# Educational Technology in Corrections

# Introduction:

Technology has transformed the way we approach most daily tasks and activities. It plays a role in how we apply for and perform on a job, communicate with friends and family, access government and other services, manage our finances, and purchase entertainment. Technology also enables our learning.

Recognizing the positive impact technology can have on education, President Obama, with the support of the U.S. Department of Education's Office of Educational Technology, developed the National Education Technology Plan. It outlines how our education system could use advanced technologies to support student learning regardless of backgrounds, languages, and disabilities; instruction and the professional development of teachers; data collection and analysis; and program improvement (U.S. Department of Education 2010). A corresponding plan describes how these technologies can be applied to the adult education field and adult learners (Russell et al. 2015).

As states, districts, higher education institutions, and other education providers implement these plans, education programs in correctional facilities are being left behind. The policies and practices of federal, state, and local corrections agencies, including the juvenile justice system, severely hinder the ability of correctional education programs to enable learning through technology. For example, according to a 2013 survey of state correctional education directors, although most states offer students limited use of computers in their prisons, less than half reported that one or more of their prisons provided students with off-line access to Internet content and even fewer allowed restricted Internet access (Davis et al. 2014).[1] The primary concern about adopting educational technology in corrections is the potential for security breaches. Other reasons include, but are not limited to, insufficient resources and staff capacity to purchase, implement, maintain, and monitor advanced technologies.

Despite these legitimate concerns, a sea change is occurring in corrections. As advanced technologies are integrated into other areas of correctional facility life (e.g., family communications via e-mail and video conferencing, and access to health and treatment services via telemedicine), a growing number of corrections agencies and facilities and their education partners are exploring ways to securely

**"Given the growing role of information technology in society, policymakers need to determine how to effectively leverage such technology for correctional education and assess its impact on instruction and outcomes."** (Davis et al.-b. 2014)

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[1] The 2013 survey of state correctional education directors was designed to assess the status of correctional education and the challenges states are facing. In addition to asking about the use of technology in correctional education, it documented programmatic concerns and trends. The survey was part of a larger, landmark study that found that individuals who participated in correctional education were less likely to recidivate and more likely to find employment upon release than non-participants. Also, the study found that for every dollar spent on correctional education, there was a four to five dollar cost savings (Davis et al. 2014).

and cost-effectively increase access to educational technology. Specifically, they are cautiously adopting advanced technologies to

- **help prepare students to join our globally networked society** by developing and improving their computer and digital literacy skills, making educational gains around the clock through computer-assisted instruction, accessing college courses, and preparing for employment;

- **provide students with access to online assessments** (e.g., online high school equivalency tests and industry-recognized certification exams), and instructors and administrators with the ability to measure student progress for program improvement purposes;

- **expand the professional development resources available to instructors** and equip them with technology-based instructional tools (e.g., open educational resources [OERs], learning management systems, and flipped classrooms) to enhance the classroom experience;

- **support an education continuum for incarcerated individuals** through data sharing, and aligning prison-based education and training programs with those in the community; and

- **expand the reach of correctional education services** to provide more incarcerated individuals with the knowledge and skills needed to obtain living-wage employment, become productive members of society, and exit court supervision upon release.

In addition to strengthening correctional education services, advanced technologies can

- **help correctional education programs have a greater impact on recidivism rates.** As documented by a recent meta-analysis of the effects of education on recidivism and postrelease employment outcomes for incarcerated adults, inmates who participated in correctional education programs were 43 percent less likely to return to prison than those who did not enroll (Davis et al. 2014). Advanced technologies could provide the means to expand correctional education services—to reach more students and to offer broader, more diverse curriculum—thereby further lowering recidivism rates.

- **ease the reentry process by allowing incarcerated individuals to prepare for release** by researching employment opportunities; applying for jobs, financial aid, and benefits; enrolling in college; addressing outstanding legal issues; searching for and securing housing; and maintaining or developing personal relationships with their community support networks. Most, if not all, of these prerelease activities require some form of computer or telecommunication device and Internet access.

Individuals who have been incarcerated for a number of years can be distressed by their sudden exposure to great advances in technology upon reentry. As noted by Jesse Pender, who was released from prison in 2011 after being incarcerated for 13 years, **"Coming into this new technology for me was just—it was like going from the old ages to Star Wars. It was very overwhelming."** (New Tech City 2013, p. 1)

# Overview:

This report is designed to inform federal, state, and local corrections and correctional education administrators as they explore ways to securely and cost-effectively provide advanced technologies in corrections facilities to help strengthen and expand educational and reentry services. It describes the current status of these technologies in corrections, existing and emerging approaches to providing such services in facilities, and the successes and challenges of early implementers.[2] The report concludes with a set of recommendations that align with the National Education Technology Plan's five overarching goals:[3]

**1 LEARNING**

All students will have engaging and empowering learning experiences both in and out of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society.

**2 ASSESSMENT**

Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement.

**3 TEACHING**

Professional educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for all students.

**4 INFRASTRUCTURE**

All students and educators will have access to a comprehensive infrastructure for learning when and where they need it.

**5 PRODUCTIVITY**

Our education system at all levels will redesign processes and structures to take advantage of the power of technology to improve learning outcomes while making more efficient use of time, money, and staff.

Appendix A contains a list of commonly used technology terms and their definitions.

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[2] Unless otherwise noted, the report findings are derived from interviews and e-mail correspondences with state and local corrections and education staff affiliated with states and facilities that have adopted educational technology. See the Acknowledgments for a list of these individuals.

[3] The five overarching goals are from the 2010 National Education Technology Plan. A revised plan is expected to be released in 2015 and will reflect input received from educators and educational technology experts, including those with correctional education expertise.

# Current Status of Advanced Technologies in Corrections

Advanced technologies, including the Internet, have already been incorporated into the operations of corrections facilities. They are used for security and communications monitoring, case management, and data collection, analysis, and sharing. They also are used to provide incarcerated individuals with a range of services, including the following:

- communication with family and friends (i.e., telephone services, e-mail and video conferencing; see the TRULINCS example below);
- video attendance at court hearings and other appointments;
- clinical health care, commonly referred to as "telemedicine";
- restricted online banking and money transfers; and
- online legal research (e.g., Lexus Nexus) and entertainment.

## TRULINCS

### The Trust Fund Limited Inmate Computer System (TRULINCS)

The Federal Bureau of Prisons (BOP) has created TRULINCS, an application that allows incarcerated individuals to securely exchange electronic messages with the general public. As the BOP noted, "With the inmate's eventual release, maintaining family ties will improve the likelihood of a successful reentry into the community, thus reducing the potential for recidivism."

**Funding source:** No taxpayer funds are used to support this service; rather, it is funded by the Inmate Trust Fund, which is generated through profits from inmate commissary purchases, telephone services, and fees.

**Restrictions:** Only incarcerated individuals and their contacts who have consented to monitoring and have been given approval by the BOP can use the service. These individuals also must obtain approval from their warden, who will consider their security level and past behavior. Also, only text messages of 13,000 characters or fewer (approximately two pages) are permitted. The BOP does not allow attachments or Internet access.

Advanced technologies are less commonly found or used in correctional education programs, however. As illustrated in Figure 2, the 2013 survey of state correctional education directors in 42 states (Davis et al. 2014) found that, although most states provided incarcerated students with some form of access to desktop and laptop computers, only one-fourth of them reported that one or more of their prisons allowed these students to use tablets (e.g., Kindles and iPads). In terms of computer networking (see Figure 1 for an overview), more than half of the 42 states surveyed reported that their computers were part of a local area network (LAN), 26 percent were part of a wide area network (WAN), and only 14 percent allowed students in one or more of their facilities to have restricted access to the Internet—the largest WAN available. However, nearly 40 percent of states reported using simulated Internet programs in one or more of their facilities and most (63 percent) gave some of their instructors access to live Internet technology in the classrooms. Only a handful of states, though, used interactive or one-way Internet-based, video, or satellite instruction.

## Figure 1

## Most Common Computer Networks in Correctional Education, 2013

Computer networks—systems that allow computers to exchange information—vary in scope and scale.



### LOCAL AREA NETWORK (LAN)
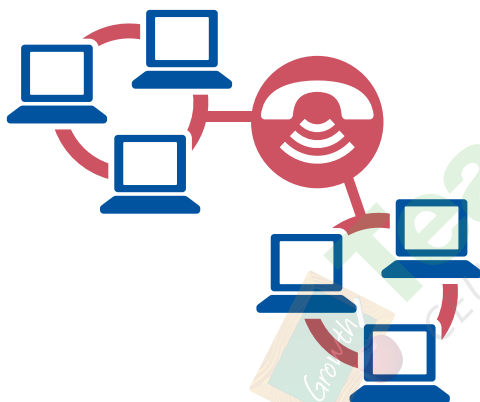
A LAN is a computer network that links computing devices over a relatively small geographic area, such as a home, office, or group of buildings. LANs are typically owned by one person or organization. They use connectivity technologies, such as an Ethernet or Token Ring, and can be connected to other LANs over any distance via telephone lines and radio waves.

### WIDE AREA NETWORK (WAN)
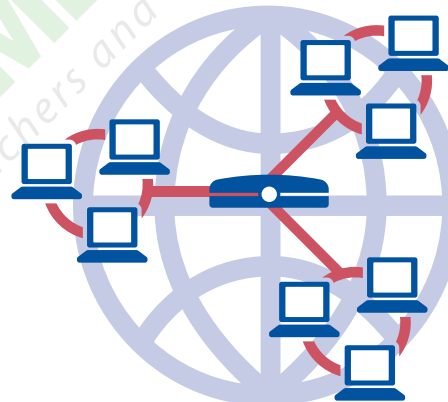
A WAN computer network is spread over a large distance and includes geographically dispersed LANs that are connected via a router—small devices that connect multiple networks together. WANs can be private (the lines are built for one organization) or public (leased lines that are managed by an Internet service provider). They typically use connectivity technologies, such as ATM, Frame Relay, and X.24. The Internet is the largest WAN available.

### Other Area Networks

| Wireless Local | Metropolitan | Storage/System/Server | Campus | Personal | Desk |

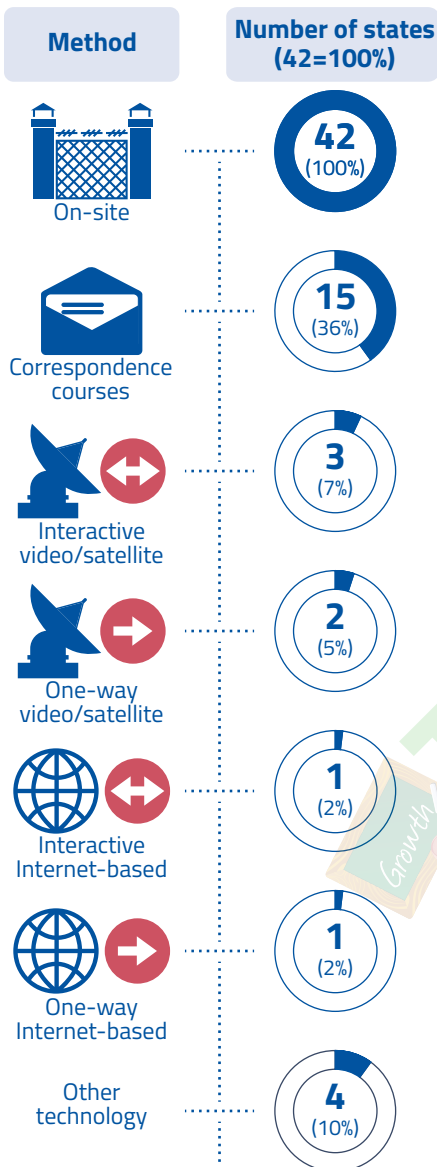**Figure 2**

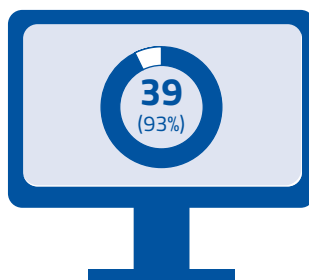# Availability of Technology in Correctional Education, 2013

## INSTRUCTION METHODS
for academic programs or vocational education/career and technical education courses
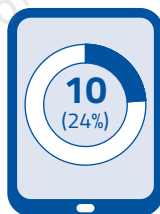
| Method | Number of states (42=100%) |
|---|---|
| On-site | 42 (100%) |
| Correspondence courses | 15 (36%) |
| Interactive video/satellite | 3 (7%) |
| One-way video/satellite | 2 (5%) |
| Interactive Internet-based | 1 (2%) |
| One-way Internet-based | 1 (2%) |
| Other technology | 4 (10%) |

## TYPES OF TECHNOLOGY
and number of states (42=100%) using

### Hardware

Desktop computers (stand-alone or networked): 39 (93%)

Mobile laptops: 17 (40%)
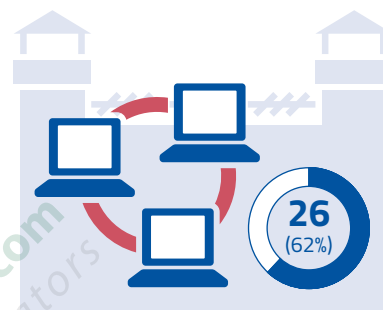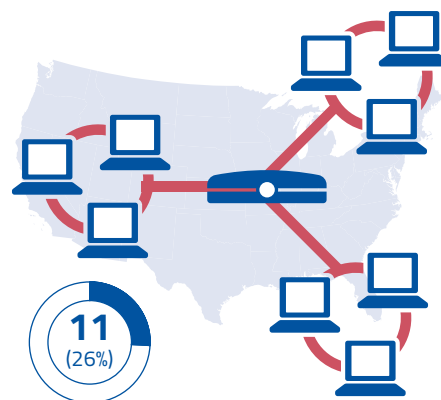
Tablets: 10 (24%)
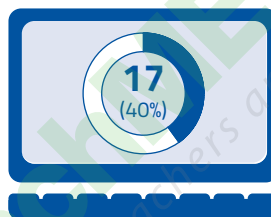
### Networks

Local Area Network (LAN): 26 (62%)

Statewide or Wide Area Network (WAN): 11 (26%)

## ACCESS TO THE INTERNET
for correctional education programs and number of states (42=100%) offering

| | Number of states (42=100%) |
|---|---|
| Only teachers/instructors live | 30 (73%) |
| No student access | 26 (62%) |
| Student simulated access | 16 (38%) |
| Student restricted live access | 6 (14%) |

**The primary reason corrections agencies do not provide their education programs and students with greater access to advanced technologies is security.** In fact, most corrections agencies restrict the use of computing devices to only the classroom or computer lab, and have policies barring incarcerated individuals from access to the Internet. One of the exceptions is the Ohio Department of Rehabilitation and Correction, which, in 2005, implemented a policy to allow restricted Internet access (see Appendix B for the policy). Regardless of state policy, all corrections agencies are concerned about incarcerated individuals contacting victims, creating hidden folders to store prohibited content and images, or engaging in criminal activity. Corrections administrators also admit that they have concerns about staff misuse of these technologies.

**"Security – in the sense of robust systems to prevent abuse – is an important part of the prison's service to the public. But so, too, is preparing people to lead law-abiding lives after release. Getting the balance right is crucial."** (Champion and Edgar 2013)

**Adopting advanced technologies in correctional education also has costs, including short- and long-term, and direct and indirect expenses.** Although the price of computers and computer hardware has dropped significantly in recent years (Krohn 2014), purchasing and keeping this equipment current requires funding. Other costs include software, annual licensing fees, and vendor subscriptions. Facilities, particularly in rural areas, also may face expenses associated with ensuring that the proper communication or networking channels are available. In addition to funding, education, and information technology (IT), support staff need to be trained on using and maintaining the equipment and programs, particularly because a lack of tech savviness among staff can hinder their ability to ensure the proper use and supervision of the technologies. Given these costs, state corrections agencies and facilities that are adopting advanced technologies are exploring different budget approaches. Considerations include the following:

- Should the corrections agency and its education partners cover all the costs associated with the purchase, implementation, maintenance, and monitoring of the technologies?

- Should inmate welfare funds (profits generated through the facility commissary) be used?

- Should some of these expenses (e.g., the purchase of the computers or telecommunication devices and software packages) be shifted to incarcerated individuals and their families? And, if so, how will the facility environment be affected when some individuals can afford to purchase hardware and software, and others cannot?

- What portion of the cost can be mitigated by using advanced technologies to modernize and streamline existing education and non-education services (e.g., moving from paper textbooks to e-books, streamlining library services, and automating the monitoring of communications)?

**Another challenge concerns the perceptions of policymakers, corrections officials, and the public about whether educational technology is an appropriate, cost-effective service to provide to incarcerated individuals.** As Brant Choate noted when serving as the director of Inmate Education Programs with the Los Angeles County Sheriff's Department (now superintendent of California's Office of Correctional Education), if correctional agencies are serious about preparing incarcerated individuals for release, they cannot ignore the technological advances, including the Internet, occurring outside of the facility walls. He also noted that security breaches will happen with technology just as they happen in other areas of corrections. He and others, such as Brian Walsh, associate dean of basic skills and corrections at Peninsula College in Washington state, stress the importance of addressing security breaches immediately, and being transparent with corrections officials about the breach and solution applied. Through open and honest communication about the benefits and risks of advanced technologies in the correctional education environment, a growing number of program administrators have been able to gain the necessary support from their correctional agencies, facilities, and outside funders to begin carefully adopting technology that will enable and expand learning and instruction.

Given the security and other concerns limiting the use of advanced technologies in correctional education, several approaches have been developed to provide education technology to facilities. The approaches generally fall into the following three categories: isolated local server, point-to-point secure line, and restricted Internet connection.

## Figure 3

## Existing Approaches to Providing Advanced Technologies in Corrections

### Isolated Local Server
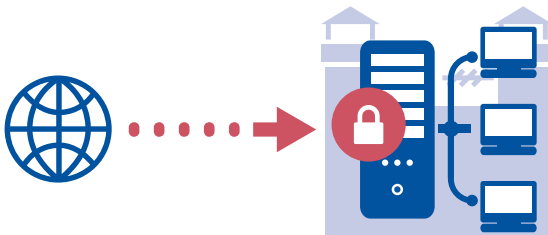
An isolated local server approach moves Internet content to a facility's LAN so that the documents can be made available to anyone — administrators, teachers, and students — with access to the offline collection. This approach provides the most security, outside of barring access to any Internet content. However, it requires frequent uploading of Internet content to stay current, and it does not provide real-time access to the Internet or student outcome data to support instruction.

### Point-to-Point Secure Line
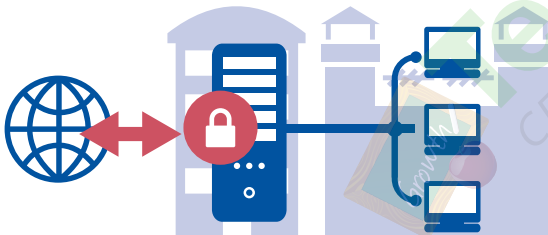
A point-to-point or dedicated line operates via a virtual circuit setup between the facility and a vendor. Internet content is streamed through the vendor's server. This approach provides real-time access to the Internet and data to support instruction. It also provides a high level of security but can be expensive because of vendor fees.

### Restricted Internet Connection
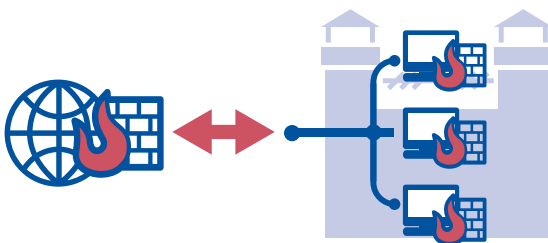
A restricted Internet connection has routers and firewalls on each end that permits only certain Internet content to come through the system. This requires (1) all nonessential software programs and utilities from the computer to be removed, often referred to as "hardening" equipment; and (2) content to be preapproved, commonly referred to as "white listing." It also can be expensive because of monthly vendor fees. However, it provides real-time access to the Internet and data to support instruction. It also provides a high level of security but is not as secure as the isolated local server and point-to-point approaches.

# Mobile Device Vendors Providing Educational Technology in Corrections

Although correctional education programs have a long history of working with vendors (e.g., software vendors), a growing number of mobile device vendors (see Table 1) have moved into the correctional education market. These vendors are adopting one or more of the existing approaches described above to equip corrections facilities with tablets or other devices for use in and outside of the classroom. Some of these vendors are focused primarily on providing education content and e-book readers while others are focused on expanding commissary services beyond typical products such as hygiene items, snacks, clothing, and entertainment devices and content (e.g., movies and music). In fact, most of these vendors entered the corrections education market as commissary providers and adapted their services as the demand for educational technology increased. These providers contract with individual states to provide commissary services and then, as part of their contract, can market computing devices with educational content to incarcerated individuals (and their families) for individual study or for use in the correctional education program.

Some vendors have entered correctional education through the communications market. These vendors have developed secure network channels for facility phone and video conferencing that also can be used to provide educational content on mobile devices. Other vendors have started working with correctional education programs based on their knowledge of providing technology-based educational programming in conventional K-12 and postsecondary classrooms.

**Regardless of their origins, these vendors typically attain educational content for their mobile devices in one of two ways:**

- through direct download or "mirroring" of OERs available online (e.g., Khan Academy, Purdue OWLS, Open Courseware, Federal Trade Commission resources); this can require establishing agreements to provide hard copies of online content and recreating online resources in an offline environment.

- through licensed reseller agreements with established educational publishers, vocational training service providers, and other companies and organizations offering targeted reentry resources (e.g., CareerBuilder.com, Pearson Educational Services, Houghton Mifflin Harcourt, and ProLiteracy).

In addition to mobile device vendors, other vendors of advanced technologies are entering the market. For example, Google's Government Solutions Division is exploring ways in which ChromeBooks and Chrome Management Console can be used to facilitate secure Internet-based learning options for correctional facilities. Google is either currently in classrooms, or in the rollout phase of projects, in correctional facilities in Oregon, Georgia, and Texas. Google's approach differs from the tablet-focused programs in that Google partners with providers like Dell and Samsung to manufacture devices, but it is not in the business of selling hardware. Its contribution comes from its proprietary Management Console, built to align seamlessly with any Chrome device to configure individualized, secure access to each student user. The Chrome Management Console is accessible by an administrator through any device—computer lab stations, laptops, or tablets—that uses Chrome, Firefox, Safari, or Windows. The administrator can blacklist (block) forbidden URLs, while whitelisting education-focused resources. The administrator assigns each student his or her own sign-on for individual access to any approved sites. Regardless of which device students sign onto, only administrator-approved resources will be available to them on that device.

## Table 1: Mobile Device Vendors Providing Educational Technology in Corrections, 2014

| | Union Supply Group | Innertainment Delivery Systems (IDS) | JPay | Jail Education Solutions (JES) | Telmate | GTL | American Prison Data Systems (APDS) |
|---|---|---|---|---|---|---|---|
| **Hardware** | | | | | | | |
| Screen Size | 7" | 7" and 10" | 4.5", 7", and 10" | 7" | 7" | 10" | 7" and 10" |
| Security | Caching, asynchronous info transfer via chip or thumb-drive | White-listing, caching, secure connected | White-listing, caching, secure kiosk access, and tracking/locking ability | Secure connected | Secure connected | Secure connected | 3G/4G Verizon dedicated line, secure connected, white-listing, caching |
| Wi-Fi Capable | No | No | No | Yes | Yes | Yes | Yes |
| Messaging Capable | No | No | Yes | Yes | Yes | Yes | Yes |
| Remote Video Capable | No | No | Yes | No | No | No | Yes |
| Banking System | No | No | Yes | Yes | Yes | No | No |
| **Content** | | | | | | | |
| Employment Preparation (e.g., resume writing and online job sites) | Yes | No | Yes | Yes | No | No | Yes |
| Adult Basic Education | Yes | No | Yes | Yes | No | No | Yes |
| High School Equivalency Preparation and Assessments | Yes | No | Yes | Yes | No | No | Yes |
| Postsecondary Education | Yes | No | Yes | No | No | No | Yes |
| Library Services | Yes | Yes | Yes | Yes | No | No | Yes |

Note: This table is based on the best information available at the time this report was written and should not be considered a comprehensive list of all vendors providing education technology in correctional facilities.

# Successes and Challenges of Early Implementers

A growing number of corrections agencies and facilities have adopted one of the three approaches to providing educational technology in the classroom. The following are brief descriptions of some of these early implementers.

## Isolated Local Server (ILS)

### EXAMPLE 1 (ILS)

**Who:** Brian Walsh, the former associate dean of basic skills and corrections at Peninsula College in Washington state, managed the correctional education programs at Clallam Bay and Olympic corrections centers. Peninsula College provides instructors and students with technology-based instructional tools and resources to support integrated basic education and skills training.

**What:** To support their education services, the Peninsula College administrator and his staff established an isolated local server at the correctional facilities to house educational content.

**Why:** Washington State Department of Corrections does not allow correctional education students access to the Internet primarily because of security and public safety concerns.

#### Successes
- The ILS provides a secure virtual Web server that gives students and instructors offline access to thousands of websites.
- Teachers can use open education resources (OERs) to save time and cost.
- Canvas, an open-source learning management solution, delivers interactive educational materials.

#### Challenges
- There is no external Internet access, including no access to a wide array of online courses and assessments.
- Much time and effort are involved in identifying suitable content, which is approved on a case-by-case basis.
- Obtaining the required permissions from publishers to download their Web pages can be time consuming.
- Having access to educational resources only in the classroom is limiting educationally.

#### Looking forward
- Experiment with a flipped classroom approach using tablets, open-source technologies (e.g., Linux-based servers), and OERs (e.g., KaLite, an open offline version of Khan Academy).
- Implement a learning management system at each correctional facility, including providing guidelines for statewide deployment for nonskilled staff.

*For additional information, contact the Washington State Board for Community and Technical Colleges via http://sbctc.edu/.*

## EXAMPLE 2 (ILS)

**Who:** The Ohio Department of Rehabilitation and Correction's Ohio Central School System is partnering with Union Supply Group, a commissary company based in Los Angeles, California, and the Correctional Education Association to create educational content packages appropriate for high school equivalency and postsecondary course work within corrections classrooms and delivered in a clear-cased, locked-down tablet.

**What:** The tablet is a 7" Android-based device. Developers at Union Supply, in collaboration with overseas partners, modified the off-the-shelf model to be more corrections friendly. These modifications included developing a clear case, customizing tamper-resistant screws, modifying ports and cords, disabling Wi-Fi capabilities, and modifying content delivery mechanisms.

**Why:** Ohio has been ahead of most states in adopting educational technology to support correctional education (see Appendix B for Ohio's educational technology policy for prisons). It uses the restricted Internet approach to give students access to a limited number of pre-approved sites at work stations that operate like kiosks. The restricted Internet access is provided through a proxy server designated for students only; a separate proxy server provides staff with Internet access. This approach allows Ohio to offer incarcerated students access to online tutorials and college courses, legal research, and one-stop center resources. Adopting the tablet technology enables Ohio to continue to expand the educational technology resources currently available in its correctional facilities.

### Successes
- Secure 7" tablets are being used for asynchronous delivery of community college course work.
- Based on student surveys and classroom observations, students' digital literacy skills and confidence are growing.
- Two successful semester terms have been offered, with a more than 80 percent course completion rate.

### Challenges
- There are process issues with devices, such as with the file retention and file save features.
- No external Internet access for students is available on the tablets.
- Security requirements make updating content an arduous process.

### Looking forward
- Develop a portal with direct Internet access to allow education staff to more easily add education content and resources, and upload and download student work.
- Perfect offline delivery methods.
- Increase course participation and completion numbers.
- Expand educational program offerings to include more postsecondary and adult basic education coursework.

*For more information, contact the Ohio Department of Rehabilitation and Correction's Ohio Central School System via http://www.drc.ohio.gov/ocss/ocss_home.htm.*

# Point-to-Point Secure Line (PtPSL)

## EXAMPLE 3 (PtPSL)

**Who:** The Florida Department of Corrections has partnered with the Pensacola-based Smart Horizons Career Online Education (SHCOE), a fully accredited, online school district.

**What:** Florida Department of Corrections and SHCOE piloted a career online high school in some of Florida's correctional facilities to help incarcerated individuals obtain their high school diplomas, complete career certificates, and graduate with vocational skills that can be applied in a job post release. Content is delivered through the NexPort Campus Learning Platform via an encrypted hypertext transfer protocol channel. In addition to Florida Department of Corrections' standard security measures, SHCOE's technology partner, NexPort Solutions, has installed end-point security software at every computer lab.

**Why:** The Florida Department of Corrections' Office of Re-Entry is tasked with preparing incarcerated individuals for a successful integration back into the community upon release from prison. Its main objectives are to enhance public safety, reduce recidivism, and foster partnerships that support its mission. The ultimate goal is to keep those released from returning to prison.

### Successes
- The Florida Department of Corrections' data reporting and tracking functionality has been enhanced because of SHCOE's use of the NexPort Campus learning management system, which offers near real-time reporting and data access.
- For the first time in the agency's history, the Florida Department of Corrections' most recent agency-wide statistics included high school enrollment and graduation numbers in addition to those for General Educational Development (GED®) diplomas and vocational certificates.
- The online high school has provided an alternative for students struggling in a traditional classroom setting and for those having difficulty with the new GED®.
- The agency has installed software and hardware upgrades that will allow teachers to view multiple student computer screens, to remotely control or freeze student access to workstations, to communicate with students via instant messaging, and to transmit up to two desktop images to a large wall-mounted touch-screen display.

### Challenges
- Continuing to offer cost-effective access to technology in secure facilities is an ongoing resource challenge.
- Expanding content offerings and access to additional career certifications requires continued attention.
- The Florida Department of Correction's security updates have caused problems with accessing online course content, but these technical difficulties have decreased over time.

### Looking forward
- Expand the career online high school access to other Florida correctional facilities.
- Demonstrate an online/offline tablet app that can extend learning management system access to incarcerated individuals' residential areas.
- Review data to determine program effectiveness, outcomes, and impacts for program improvement and accountability purposes.

*For more information, contact the Florida Department of Corrections, Education Services via http://www.dc.state.fl.us/orginfo/education/.*

## EXAMPLE 4 (PtPSL)

**Who:** Illinois Department of Corrections is partnering with i-Pathways to provide its incarcerated students with GED® test preparation and its teachers with professional development to prepare them to integrate the use of technology in the classroom and model best practices of instruction.

**What:** i-Pathways worked with the Department of Corrections technical staff to revise delivery of its Internet-based alternative high school equivalency preparation curriculum by disabling the e-mail and messaging functions and setting up desktops in the 33 state institutions in locked-down, kiosk-mode with a secure network. Essentially, it created a very large LAN using the Internet. The staff also collaborated to provide instructors and educational administrators with a dedicated corrections support desk, ongoing outreach via e-mail and videoconferences, and distance learning tools (e.g., webinars).

**Why:** The state of Illinois retained Pearson Educational Services' GED® as its primary provider of high school equivalency certification in 2014 after it was announced that the GED® would be available only via online delivery beginning January of that same year. The Department of Corrections then began a comprehensive search for providers that could administer test preparation for the new online delivery mechanism. The Illinois Department of Corrections then collaborated with i-Pathways to modify its curriculum for distribution to students in secure classrooms.

### Successes
- The state implemented successful instructor preparation and professional development strategies for corrections by providing support for integrating technology in the classroom and preparing instructors to utilize the i-Pathways curriculum.
- The state led 33 institutions through curriculum changes in preparation for the GED® 2014 test.
- The state provided incarcerated students the opportunity to prepare for the GED® test using technology similar to what is used for the actual test.

### Challenges
- Preparing instructors to utilize new instructional technology requires expertise and funding.
- Transitioning from the GED® to a broader array of education services is a process.
- Issues related to deploying the GED® test in the correctional institutions must be addressed.

### Looking forward
- Explore using region-based peer mentors, who are available to work with instructors as needed.
- Build an instructional leadership cohort to share best practices and successes to promote increased student outcomes.
- Add additional instructional tools and support pieces to existing i-Pathways curriculum and continue to develop postsecondary coursework and other educational content.

## Restricted Internet Connection (RIC)

### EXAMPLE 5 (RIC)

**Who:** The city of Philadelphia has partnered with Jail Education Solutions (JES) (also known as Edovo, the name of its educational platform), a Chicago-based startup, to undertake a pilot program providing tablets to incarcerated individuals in select secure facilities. The city uses JES to provide literacy, postsecondary, and vocational programming, financial literacy, and cognitive therapy. JES is also used to provide trainings to staff.

**What:** The pilot program between Philadelphia and JES gives both male and female incarcerated individuals in the city access to more than 100 tablets. JES received a $30,000 supplement from the city to roll out the pilot. JES will eventually rent the tablets to users for $2 a day (other weekly, monthly, or unlimited packages will be available as well), which will allow the company to be self-sustaining. Edovo is securely designed for use in common areas and day rooms so access to education exists throughout the day. Edovo employs an incentive-based learning platform to reward users with points and certificates when they reach benchmarks. These points can be exchanged for free entertainment options — movies, music, and games — driving interest and engagement even with fringe students. "I had enough points to go play a game after finishing my first GED® class, but I was so jacked, I just kept going to the next lesson," said Julian C., an inmate in the Philadelphia Prison System.

**Why:** Traditionally, it has been difficult to incorporate technology into incarcerated individuals' lives. Jails often do not have space for a computer lab, and, if they do, they require significant monitoring, because these individuals cannot have unrestricted access to the Internet. Edovo's cost-defraying model is attractive to budget-constrained state and county systems, and is affordable for most incarcerated students.

#### Successes
- The city of Philadelphia initiated a creative solution by partnering with FastFWD, run by the Philadelphia Mayor's Office of New Urban Mechanics and the Wharton Social Impact Initiative at the University of Pennsylvania, to launch the prison projects.
- User progress tracking is available to prison and jail administration, courts, and community corrections organizations.
- Foundational support from the MacArthur Foundation and the Kellogg Innovation Network provides data-collection and analysis opportunities to further evidence-based practices.

#### Challenges
- Transitioning funding for continuing innovations from foundations to self-sustaining or government support is difficult to accomplish.
- Expanding services from one city to the state as a whole is a significant undertaking.

#### Looking forward
- Philadelphia seeks to be a state and national leader in openness to new technology to support educational gains in prisons and jails.

## EXAMPLE 6 (RIC)

**Who:** Oregon Youth Authority (OYA) Education Services, led by Education Administrator Frank Martin, is working in collaboration with Education Portal and utilizing online open education resources and college courses to create educational opportunities in Oregon's juvenile facilities.

**What:** OYA and its partners have created a secure delivery of computer-based OERs and massive open online courses (MOOCs) aligned with the College Level Examination Program (CLEP) college credit exams. Students take e-learning courses at their individual pace or with a study group and "test out" for college-level credit. OYA employs stand-alone computers, refurbished by incarcerated youths, to deliver e-learning instruction. In addition to MOOCs, course offerings consist of high school equivalency, GED® preparation, reentry programming, and other treatment options.

**Why:** This initiative enables computer-assisted instruction and self-paced learning that can be supervised by a person other than a licensed classroom teacher, defraying costs and allowing correctional facilities to expand their instructional course offerings.

### Successes
- Youths in the OYA program gain dual credit toward high school and college, outside of the CLEP testing option.
- Students have access to hybrid career/vocational courses and postsecondary credit-bearing coursework.
- Inside/Out volunteers and program alumni and facility correctional officers serve as instructors.
- Incarcerated youths exposed to computer-assisted instruction learned slightly more in reading and substantially more in math than students in similarly situated classrooms without access to technology enabled learning in the same amount of instructional time (facility documented).

### Challenges
- Transitioning Education Portal to a fee-based model means no longer offering free access to content.
- Securing funding sources is difficult and time consuming.
- Engaging community partners requires staff time and experience.
- Obtaining and refurbishing enough computer hardware equipment to accommodate classroom expansions are costly endeavors.

### Looking forward
- Explore partnerships with community colleges to proctor CLEP tests within secure facilities.
- Expand programming to corporate community partners, leading to internships, apprenticeships, and eventual employment.
- Further engage facility staff to participate more fully in developing additional program options.
- Develop direct access to community college, credit-bearing course options.

## EXAMPLE 7 (RIC)

**Who:** Five Keys Charter School, in collaboration with the San Francisco County Sheriff's Department and Adult Probation and American Prison Data Systems (APDS), launched a pilot in October 2014 with the office of probation. The pilot allows probationers to participate in reentry programming, to communicate with their probation officers, and to continue to participate in the educational courses and programming they began while incarcerated.

**What:** APDS worked with Five Keys Charter School, which provides educational services for the San Francisco Sheriff's Department and Probation Division, to digitize and deliver its curriculum and to electronically deliver applications, such as Khan Academy videos, K-16 assessment, remediation and high school equivalency programming and test preparation, literacy programming, substance abuse programming, career exploration and vocational training, the APDS National Corrections Library, law library services, the Straight-A-Guide recovery program, reentry resources, and educational games.

**Why:** California recently passed legislation requiring prison population realignment. This legislation, intended to address issues of overcrowding in state prisons by reallocating state prisoners serving terms less than five years to county jail facilities, has created a jail population with limited access to robust educational and other programming. The tablet pilot delivers more programming, for longer periods of time, and to a larger percentage of the jail population.

### Successes
- The pilot project allowed a secure, connected "ruggedized" mobile platform that includes education, wellness, and vocational files and videos (as described above) to be deployed.
- Five Keys' paper-based curriculum was digitized for tablet delivery in support of a flipped-classroom model.
- A corrections-specific digital lending library was launched that enables the jail system to offer more secure access (less risk of contraband transfers) to a larger selection of books for recreational, inspiration, and educational use.

### Challenges
- Scaling delivery to a larger incarcerated population and keeping staff adequately trained will take time and attention.
- Providing a 4G connectivity in certain jail locations to improve signal strength at facilities must be addressed.
- Making the system cost-effective and accessible at state and county budget rates is difficult.
- Managing the logistics associated with larger incarcerated student populations and high student turnover requires continued attention.

### Looking forward
- Permit incarcerated individuals to continue using tablets for a specified period following their release (this approach is currently being tested by the probation division).
- Allow probation officers to monitor their clients' program participation to inform probation decisions, such as determining whether an individual can be processed for release from supervision.
- Deploy large-scale educational and substance abuse programs in 2015.
- Plan for an efficacy study of the pilot programs.

# International Use of Technology in Correctional Education Delivery

A number of foreign governments — including the United Kingdom, Australia, and New Zealand — are exploring and implementing correctional education initiatives. Like those in the U.S., they are intended to provide incarcerated individuals with access to technology-based education and career resources to promote successful reentry (also referred to as "reintegration" and "resettlement"). These countries provide a good comparison for the United States because of similarities in their cultures, politics, and education and corrections systems.

**New Zealand's corrections system includes**

**18**
**prisons**

**&**

**approximately**
**8,500**
**incarcerated individuals**

## New Zealand's E-Learning Solution

In 2012, the New Zealand Department of Corrections undertook a pilot program to explore the effects of e-learning on improving educational outcomes for confined youths. Key features of this program include the following:

**Purpose:** E-learning is designed to support broader strategies for creating lasting educational and employment change, better public value, better outcomes for confined youths, better community outcomes, and reduced recidivism.

**Content:** The e-learning solution transitions delivery of literacy and numeracy assessments from the traditional pen-and-paper method to a secure, point-to-point Web-based platform. Additionally, the e-learning solution provides access to educational and vocational skill-building resources and programs using the secure delivery system. Students also can access the e-learning solution to take part in education and job training programs that were previously unavailable to them. The online e-learning pilot classes primarily focused on basic education skill-building and digital literacy training.

**Eligibility:** E-learning was piloted by 48 incarcerated students meeting specific mitigating criteria to lessen the risk of security breaches. Participating students took preliminary online diagnostic reading and numeracy assessments and were assigned remedial coursework on the e-learning platform.

**Security:** Student access was stringently managed throughout the pilot, as were all other access points to the e-learning system — from physical escorts, pat downs, and security wandings prior to classroom entry to tutor-led sign-on protocols. Students with information security–related convictions were not allowed to participate in the pilot.

**Availability:** Approval for a stage-one roll-out was granted on July 31, 2014. This will involve implementing 13 online e-learning computer suites at 10 prison sites through 2015. It also will include literacy and numeracy training and assessments, core educational programming, digital literacy, and job training and job search skills.

## United Kingdom's Virtual Campus

**United Kingdom's corrections system includes**

**138** prisons

**&**

approximately

**85,000** incarcerated individuals

The Virtual Campus (VC) was developed by the U.K.'s prison service manager Mark Taylor in 2007, with funding from several government ministers and design support from several software and hardware companies (i.e., CISCO, XA Solutions, and others). It was subsequently given ministerial sign-off in 2010 and was deployed across England and Wales. Key features include the following:

**Purpose:** The VC is designed to enhance classroom educational opportunities, diversify and individualize student learning, increase job readiness and job placement, and engage hard-to-reach students struggling in traditional classroom settings.

**Content:** In dedicated classrooms, students can access their current courses, other secondary and postsecondary e-learning courses, and a resume-builder program.

**Security:** Students using the VC are continuously monitored by trained staff or a trained VC education instructor.

**Messaging:** A secure relay messaging system allows students to send a message with a resume or other certificate to an appropriate advisor within the facility.

**Internet access:** An applications programming interface provides students with access to outside sites for job searching, such as Monster.com.

**Availability:** The VC is currently available to more than 25,000 incarcerated students in the United Kingdom.

## Australia's PrisonPC

With its prisons overcrowded and recidivism rates over 60 percent, Australia's state governments have been seeking solutions. Some facilities have contracted with PrisonPC, a private provider that has created a secure, Web-based education program. Key features include the following:

**Purpose:** The impetus behind the push for new solutions stems from the emerging understanding that managed reintegration strategies decrease the likelihood that reintegrating individuals will reoffend.

**Content:** PrisonPC delivers educational programming in basic literacy, numeracy, and digital literacy skill building for vocational training and job search practice in addition to other life skills and postsecondary coursework as identified on a state-specific basis.

**Security:** PrisonPC uses a hybrid model of content caching and white-listed site access management. It also allows prison staff to restrict Web access, filter e-mail, monitor centrally for security breaches and misuse, and remotely remove individuals' privileges (e.g., e-mail, television, and games) if rules are broken.

**Messaging:** PrisonPC provides tightly filtered e-mail that assists with family reintegration and enables incarcerated individuals to pursue job opportunities from within secure facilities.

**Availability:** PrisonPC has been used by multiple Australian facilities for six years and is currently being rolled out in an additional facility.

**Australia's corrections system includes**

**106** prisons

**&**

approximately

**33,000** incarcerated individuals

# Recommendations for Adopting Educational Technology in Corrections

To ensure that incarcerated individuals are well prepared to reenter society, and continue their education and career paths wherever they left off, we recommend that state corrections agencies, facilities, and their education partners consider the following recommendations for strengthening and expanding their correctional education services. These recommendations are aligned with the National Education Technology Plan's five goals for learning, assessing, teaching, infrastructure, and productivity, while focusing primarily on the policy and infrastructure changes that are necessary to meet these goals. For recommendations on how to apply advanced technologies in the adult education classroom, see *Connected Teaching and Personalized Learning: Implications of the National Education Technology Plan (NETP) for Adult Education* (Russell et al. 2013).

## ① LEARNING

All students will have engaging and empowering learning experiences both in and out of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society.

**To achieve this goal in correctional education, we recommend using advanced technologies to**

- help students develop and improve their computer and digital literacy skills;

- allow students to make educational gains in and outside of the correctional education classroom through computer-assisted instruction;

- provide students with access to library e-books and other library resources to improve literacy skills and encourage reading as a leisure-time activity;

- provide students with access to college courses and other online educational resources, including e-textbooks, and the ability to conduct online research to support their course work; and

- help students and other incarcerated individuals prepare for release (e.g., applying for jobs, financial aid, and benefits).

**The implications for policy and practice include**

- permitting students to use secure personal mobile devices both in and outside of the classroom; and

- providing students with restricted Internet access.

## ② ASSESSING

Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement.

**To achieve this goal in correctional education, we recommend using advanced technologies to**

- provide students with access to online assessments (e.g., online high school equivalency tests and industry-recognized certification exams) and digital badges; and

- help instructors and administrators with measuring student learning gains and challenges, evaluating program effectiveness, and driving program improvement.

**The implications for policy and practice include**

- creating an online network with assessment vendors and connecting to the Internet before and after assessments to upload test results;

- aligning assessment policy with community-based education programs, which are moving to an online-only platform for a number of assessments (e.g., CASAS); and

- creating an environment where data are regularly collected, analyzed, and used for program improvement purposes.

## ③ TEACHING

Professional educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for all students.

**To achieve this goal in correctional education, we recommend using advanced technologies to**

- equip instructors with tools and resources (e.g., OERs) to enhance the classroom experience;

- monitor student progress and individualize instruction through learning management systems and computer-assisted instruction;

- incorporate blended-learning, flipped classrooms, and other models and methods targeting multiproficiency-level adult students; and

- provide instructors with access to professional development resources and opportunities, such as communities of practice, to collaborate and learn from other instructors both inside and outside secure classrooms.

**The implications for policy and practice include**

- hiring instructors and staff who are comfortable with technology and regularly training them on technology advancements and security procedures;

- providing instructors with restricted Internet access in the classroom; and

- creating a collection or repository of resources that both meet security standards, and enable and encourage collaborative learning.

# 4 INFRASTRUCTURE

All students and educators will have access to a comprehensive infrastructure for learning when and where they need it.

**To achieve this goal in correctional education, we recommend using advanced technologies to**

- adopt mobile devices (e.g., tablets) that allows students to learn both inside and outside of the classroom;

- support the education continuum by ensuring that the education services students receive while incarcerated are aligned with community-based services; and

- provide a seamless transition for students as their correctional status changes by sharing data (e.g., transcripts, credits, and assessment scores) with other facility- and community-based programs.

**The implications for policy and practice include**

- permitting students to use mobile devices both in and outside of the classroom;

- providing facility-based instructors with educational technology tools that are similar to those available in community-based programs to ensure that curricula and instructional practices are well aligned; and

- creating data-sharing agreements among facility- and community-based education providers.


# 5 PRODUCTIVITY

Our education system at all levels will redesign processes and structures to take advantage of the power of technology to improve learning outcomes while making more efficient use of time, money, and staff.

**To achieve this goal in correctional education, we recommend using advanced technologies to**

- expand the reach of correctional education services to provide more incarcerated individuals with the knowledge and skills needed to obtain living-wage employment, become productive members of society, and exit court supervision upon release;

- track educational attainment and post-release outcomes to determine the effects of correctional education on job placement and retention, college transitions and persistence, and recidivism; and

- support non-education functions and activities at the facility to help mitigate cost.

**The implications for policy and practice include**

- determining what level of advanced technologies are appropriate for different facilities, types of offenders, and security levels;

- developing or joining state longitudinal tracking systems that allow for the ability to track students after release and document return on investment; and

- collaborating with other facility staff to identify and schedule other uses for the technology.

To achieve these five goals, corrections agencies will need to explore the various approaches to providing educational technology in correctional facilities. We encourage agencies and their education partners to find out more about the early implementers' systems and lessons learned, pilot one or more of the approaches in their facilities, identify innovative solutions to ongoing challenges, and share information and experiences with one another.

One group that has already formed around this very purpose is the Northwest Consortium for Open Resources in Special Circumstances (http://nwspecialcircumstances.org/). This group of educators developed a website designed to share their collective experiences with identifying and developing secure, cost-effective, and innovative ways to provide correctional education students and teachers with access to educational technology.

We encourage other states to consider similar efforts either by creating their own communities or building off of existing arrangements (e.g., the Literacy Information and Community System's regional professional development centers located at http://lincs. ed.gov/). We also encourage other stakeholders to support this important work. The more state corrections agencies, facilities, and their education partners communicate with one another as they research, plan for, and implement educational technology, the more likely their students, teachers, and programs will succeed.

# Appendix A:
## Information Technology Terminology

**Application:** A software program or group of programs designed for the end user of a technology device.

**Computer-assisted instruction (CAI):** Computer-based instruction activities for teaching educational content. CAI is also commonly referred to as e-learning.

**Computer networks:** A system that allows computers to exchange information.

**Digital literacy:** Having the knowledge and ability to use a range of technology tools for varied purposes.

**E-learning:** The use of electronic technologies to deliver part or all of an educational curriculum outside the traditional classroom, typically on the Internet.

**Firewall:** A system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both.

**Hardened equipment:** The removal of all nonessential software programs and utilities from the computer.

**Hardware:** The physical machinery and devices that make up a computer system.

**Information technology (IT):** Computers and telecommunications equipment for storing, retrieving, sending, and manipulating data on the Internet.

**Internet:** A global network connecting millions of computing devices.

**Kiosk:** An interactive, unattended, self-service computer terminal available for public use.

**Learning management systems (LMS):** A software application for the administration, documentation, tracking, reporting, and delivery of e-learning education courses or training programs.

**Local area network (LAN):** A group of computers and other devices dispersed over a relatively limited area and connected by a communication link that enables a device to interact with any other on the network.

**Network:** A system that includes communication capability that allows one user or system to connect to another user or system and that can be part of a system or a separate system. Examples of networks include LANs or WANs, including public networks such as the Internet.

**Open educational resources (OER):** Online educational materials that are in the public domain or introduced with an open license and, therefore, can be legally and freely used, adapted, and reshared by anyone.

**Router:** A physical device that joins multiple computers and networks together.

**Server:** A computer or computer program that provides services to other computer programs (and their users) in the same or other computers.

**Software:** The instructions used to run the computer and system, called "programs." There are two types of programs, applications and system software. Users work with applications (apps) (e.g., Web browsers, spreadsheets) while system software runs the computer (e.g., an operating system).

**Storage:** A permanent holding place for digital data. Storage can retain its content without power (e.g., USB disks, CDs, and solid state drives).

**Tablet:** A mobile computer with circuitry, a battery, and a touch-screen display in a single unit.

**Virtual circuit:** A path between points in a network that appears to be a discrete, physical path but is actually a managed pool of circuit resources from which specific circuits are allocated as needed to meet traffic requirements.

**Wide area network (WAN):** A computer network that connects geographically separated areas and provides a more secure means of transferring data than the public Internet.

**Workstation:** A personal computer connected to a mainframe computer.

# Appendix B:

## The Ohio Department of Rehabilitation and Correction's Policy on Internet Access to Prisoners

**A.** No prisoner in a private correctional facility, county correctional facility, municipal correctional facility, or correctional institution under the control of the Department of Rehabilitation and Correction shall access the Internet through the use of a computer, computer network, computer system, computer services, or information service, unless the prisoner is under direct supervision and is participating in an approved educational program that requires the use of the Internet for training or research purposes, and in accordance with this rule.

**B.** No officer, employee, or agent of a private correctional facility, county correctional facility, municipal correctional facility, or correctional institution under the control of the Department of Rehabilitation and Correction shall provide access to or permit a prisoner to have access to the Internet through the use of a computer, computer network, computer system, computer services, or information service, unless the prisoner is under direct supervision and is participating in an approved educational program that requires the use of the Internet for training or research purposes, and in accordance with this rule.

**C.** The Ohio central school system superintendent, or his or her designee, shall be the designated authority for the preapproval of Internet sites for authorized use. Only preapproved sites will be accessible on the computers used by prisoners in the approved educational programs under this rule.

**D.** For the Department of Rehabilitation and Correction, the Ohio central school system superintendent, or his or her designee, shall also be responsible for periodic review of the operation of the system, including users of the system and sites accessed by the system. The Ohio central school system superintendent, or his or her designee, shall use available technology or services to ensure that access to the Internet by inmates is restricted only to those sites preapproved under this rule.

**E.** Criteria by which inmates may be screened and approved for access or training involving the Internet shall include the following:

**1** Program status. Only inmates already enrolled in approved programs shall be eligible for Internet access under this rule. For the purposes of this rule, approved programs are: academic, vocational, release preparation, apprenticeship, advanced employment and training, and service learning programs.

**2** Institutional behavior. Inmates shall be eligible for Internet access under this rule only if the inmate has no guilty rule violations for a period of 90 days prior to approved Internet access, and maintains no guilty rule violations during the program.

**3** Security threat group status. No inmate with an active security threat group affiliation shall have Internet access under this rule.

**4** The inmate's current security classification. Only inmates in level one, level two, or level three classifications shall be permitted access to the Internet under this rule.

**5** The inmate's current offense of commitment and past criminal conduct. Inmates serving, or who have served, a sentence for a sexually oriented offense, or for any crime involving the use of the Internet or a computer to facilitate the commission of a crime, shall not be permitted access to the Internet under this rule.

**F.** For the Department of Rehabilitation and Correction, the Ohio central school system superintendent, or designee, shall have the discretion to deny access to the internet to inmates based on security concerns or the institutional behavior of the inmate on a case-by-case basis.

**G.** Officers, employees, or agents of a correctional facility shall be subject to appropriate disciplinary measures for conduct in violation of this rule, and are subject to prosecution under section 2921.44 of the Revised Code.

**H.** Inmates in a correctional institution under the control of the Department of Rehabilitation and Correction shall be subject to a rule 49 violation — destruction, alteration, or misuse of property — and are subject to prosecution under division (C)(2) of section 5145.31 of the Revised Code. Inmates in a private correctional facility, as defined in section 9.06 or 9.07 of the Revised Code, are subject to prosecution under division (C)(2) of section 9.08 of the Revised Code. Inmates in a county correctional facility, as defined in division (A)(3) of section 341.42 of the Revised Code, are subject to prosecution under division (C)(2) of section 341.42 of the Revised Code. Inmates of a municipal jail facility, as defined by division (A)(3) of section 753.32 of the Revised Code, are subject to prosecution under division (C)(2) of section 753.32 of the Revised Code.

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