

Chapter 35

Wearables and People With Disabilities: Socio–Cultural and Vocational Implications

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ABSTRACT

Assistive technology including wearables, have a positive impact towards changing the lives of people with disabilities. Advances in glass, electronics, sensors, and a wide range of digital devices are substantially improving how people with disabilities (PWD) navigate the world, and allow greater possibilities for PWD who are competing in today's job market. This chapter explores the following topics related to disabilities: Historical developments changing the lives of people with physical and sensory disabilities, laws pertaining to technology access, technological advances in wearables for individuals who are deaf, blind, paralyzed, or other mobility and speech impairments, socio-cultural and vocational implications of wearables for individuals who are deaf, deaf-blind or speech impaired, and the applications needed for wearables to meet the on-the-job demands.

INTRODUCTION

In the past fifty years, particularly since the advent of the computer and Internet, great technological strides have been made to increase social and vocational accessibility for people with disabilities. Such advances have demonstrated the importance of ensuring PWD can access every facet of society a non-disabled person has access to, from everyday activities promoting independent living skills to vocational and recreational activities. The concept of accessibility is addressed by federal mandates, including the Americans with Disabilities Act of 1990 (ADA) and the Telecommunications Act of 1998. This legislation states that it is the right of PWD to have access to technology in order to live full, productive lives.

DOI: 10.4018/978-1-5225-5484-4.ch035

This chapter begins by reviewing sociocultural and vocational issues faced by PWDs. A brief overview of federal mandates supporting technological accommodations will follow. Discussion of the historical contribution of essential assistive technology for people with sensory disabilities (visual impairments and people with hearing loss, including deaf, deaf-blind, hard of hearing and late-deafened individuals) and mobility disabilities will be explored. Current developments in wearable technologies for other disabilities will be reviewed. A section on the perceived impacts of technology and wearables on vocational and sociocultural aspects of living with disability will be provided, concluding with issues on the barriers to the use of wearables for PWD.

The objectives of this chapter are to:

1. Familiarize the reader with the historical impact of significant assistive technologies for people with disabilities;
2. Review some current wearables assisting people with disabilities on a day-to-day basis;
3. Discuss the potential sociocultural impact of the use of wearables for people with communication disabilities who desire increased interactions with other people;
4. Provision of an overview of the current job market for people with disabilities;
5. Review potential wearables still in developing stages; and
6. Review barriers obtaining and using wearables that PWD experience, and potential solutions offered.

SOCIOCULTURAL AND VOCATIONAL IMPLICATIONS OF DISABILITY

Nearly one in five people in the United States are reported to have a disability (Bertoni, 2012). While some people are born with a disability, almost everyone is at risk of experiencing a short-term or long-term disability, whether through accidents, employment-related injuries, illnesses, disease, or aging.

Despite the public's increased exposure to PWD in the media, laws that protect disabled people from discrimination, and federal mandates ensure functionally equivalent access to social and work environments, there remains a barrier towards acceptance of people with disabilities by mainstreamed society. In a book chapter entitled *On the origins of negative attitudes toward people with disabilities*, Livneh (2012) proposed several theories behind the misperceptions of society about PWD. One of these theories was sociocultural conditioning. According to Livneh, social and cultural norms, standards, and expectations create negativity towards the disabled population. Some examples are listed below.

- Emphasis on the “body beautiful”, “body whole”, youthfulness and physical prowess, creating high societal expectations which members of society are expected to conform.
- Judgment, especially in Western cultures, on personal productiveness and achievement. People with disabilities are perceived as unable to be socially and economically competitive, particularly in capitalist based nations
- A negative attitude towards people of certain socioeconomic levels, particularly those who are perceived to be abusing welfare. People with disabilities are considered largely at poverty level and highly unemployable.
- Negativity around members of society who are part of the “sick role” mentality. The perspective is one of playing sick to be exempt from normal societal obligations and responsibilities, particu-

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