Digital Literacy Needs by Covered Population

1. **Low-income households (household income no more than 150% of federal poverty threshold)**

   Lack of Digital Skills. Low-income respondents were less likely to feel confident with basic digital skills compared to the overall population. In many listening sessions, participants consistently conveyed the challenge of affording classes or accessing local community resources due to their income status in the community. One participant remarked, “I definitely want to learn how to use my apps more easily, but I can’t afford the classes they have because I also have a job and family and it’s hard to make time for the classes.” It is evident that resources exist, but they are not financially accessible or affordable for residents with lower incomes. Most respondents were ‘very confident’ in their ability to turn on a digital device (90%), send an email (87%), install apps (77%), and access online banking (77%). Lower-income households felt less so accessing government services (64%), using video applications (67%), or looking for educational content (69%).

	Overall	Low Income
Turning on a digital device	95%	90%
Installing apps on a device	86%	77%
Sending an email	94%	87%
Word processing	85%	72%
Searching for / applying for jobs	81%	69%
Accessing online banking	86%	77%
Accessing or applying for government services	77%	64%
Finding educational content	82%	69%
Using video applications	80%	67%

   Lack of Digital Literacy Training. A review of digital literature (Davis et al., 2023) found that “producing content and communication for low-income families solely online is ineffective, as they do not always have necessary access or skills to find these resources. Wide use of Smartphones and mobile devices does not equal robust digital access and interaction. To reach potential participants, partnerships with community organizations need to be considered to distribute materials and help with recruitment. Promising programs have included partnerships between city governments, philanthropic partners, internet service providers, and community anchor organizations to create programs which provide long-term solutions to digital inequities in communities.”

2. Aging Individuals

Lack of Digital Skills. Aging Individuals were less likely to feel confident with in their digital skills compared to the average North Carolina resident; however, most individuals felt either 'very' or 'somewhat' confident in their basic digital skills, such as turning on a device or sending an email (94%), sending an email (93%), or accessing online banking (84%), installing apps on a device (82%), and word processing (81%). During our listening session, a participant expressed, "I struggle to comprehend various aspects of the settings on my phone and computer." This suggests that understanding the different settings and functional components within phones and computers is not straightforward for users. Aging individuals felt less confident in their ability to use video applications (73%), access and apply for government resources (75%), search for/apply for jobs (75%), or find educational content (75%).

	Overall	Aging Individuals
Turning on a digital device	95%	94%
Installing apps on a device	86%	82%
Sending an email	94%	93%
Word processing	85%	81%
Searching for / applying for jobs	81%	75%
Accessing online banking	86%	84%
Accessing or applying for government services	77%	75%
Finding educational content	82%	77%
Using video applications	80%	73%

Fear and relevancy play a part in the lack of digital skills in the aging population. In listening sessions, we heard how seniors were afraid they would "break the internet" if they did something wrong. This gap in digital literacy may be due to technology anxiety and technophobia (Ma et al., 2020; Lee & Kim, 2018). This fear of the internet may contribute to the fact that 13% indicated they didn't want to have internet at home.

Lack of Digital Literacy Training. Beyond the fear and anxiety of interacting with technology, aging individuals are also frequently intimidated by digital literacy training, even those focusing specifically on novice users (National Telecommunications and Information Administration, 2013). Aging populations are not digital natives, and many struggle to adopt new skills. With most resources moving to exclusively digital platforms (e.g., healthcare, government services, news, and information, and travel), older populations are at a disadvantage if they are reluctant to engage with technology and learn how to integrate it into their everyday lives.

3. **Incarcerated individuals**

Lack of Digital Skills. Incarcerated and formerly incarcerated persons cited a lack of preparation and familiarity with technology as a major concern when they were preparing to be released or have been released from prison. Participants in the listening sessions shared that they picked up most of their digital skills either from tech-savvy friends or family members or through extensive trial and error. They expressed a desire for increased digital skills, suggesting, *"If I had the digital skills, it would have made the transition to get on my feet sooner and easier."*

More than just increasing their comfort in an increasingly digital society, digital skills are necessary for the workforce; as reported in the Friday Institute Digital Literacy Report, "92% of jobs in North Carolina now require digital skills (National Skills Coalition, 2023)." One participant was frustrated: "My job asks me to share a link, and I don't know how to do it…I don't know how to do all that; I just know how to do the job." Using technology is stressful and anxiety-inducing for many of the formerly incarcerated individuals who participated in the listening sessions. Some specific points of confusion that they shared were the steep learning curve for new devices, the format changes from one device to another, the lack of spell check, and the fact that many of the icons and processes are not intuitive.

Additionally, incarcerated individuals were more likely to indicate they were 'not too confident' or 'not confident at all' in accessing or applying for government services (45%), word processing (38%), finding educational content (34%), or using video applications (34%). Based on imprisonment time, many individuals have gaps in their digital literacy skills due to the quick evolution of technology, and some have no idea how to use any digital devices at all once released.

Percent of Incarcerated Individuals that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	Overall	Incarcerated/ Formerly Incarcerated
Turning on a digital device	95%	89%
Installing apps on a device	86%	80%
Sending an email	94%	84%
Word processing	85%	62%
Searching for / applying for jobs	81%	74%
Accessing online banking	86%	73%
Accessing or applying for government services	77%	55%
Finding educational content	82%	66%

Using video applications	80%	66%

Lack of Digital Literacy Training. During listening sessions, former inmates discussed the lack of digital literacy training available to prepare them for life on the outside. Many incarcerated individuals will re-enter society, and there is a vast need to ensure those who are released have digital skills to navigate the various aspects of life, such as employment, transportation, housing, and health care. Studies have shown that digital literacy training can reduce recidivism rates (Withers, et.al, 2015) and can potentially positively influence returning citizens' employment prospects, mental health and attitude, and family relationships (Zivanai & Mahlangu, 2022). The inability to gain digital skills while incarcerated could hinder the individual's ability to successfully re-enter the community, further contributing to the digital divide. While some training programs already exist, participants in the listening sessions shared that some of the classes funded by federal grants are not of high or consistent quality. They also do not currently cover all the digital skills required to navigate and re-entry to society.

4. Veterans

Lack of Digital Skills. Veteran participants in listening sessions expressed their sentiments navigating a fast-paced, ever changing digital world, "There's something new coming almost every few months," and they are falling behind. As rapid advancements in technology occur, digital skills are also necessary to keep pace. Younger veterans often gained expertise in specialized military technology, which may not directly translate to civilian digital skills. Transitioning to the workforce can be a challenge, and residents want to start using online platforms like emails to connect with veterans to see where opportunities lie; as a veteran in Tyrrell County voiced, "Emails are helpful with connecting to the world."

When looking at confidence in a range of digital skills, veterans felt confident completing basic tasks such as turning on a digital device (94%), sending an email (93%), accessing online banking (87%), and installing apps on a device (85%). They were least confident using video applications (72%) and searching for/applying for jobs (77%).

Percent of Veterans that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	Overall	Veterans
Turning on a digital device	95%	94%
Installing apps on a device	86%	85%
Sending an email	94%	93%
Word processing	85%	82%
Searching for / applying for jobs	81%	77%

Accessing online banking	86%	87%
Accessing or applying for government services	77%	80%
Finding educational content	82%	80%
Using video applications	80%	72%

Lack of Digital Literacy Training. The digital needs of veterans vary depending on their age and other factors. We heard from our listening sessions that older veterans, in particular, need more digital literacy training and support, especially when it comes to connecting to VA benefits. Establishing collaborations with veteran representatives from each county is substantial to have a trusted appointee. Veteran representatives can be utilized as a good resource to expand classes on digital skills training; as a Tyrrell County resident expressed, “Having a VA representative will make sure we have someone we can rely on to share all news and show us different trainings and how to use things like a VPN or cybersecurity.” A few states have created programming to dispense technology to veterans and training on helping avoid scams or in-job training (Washington State Department of Veterans Affairs, n.d.). Career training for IT-focused jobs has been beneficial for the veteran population (Tech for Troops, n.d.).

5. **Individuals with disabilities**

Lack of Digital Skills. Individuals with disabilities in North Carolina require specialized assistive technology. Residents have shared experiences of concern about disability-inclusive training for those who rely on screen readers, voice recognition software, or adaptive keyboards to access and interact with digital devices and content. Other important educational resources include downloadable lectures with subtitles, alternative text formats for originally non-text media, and bypass buttons for those with visual impairments (Park et al., 2019).

However, acquiring and effectively using these technologies are complex, and it is necessary for individuals to receive training and support (Park et al, 2019). Additionally, residents face barriers with inaccessible websites and applications, and individuals with disabilities often encounter barriers when trying to navigate and access online information or services; as a resident voiced, “How can people who have special needs get help understanding the internet and have the skills to do it?” Which makes it essential to develop proficiency in overcoming these accessibility hurdles.

Lack of Digital Literacy training. Nearly all individuals with disabilities felt confident completing basic digital literacy tasks such as turning on a digital device (92%) or sending an email (91%). They felt less confident completing more complex tasks such as accessing or applying for government services (68%), using video applications (69%), searching for and applying for jobs (71%), or finding educational content (73%). These gaps may be partly due to the inaccessibility of devices and websites. In listening sessions and conversations with people who serve these populations, we heard the need for specialized digital literacy training, ideally from people who understand the needs of the specific disability and are trained in the appropriate accessible technology.

Percent of Individuals with Disabilities that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	Overall	Individuals with Disabilities
Turning on a digital device	95%	92%
Installing apps on a device	86%	79%
Sending an email	94%	91%
Word processing	85%	78%
Searching for / applying for jobs	81%	71%
Accessing online banking	86%	80%
Accessing or applying for government services	77%	68%
Finding educational content	82%	72%
Using video applications	80%	69%

6. **Individuals with a language barrier, including individuals who are English learners**

Lack of Digital Skills. Individuals with a language barrier were more likely than the general population to indicate lower levels of confidence in digital skills, particularly for skills like accessing or applying for government services (69%), applying for a job online (77%), or finding educational content (80%). Listening sessions with this covered population illuminated a pressing need for digital literacy training that is not only delivered in their language of choice but is also in a culturally competent manner. During focus group discussions, participants candidly acknowledged the limitations of their digital knowledge. One resident underscored this point, stating, "In our Hispanic communities, there is a lack of knowledge around the use of the internet. Most of us have [a] telephone or tablet, but we don't really take advantage of technology as much as we can. We don't have the technical skills or knowledge." Notably, the impact of the digital divide extends across age groups rather than being confined primarily to older generations, as seen in many other communities. One younger participant pointed out, "I am young, and I still don't know how to use the tools or the internet."

Percent of Individuals with a Language Barrier that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	Overall	Language Barriers/English Learners
Turning on a digital device	95%	94%

Installing apps on a device	86%	85%
Sending an email	94%	91%
Word processing	85%	82%
Searching for / applying for jobs	81%	77%
Accessing online banking	86%	84%
Accessing or applying for government services	77%	69%
Finding educational content	82%	80%
Using video applications	80%	88%

Digital Training Barriers. The demand for digital training within the English learner community is particularly significant, as these individuals are not only acquiring new technology skills but also mastering a new language concurrently. Residents noted, “We need to learn everything. Start from ground zero. We need to learn not from a theoretical way but [a] technical/practical way.” However, a formidable challenge exists for this population, primarily rooted in the fact that most digital training classes are conducted in English. Despite their proactive and eager approach to seeking assistance, these linguistic barriers pose substantial obstacles to many residents accessing the required training. For instance, a resident explained, “There are courses that we can pay for, but they don't speak our language.” The language barrier remains a predominant concern across various counties, as many participants echoed similar sentiments. One participant emphasized the importance of programs that offer English classes alongside technological skill development, remarking, “Me personally, I would like to see programs that are nearby that offer English classes that allow people to work on their technological skills. For me, that would be so important for the community.” Another resident shared, “Here in Charlotte, it would be great for a course to be taught how to work a computer. And also more English speaking programs”.

Need for Wraparound Services. Another specific barrier is the time and format of the classes. Residents stressed the need for classes to be in the evenings and include childcare, considering the challenges of balancing work and family responsibilities, “I would love for those classes to be in Spanish, and I would love for those classes to be after 5:00 PM, which is when we all can attend.” Providing food and transportation may also make training more accessible for these individuals. To reach these individuals, targeted outreach is needed. This may be in the form of social media and printed materials delivered to residents who do not yet have access to the internet (Tinubu Ali & Herrera, 2020).

7. **Individuals with low levels of literacy**

Lack of Digital Skills. Individuals with limited literacy are prone to expressing diminished confidence in digital skills, especially in areas such as online job applications and accessing internet banking services. In focus group conversations, participants

openly admitted to the constraints of their digital knowledge. Significantly, the repercussions of the digital divide affect various age groups within the low literacy demographic, diverging from the common perception that it predominantly affects older generations, as observed in many other communities.

Need for Wraparound Services. An additional obstacle pertains to class scheduling, structure, and content. It is essential to design courses considering the specific needs of individuals with low literacy levels. Residents emphasized the importance of offering evening classes with childcare services, acknowledging the difficulties in managing work and family obligations. Enhancing accessibility could also involve providing food and transportation support for training sessions. To effectively connect with these individuals, a focused outreach strategy is necessary. This could manifest through social media and the distribution of printed materials to residents who currently lack internet access.

Confidence. Individuals with low literacy levels were much less confident than the general population with all digital literacy skills. Individuals with low literacy skills were especially less likely to feel confident accessing or applying for government services (45%), finding educational content (52%), searching/applying for jobs (51%), or using word processing (47%). **These gaps could significantly affect this population's ability to engage in society and should be a key focus of the implementation phase of this work.**

Percent of Individuals with a Low Literacy that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	Overall	Low Literacy
Turning on a digital device	95%	75%
Installing apps on a device	86%	63%
Sending an email	94%	67%
Word processing	85%	47%
Searching for / applying for jobs	81%	51%
Accessing online banking	86%	57%
Accessing or applying for government services	77%	45%
Finding educational content	82%	52%
Using video applications	80%	57%

8. **Individuals who are members of a racial or ethnic minority group**
On the Digital Equity Survey, individuals from a racial or ethnic minority group were less likely than the average North Carolinian to feel 'very' or 'somewhat' confident in their digital literacy skills; however, when compared to other covered populations, they were often more confident. Specifically, members of racial and ethnic minority groups felt the most confident in turning on a digital device (92%), sending an email (93%), installing apps (89%), installing apps (82%), and using video applications (81%). They felt less

confident accessing or applying for government services (72%) and finding educational content online (77%). Several individuals expressed the need to learn everything and didn't quite know where to start.

"We need to learn everything. Start from ground zero. We need to learn not from a theoretical way but a technical/ practical way."

Percent of Individuals who are Members of a Racial or Ethnic Minority Group that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	Overall	Racial/ethnic minorities
Turning on a digital device	95%	92%
Installing apps on a device	86%	82%
Sending an email	94%	89%
Word processing	85%	80%
Searching for / applying for jobs	81%	78%
Accessing online banking	86%	80%
Accessing or applying for government services	77%	72%
Finding educational content	82%	77%
Using video applications	80%	81%

Wraparound Services. In listening sessions, many individuals noted the need for additional wraparound services in order for them to learn new skills. One pressing need is childcare so that caregivers can engage in the resources that already exist in their community. "So yes, the community college in Burlington had a program, but Mondays at 12 and Thursdays at 12, and there's no childcare. So mothers really don't go unless they just don't have small children like me." Latina mothers also expressed the need for services to support childcare at times that are convenient for them in addition to advancing their digital skills and careers.

"There were a lot of moms with small children and many times they would like to get ahead and take a class or whatever, learn how to use the internet better and computers. And I think that as Latinos we need support in that area so that we can really pull ourselves up as a community and offering us that kind of support would be really important. I think maybe a lot of people don't have the ability to go at certain times because they don't have childcare. But as other women have said here, there could be a place where you can get help with taking a class on internet use or computer use. And most of us need help and we rely on our kids for help. We don't have enough knowledge about technology."

Need for Centers. Research has shown that community anchor institutions could play a vital role in building digital literacy skills in their communities (National Telecommunications and Information Administration, 2010). Especially when they offer a family-based approach. Katz and Levine (2015) suggest establishing digital learning centers with inventories of digital technology and encouraging individuals to share the new skills with other family members. ASR Analytics (2013) found that offering an incentive (e.g., keep the laptop if you finish the modules) or certificates for completing digital literacy training has been shown to encourage attendance.

"I would also love for these courses to offer childcare services. A lot of us have children, and we also have a difficult time attending classes because of our children."

"Training and digital skills, digital literacy skills as someone has said, like a program like that could motivate people and that'll help a lot. I think a program like that would be quite successful."

9. Rural Residents

Confidence. Rural residents' digital literacy skills largely mirrored that of the general population of survey takers. Rural residents felt most confident in turning on a digital device and sending emails (94%). They also felt confident installing apps (86%), accessing online banking (86%), and word processing (84%). They felt least confident accessing or applying for government resources (77%), using video applications (79%), and searching for or applying for jobs (81%).

Percent of Rural Residents that Felt 'Very' or 'Somewhat' Confident in Their Digital Literacy Skills

	General Population	Rural Residents
Turning on a digital device	95%	94%
Installing apps on a device	86%	86%
Sending an email	94%	94%
Word processing, such as Google Docs or Microsoft Word	85%	84%
Searching for / applying for job	81%	81%
Accessing online banking	86%	86%
Accessing or applying for government services	77%	77%
Finding educational content such as taking a course	82%	81%

Using video applications, such as Zoom or FaceTime	80%	79%

Lack of Digital Literacy Training. Digital literacy training challenges for rural residents in North Carolina include limited access to training facilities, instructors, and resources available to receive it. Many participants in listening sessions had never heard of dedicated training centers or accessed such programs. A Robeson County resident expressed, “There is a huge digital deficiency in this area.” Trust is also essential to providing an inclusive service in rural areas; a resident said, “Services need to be provided through a trusted local organization.” They also shared that certain local organizations, if available, are gatekeepers that manage access to their community. New initiatives must advocate for partnerships and implement funds with trusted community organizations and community members to facilitate this training.

Lack of Digital Skills. Another concern shared during the listening sessions involved being digitally literate and possessing the necessary digital skills to access online content, such as government assistance programs. Aging rural residents were often some of the most impacted; an elderly resident in Robeson County said, “I have a computer and a smartphone, but I want to know how to use them better.” Some fundamental digital skills for this group include connecting to websites and searching for information, especially regarding health services (Weaver, 2022). Maintaining cybersecurity to protect personal information will also be an important skill moving forward as the types and amounts of cyber scams and attacks constantly change (Livingstone, Mascheroni, & Stoilova, 2023). For these reasons, beyond a connection point and device, rural residents have been effectively serviced by community-based support, such as digital literacy training and digital learning coaches or navigators. For example, Louisiana's Tech Talent South program provided workforce development for women and people of color, leveraging community resources to provide for those in need (ITU News, 2021). The Digital Works program achieved 1000 job placements as of August 2020 due to its workforce and economic development efforts towards providing digital training and assistance with securing online positions (Digital Works, 2021).

10. LGBTQIA+

Members of the LGBTQIA+ community were more likely than any of the covered populations and average North Carolina residents to feel either ‘very’ or ‘somewhat’ confident in their digital skills. They felt the most confident turning on a digital device or sending an email (99%), sending emails (98%), accessing online banking (95%), installing apps (93%), and word processing (91%).

Percent of LGBTQIA+ that Felt ‘Very’ or ‘Somewhat’ Confident in Their Digital Literacy Skills

	General Population	LGBTQIA+
Turning on a digital device	95%	99%
Installing apps on a device	86%	93%
Sending an email	94%	98%

Word processing, such as Google Docs or Microsoft Word	85%	92%
Searching for/applying for job	81%	91%
Accessing online banking	86%	95%
Accessing or applying for government services	77%	83%
Finding educational content such as taking a course	82%	91%
Using video applications, such as Zoom or FaceTime	80%	89%