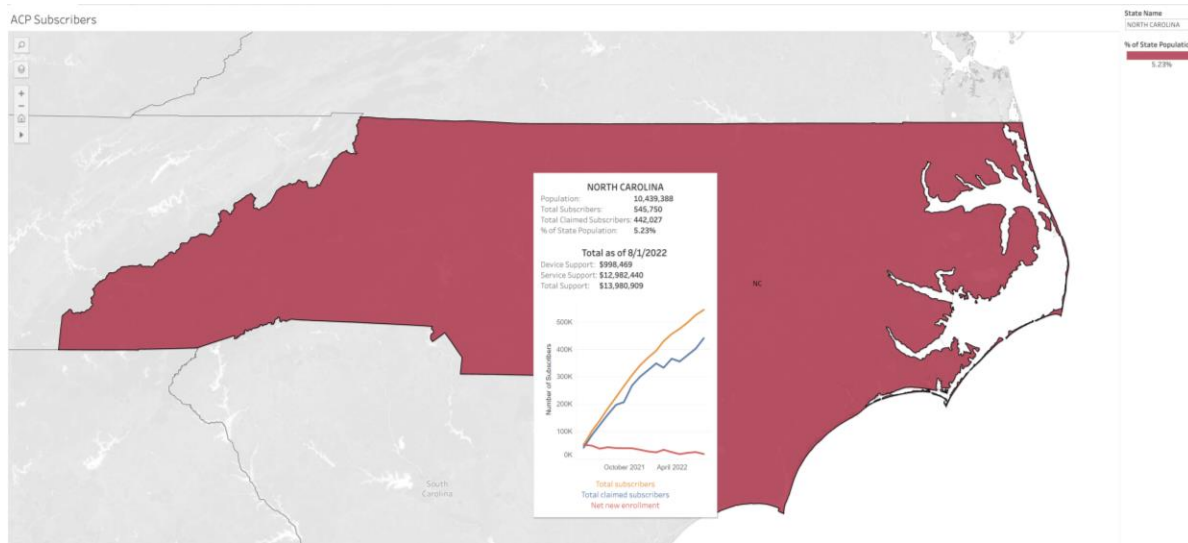
| | |
|------------------------------------------|-------|
| Not Applicable | 2,887 |
| Device too expensive | 32 |
| Device not provided by school | 32 |
| Device broken/ damaged/ outdated | 30 |
| Prefer not to answer. | 18 |
| Other | <10 |
| Lack of internet to use device | <10 |
| Family chooses to not purchase a device. | <10 |

Strategies for At-Home Internet Access

- NTIA Grant Funding
- Affordable Connectivity Program (Ends 4/30/24)
- Hotspot Programs, including NC Student Connect (Ended)
 - Provided 62,695 mobile hotspots through nearly \$21 million allocated to PSUs during COVID.
 - Project 10 Million
- During Covid, DPI partnered with FI to validate Starlink, Television White Space
- Many of the supports were ARRA and ESSER funded and sunseting
- Efforts lead by other state agencies (BEAD, GREAT, etc)

ACP Dashboard

<https://go.ncsu.edu/ACPDashboard>



School Bus Wi-Fi (ECF)



19 PSUs



1,621 Buses



\$3,286,776.92

School Bus Wi-Fi

7%

of PSUs reported using school bus wi-fi for students to address Internet access outside of school (Source: DLMI 6/2023).

Bus Wifi

- Bus Wifi is now E-Rate eligible
- PSUs indicate primary value is usage on school athletic buses
- Lack of demonstrated educational value and challenges with LTE coverage

“I think it can be valuable on activity buses where students are spending a long-time on buses. We do not see the advantage for most of our bus routes, we only see it as something else for a bus driver to have to manage. I would consider a handful of activity buses, but not yellow school buses.”

- Quote from an LEA Technology Director

Generative AI Guidance for Schools

Providing actionable solutions for safe, responsible and effective use

About the Generative AI Guidance Recommendations

- The North Carolina Generative AI Recommendations and Considerations for PK-13 Public Schools is organized around the NC Digital Learning Plan (DLP).
- AI is another ed tech tool and like any tool adoption must be purposeful
- The AI Guidance builds upon the DLP Framework to support users on the safe and effective implementation of innovative technologies.
- All efforts are designed to improve current student outcomes and to prepare students for future school and work.



NCDPI Generative AI Implementation Recommendations and Considerations for PK-13 Public Schools

- 4th State Educational Agency in the Nation to Release Guidance
- Earned National Recognition and has been referred to as the best guidance available to PK-12 schools

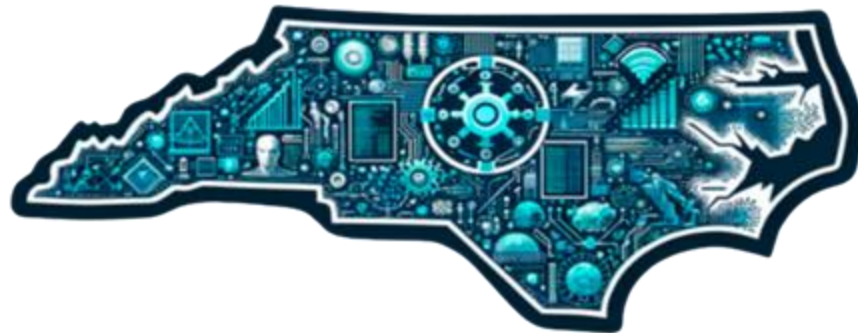


Image created by Vera Cubero, in partnership with
DallE-3 Image Generator in ChatGPT Plus

[https://go.ncdpi.gov/AI Guidelines](https://go.ncdpi.gov/AI_Guidelines)

Publication Date: 1/16/24

Living Document

How does AI Benefit the Classroom

- AI cannot replace good teaching and humans must be involved
- AI understanding is critical as the technology is prevalent in many primary applications
- AI literacy is the new digital divide
- Many jobs created with AI skill needed
- Improve teacher productivity and student learning
 - Individualizing lessons plans
 - Automating simple grading
 - Tutoring aid and deeper content learning

Can I Use AI on this Assignment? Generative AI Acceptable Use Scale

Generative AI refers to any of the thousands of Artificial Intelligence tools in which the model generates new content (text, images, audio, video, code, etc). This includes, but is not limited to, Large Language Models/ LLMs such as ChatGPT, Google Bard, etc, Image creators such as Dall-E3, Adobe Firefly, and any tools with built in generative AI capabilities such as Microsoft CoPilot, Google Duet, Canva, etc etc)

| | Level of AI Use | Full Description | Disclosure Requirements |
|----------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 0 | NO AI Use | This assessment is completed entirely without AI assistance. AI Must not be used at any point during the assessment. This level ensured that student rely solely on their own knowledge, understanding, and skills. | No AI disclosure required May require an academic honesty pledge that AI was not used. |
| 1 | AI-Assisted Idea Generation and Structuring | No AI content is allowed in the final submission. AI can be used in the assessment for brainstorming, creating structures, and generating ideas for improving work. | AI disclosure statement must be included disclosing how AI was used. Link(s) to AI chat(s) must be submitted with final submission. |
| 2 | AI-Assisted Editing | No new content can be created using AI. AI can be used to make improvements to the clarity or quality of student created work to improve the final output. | AI disclosure statement must be included disclosing how AI was used. Link(s) to AI chat(s) must be submitted with final submission. |
| 3 | AI for Specified Task Completion | AI is used to complete certain elements of the task, as specified by the teacher. This level requires critical engagement with AI generated content and evaluating its output. You are responsible for providing human oversight and evaluation of all AI generated content. | All AI created content must be cited using proper MLA citation. Link(s) to AI chat(s) must be submitted with final submission. |
| 4 | Full AI Use with Human Oversight | You may use AI throughout your assessment to support your own work in any way you deem necessary. AI should be a 'co-pilot' to enhance human creativity. You are responsible for providing human oversight and evaluation of all AI generated content. | You must cite the use of AI using proper MLA or APA citation. Link(s) to AI chat(s) must be submitted with final submission. |

Adapted by Vicki Cabers for the North Carolina Department of Public Instruction (NCDPI) from the work of Dr. Leah Furtak, Dr. Mike Perkins, Dr. Jasper Roe FHEA, & Dr. Jason Mowagh
Link to Original Work



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AI Implementation Roadmap for K12 Schools

1

Establish a Foundation

- Host meetings /w district & school leaders, Board & key decision makers
- Create a team to develop or adapt district and or school-wide GenAI academic guidelines
- Review current EdTech providers deploying GenAI

2

Develop Your Staff

- Provide professional development on GenAI .
- Share draft district GenAI academic guidelines draft for feedback
- Support teachers in integrating GenAI into their syllabi & classroom policies
- Support teachers in shifting traditional assessments to GenAI-resistant, GenAI-assisted, & GenAI-partnered versions

3

Educate Students & Community

- Build common understanding school-wide events that include the community.
- Review guidelines in classrooms along with syllabi & examples of appropriate & inappropriate student use.
- Implement GenAI literacy training .
- Provide ongoing opportunities for professional earning to teachers and the school community

4

Assess & Progress

- Create a plan for review and improvement in light of GenAI advances.
- Evaluate new GenAI tools in a timely manner.
- Update, train & provide opportunities to share.
- Elevate best practices for GenAI adoption.

How to Use AI Responsibly **EVERY** Time

E **VALUATE** the initial output to see if it meets the intended purpose and your needs.

V **ERIFY** facts, figures, quotes, and data using reliable sources to ensure there are no hallucinations or bias.

E **DIT** your prompt and ask follow up questions to have the AI improve its output.

R **EVISE** the results to reflect your unique needs, style, and/or tone. AI output is a great starting point, but shouldn't be a final product.

Y **OU** are responsible for everything you create with AI. Always be transparent about how you've used these tools.

Ethical use **EVERY** Time

To ensure that AI serves as a valuable tool rather than a potential hazard, it's not only crucial to adopt a framework for responsible use, but acknowledge the key role we play as the users of that technology.

This acrostic will help guide responsible use of GenAI. It encapsulates the key steps to harnessing the power of artificial intelligence without unintended consequences, keeping ethics, accuracy, and transparency at the forefront of your endeavors.

The EVERY framework was created by Vera Cubero (NCDPI) and refined in collaboration with [aiforeducation.io](https://www.aiforeducation.io) for broader distribution.

Click the image to download it from their website at <https://www.aiforeducation.io/ai-resources/how-to-use-ai-responsibly-every-time>

