Technology Competencies for college-ready students with visual impairments
Introduction

Using technology efficiently is essential for 21st-century students to flourish in education and beyond. Given the critical nature of these skills, the development of technology standards have been prioritized, created and adopted at the local level and world-wide. These resources often neglect the unique considerations of students with visual impairments. In response to the need for a more suitable resource for this population, professionals in technology and blindness education and rehabilitation from around the nation created Technology Competencies for college-ready students with visual impairments.

These Competencies are designed to begin the conversation between student and their team, including teacher and parent, to create and implement a plan ensuring competency in technology that will allow students with visual impairment to compete alongside their typically sighted peers as they plan for their lives after high school.

Further, these Competencies can guide students, teachers, families and transition counselors in advocating for timely (and early) development of these crucial skills and behaviors needed to meet the demands of our high-tech world and lives.

This will create greater readiness for the demands of college and career.
Purpose

These Technology Competencies provide parents, teachers (including general education teachers), transition counselors and students with a set of goals for students with visual impairments who intend to work and/or attend college or training after high school graduation.

Technology competency for this population must include the same skills and benchmarks that exist for every other student, as well as additional skills that are specific to their vision needs.

These Competencies are intended to drive coherent and rigorous planning for the assessment and training of students’ technology skills and to support the coordination of efforts between school-based training and those delivered via transition activities supported by state agencies. They may be used to highlight needed areas for growth, to monitor present levels of performance or to draft goals and objectives for Individualized Education Programs (IEPs).

To extend the impact of these Competencies, consider sharing them with general education teachers and anyone supporting student growth. This will help maintain high expectations for students and to better prepare them for the skills assumed to be mastered for their post-secondary plans.

Students must be adequately prepared with the fluency, competence and confidence in the many interrelated technology skills necessary to manage the demands of college and career that their typically sighted peers have already acquired over many years, in many environments. Exposure across different types of classes, problem-solving situations and experiences help to create effective, confident technology users. These skills are expected to be well-established in the college and work world.
Key considerations

While these Competencies are aimed at high school students, we recommend activities that begin to build these skills throughout pre-K to 12th grade. Early exposure to and practice with these skills (e.g., typing and laptop use) will help to create an ease and confidence that can only be acquired with time and experience. Generally, students with typical vision acquire foundational technology skills by the end of elementary school. In order to learn at the same pace, with the same expectations for work production and learning, our students with visual impairments must have the same opportunities to acquire and work with technology skills throughout school in order to be successful in their post-secondary plans.

Given the unique profiles of students with vision impairments and the many devices and software available, specific tools are not mentioned in these Competencies. You can find extensive supports and resources for students with different profiles on the Paths to Technology website.
Proper equipment and training

Having the skills and experience with a wide range of tools to access information takes time, exposure and training.

Each individual student may emerge with their own opinion about preferred tools, but to be able to manage the day-to-day demands of college or career, laptop skills, in addition to others, are essential. For students in the K-12 system, the provision of a laptop with enough processing speed to run a current version of a screen reader provides a critical step toward both independence and fluency with the skills they will need in the future, without the lag that comes from old, outdated equipment.

Use of tablets such as iPads for students with visual impairments is particularly common and a game changer for many students. On its own, however, this should not be considered an adequate tool for college. Further, the use of VoiceOver on an iPad is markedly different than that on a laptop and can mislead students into thinking that they “know” this screen reader across devices, when, in fact, they do not. Additionally, braille note taking devices provide excellent access to braille for certain types of files, but not all.

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That’s why students need a range of skills and tools they can use to independently access the broad range of information available. A student’s singular preference for one tool should not be used as an excuse that a document or site is inaccessible.

Being a “tech native” is essential for all students. By introducing students with visual impairments to these tools early, we can support them in keeping pace with their typically sighted peers.

Training to use multiple devices effectively and efficiently takes time. Starting early, introducing typing skills and orientation to the essential elements of technology (e.g., start menu, problem solving, updating applications, online safety, among many others), will help to make this knowledge foundational, and allow students to evolve with the inevitable evolution of the technology.
How to use

• This tool can be used at any point in a student’s development. While it is targeted toward high school students, the Competencies may be used for future planning with any age. By reviewing this list of skills, a teacher of the visually impaired can develop a plan to integrate technology training into their students’ IEP goals, as well as support general education teachers with appropriate, challenging expectations and demands to match those of the student’s typically sighted peers.

• If a student qualifies and is enrolled with their state’s commission for the blind, their parents should work together with a vocational rehabilitation counselor and school to ensure that programs are available to meet their child’s needs.

• This tool can also serve as an excellent “conversation starter” with a student who has indicated that they wish to attend college or pursue competitive employment, or for a student with adventitious vision loss, to identify and prioritize next steps. It can help a young student understand the layers of skills that they can acquire over time to meet their goals. For all, this can help ascertain if a student is keeping up with their typically sighted peers, allowing equity in access to the same tools, resources and Competencies.
These general Technology Competencies can be used in conjunction with the academic and executive functioning Competencies identified in Perkins’ High School Checklist for College Readiness by Skill.

In college, students should be prepared to read up to 100 pages per week of college-level material, independently. Students should have skills to take reading notes, as well. Finally, students should anticipate writing 5-10 page papers, fully formatted, with regularity, in a full-time college load. While a student’s efficiency will vary, pace, accuracy and effectiveness (e.g., reading and note taking without visual fatigue) are critical skills for effective engagement for college and career readiness.

- Uses a variety of mainstream and assistive devices, as appropriate, including but not limited to a laptop, tablet, notetaker, video magnifier, braille display and smartphone.

- Identifies, selects and uses primary and secondary devices (laptop, tablet, notetaker, etc.), as appropriate for specific tasks, in order to access, manage and create documents, information and materials.

- Types between 45-60 words per minute using a QWERTY keyboard.

- Uses basic and advanced features of popular applications and software including word processors, spreadsheets, presentation tools and forms.

- Cares for and manages technology, including setup, cleaning and troubleshooting.
• Follows social etiquette when using technology to minimize distraction of others.

• Uses key functions of email and applies etiquette norms when sending messages.

• Cultivates a social media presence for personal and/or future professional use.

• Actively monitors personal content online and offline for digital safety.

• Practices safe and responsible sharing of information, data and opinions online.

• Researches and compares products before purchasing, including prices, accessibility, functionality, portability, set up, usability and durability.
Technology Competencies

Access

- Selects and uses appropriate software and hardware accessibility features and settings to meet needs.

- Uses appropriate technology including but not limited to text-to-speech, braille displays and magnification to maximize reading fluency and comprehension and to minimize discomfort such as eye fatigue.

- Understands, applies and communicates accessibility needs and best practices.

- Converts materials into accessible formats and/or preferred formats.
Technology Competencies

• Uses multiple devices at once to perform academic tasks, such as taking notes while reading.

• Demonstrates ability to use multiple devices to maximize efficiency across task, time and setting.

• Selects and uses strategies for organizing print and electronic information.

• Creates task lists and tracks task completion by using preferred device.

• Uses accessible calendars, reminders, alarms and timers to manage time and tasks.

• Accesses reading materials in preferred formats on multiple devices.

• Uses the Internet to locate, retrieve and organize information while recording sources.

• Optimizes research methods using online, reliable, peer-reviewed resources.
Technology Competencies

Independent living

- Selects and uses tools such as magnification or optical character recognition (OCR) to access print information like receipts, labels and documents.

- Organizes wardrobe and identifies key features such as color and washing directions with the use of appropriate tools.

- Identifies recreation and leisure activities of interest using websites, apps and other tools.

- Incorporates technology in wellness activities such as monitoring heart rate, tracking steps and journaling.

- Incorporates technology to increase independence with cooking and cleaning skills.

- Shops by selecting and using tools for in-person and online purchases, including delivery services.

- Selects and uses tools to identify, organize and use household items such as medications, cleaning products and cooking supplies.

- Incorporates technology to create a budget, track spending, pay bills and access a personal bank account.

- Accesses visual information in the community such as signs, menus and addresses through the use of object identifiers and visual interpretation services.

- Coordinates and assesses visual presentation (hair, clothing, etc.) through the use of technology.

- Selects and uses appropriate tools such as magnifiers and visual interpretation services as appropriate to monitor and promote personal safety.
Orientation & mobility

- Travels safely using appropriate mobility devices and ocular aids such as canes, monoculars and video magnifiers.

- Orients to an environment and plans routes to destinations using accessible GPS and wayfinding tools.

- Uses technology to preview a new area, learn what is in the area, build a mental map and plan the trip.

- Uses portable devices such as cell phones, navigation systems and other standalone products to orient and travel safely in an environment such as an office, street or store.

- Uses hands-free technology (such as voice guidance and headphones) to promote safe travel (such as reading braille signs and using a cane effectively).
About College Success @ Perkins

Since 2017, Perkins School for the Blind has spearheaded a movement to explore and overcome the barriers to success for blind and visually impaired students in the 21st century.

And what our experts have discovered is that in order to be prepared for the ever-increasing expectations for technology skills, literacy skills and more, early planning for the transition to college or the workplace is absolutely critical.

Through the College Success initiative, our objective is to promote the value of early preparation and planning while empowering educators with the tools they need to meet the ever-changing needs of today’s students and supporting the students and families who are currently working through this transition.

Perkins continues to offer a direct service in this space. Compass is an innovative, nine-month virtual enrichment program designed to prepare blind and visually impaired high school students for independence in college and career. Through group work and individual coaching for the student and their educational team, we will work to fill the often-overlooked gaps in college and career preparation.

Want to learn more?

To learn more, visit Perkins.org/College or contact us at CollegeSuccess@Perkins.org.