

## Chapter 62

# Assistive Technology in Higher Education

**Susan B. Asselin**  
Virginia Tech, USA

### ABSTRACT

*Assistive technology makes a task possible for an individual with a disability, while technology makes a task easier for a non-disabled person. Increasing enrollments of students with disabilities have challenged our institutions to provide opportunities to participate in higher education by having access to assistive technologies and universally designed instruction. Provision of accessible learning environments is a shared responsibility between disability services, information technology, and faculty. College students find themselves in an environment where they encounter negative attitudes and a need to self advocate for critical support services to insure access to learning. Recent trends hold promise for removing these barriers including universal design in instruction, mandated web accessibility, multiple technologies for e-learning, universal accessibility of learning tools, and opportunities for professional development of faculty and staff.*

### INTRODUCTION

Access to postsecondary education for learners with disabilities can best be achieved through partnerships between students, disability service providers and instructional technology professionals. It is critical that these partners work collaboratively to promote positive academic and career outcomes. Growing numbers of college students with disabilities challenge our institutions to find ways to use technology to create more inclusive learning

environments. This chapter will explore how the use of assistive technology in higher education offers students with disabilities opportunities to participate and benefit from an education. While access to the college is enhanced by assistive technology, there are potential barriers that must be addressed in the academic environment. Solutions to access include implementing universal design in instruction, designing accessible information technology and e-learning, and delivering professional development. Finally, innovations and trends in assistive technology will raise the bar and continue to challenge higher education.

DOI: 10.4018/978-1-4666-4422-9.ch062

## **BACKGROUND**

Colleges and universities are serving an increasing number of diverse students, including learners with disabilities. An estimated 11% of undergraduate and 7% of graduate students attending college report having a disability. The largest enrollments are among students with learning disabilities, attention deficit hyperactivity disorders and returning veterans with newly diagnosed disabilities. Of these students, 21.9% had mental illness or related disorders, 25.4% had physical disabilities, 17.3% had health impairments, 11% had attention deficit disorder, 7.5% had a learning disability, 5% had hearing impairments, 3.8% had visual impairments and 7.8% were listed as other disabilities (National Center for Education Statistics, 2008). In the past, higher education served primarily individuals with sensory or mobility needs, however these data represent a student population with a wider range of disabilities, many who have “hidden” or cognitive disabilities (Horn & Berkold, 1999).

The Government Accountability Office (2009) reported an increasing number of students with autism, medical conditions and returning veterans with traumatic brain injury, post-traumatic stress disorders and mobility impairments. Another population expected to grow will be students with intellectual disabilities seeking a non-degree program focusing on life and functional skills. Growing numbers of students with invisible learning disabilities led to a focus on individual learner strengths and compensation for limitations (Scherer, Sax, Vanbiervleit, Cushman & Scherer, 2005; Peterson-Karlan & Parette, 2005). The introduction of accommodations that focus on characteristics is a more person centered approach since regardless of diagnostic labels, individuals with disabilities may experience other limitations, vary in functioning levels, and need different supports across settings.

## **Legislation**

Historically, individuals with disabilities were stigmatized in our society and institutions. Prior to the passage of the 1973 Rehabilitation Act, participation was viewed less favorably in our schools, colleges and communities. Hallmark federal legislation broke down barriers and reduced the social stigma attached to a disability. The Americans with Disabilities Act (ADA) of 1990, extended protections against discrimination and mandated full access in employment, communications, transportation, recreation and facilities. The ADA further clarified the definition of a disability as a “physical or mental impairment that substantially limits one or more major life activities.” This mandate reflected a shift from focusing on disabilities as a deficit to recognizing disability as a normal part of life.

Over the past, thirty years the percentage of students with disabilities entering colleges and universities has more than tripled. Institutions of higher education are required to insure that individuals with disabilities are not discriminated against and are offered opportunities to benefit from and participate in a full range of services, including reasonable accommodations. Unfortunately the outcomes for students with disabilities are not as positive as their peers since they still lag behind in completion of a college degree (Murray, Goldstein, Nourse, & Edgar, 2000; Stodden, 2001). Without a postsecondary education, individuals are at a distinct disadvantage in the job market, reducing their ability to earn an adequate salary and contribute to society. If we create more inclusive learning communities in higher education, students with disabilities will experience increased opportunities for success.

Assistive technology is increasingly available to college students, thus enabling them to participate and benefit from higher education. As early as 1973, Section 504 of the Rehabilitation

11 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:  
[www.igi-global.com/chapter/assistive-technology-in-higher-education/80668](http://www.igi-global.com/chapter/assistive-technology-in-higher-education/80668)

## Related Content

---

### Criteria of Development of Adaptive Didactic Games for People with Intellectual Disability

Eduardo César Contreras Delgado and Isis Ivette Contreras González (2014). *Assistive Technologies: Concepts, Methodologies, Tools, and Applications* (pp. 1313-1331).

[www.irma-international.org/chapter/criteria-of-development-of-adaptive-didactic-games-for-people-with-intellectual-disability/80675](http://www.irma-international.org/chapter/criteria-of-development-of-adaptive-didactic-games-for-people-with-intellectual-disability/80675)

### Internet of Medical Things in Secure Assistive Technologies

B. Santhosh (2023). *AI-Based Digital Health Communication for Securing Assistive Systems* (pp. 244-270).

[www.irma-international.org/chapter/internet-of-medical-things-in-secure-assistive-technologies/332964](http://www.irma-international.org/chapter/internet-of-medical-things-in-secure-assistive-technologies/332964)

### A Parent's Guide to Support Technologies for Preschool Students with Disabilities

Laura Baylot Casey and Robert L. Williamson (2014). *Assistive Technologies: Concepts, Methodologies, Tools, and Applications* (pp. 1340-1356).

[www.irma-international.org/chapter/a-parents-guide-to-support-technologies-for-preschool-students-with-disabilities/80677](http://www.irma-international.org/chapter/a-parents-guide-to-support-technologies-for-preschool-students-with-disabilities/80677)

### The Use of Mobile Technologies for Students At-Risk or Identified with Behavioral Disorders within School-Based Contexts

Frank J. Sansosti and Peña L. Bedesem (2015). *Recent Advances in Assistive Technologies to Support Children with Developmental Disorders* (pp. 114-127).

[www.irma-international.org/chapter/the-use-of-mobile-technologies-for-students-at-risk-or-identified-with-behavioral-disorders-within-school-based-contexts/131331](http://www.irma-international.org/chapter/the-use-of-mobile-technologies-for-students-at-risk-or-identified-with-behavioral-disorders-within-school-based-contexts/131331)

### Assistive Systems for the Workplace: Towards Context-Aware Assistance

Oliver Korn, Markus Funk and Albrecht Schmidt (2015). *Assistive Technologies for Physical and Cognitive Disabilities* (pp. 121-135).

[www.irma-international.org/chapter/assistive-systems-for-the-workplace/122906](http://www.irma-international.org/chapter/assistive-systems-for-the-workplace/122906)