

Cognitive Science and Technology Applications in the Rehabilitative Care of Children with Intellectual and Developmental Disabilities

Nemati, S.

Extended Abstract

Aim

Intellectual and developmental disabilities are neurodevelopmental conditions that impact a person's coping and learning abilities. Various interventional strategies have been employed to aid these populations. Cognitive science and technology applications are one of the most significant approaches in this field in recent years. In a similar vein, the purpose of the present study was to examine the implementation of cognitive science and technology in the field of intellectual and developmental disabilities.

Methodology

The research design consisted of a systematic review. The PRISMA model will be used to examine research findings regarding the variables of science and cognitive technologies in the rehabilitation of children with intellectual and developmental disabilities. In a similar vein, a systematic review study was conducted using cognitive science and technologies keywords and intellectual and developmental disabilities, intellectual disabilities, mental retardation, cognitive disabilities, down syndrome, and autism spectrum disorder from web the data (Pupmed, Springer, ProQuest, Scopus, Elsevier, Science direct, & Google Scholar) from 1985 to 2022, in accordance with the research objectives of the current study. To identify and cover more articles published after searching databases, a number of reputable periodicals in this field, including 27 articles out of 52, will be manually searched (Hand Searching) in order to identify and cover more articles.

Findings

Personal support technologies such as web trek, assisted care systems, and residential assisted care systems such as smart home, smart transportation system are like global positioning system, Following the principles of universal design, personal robots, and virtual technologies are applied examples of cognitive science technologies in the field of intellectual and developmental disabilities.

Conclusion

Applied cognitive technology enables people with cognitive disabilities to function successfully in inclusive environments, increase their participation in tasks and activities, and improve their quality of life through social inclusion and autonomy through research and development of technological supports. Access to electronic and information technology has the potential to promote academic and professional success for individuals with intellectual and developmental disabilities. For instance, the use of virtual reality for the education of individuals with cognitive disabilities can circumvent the disadvantages of real-world educational situations, such as cost, safety, and accessibility. Using virtual technologies in the classroom can be highly motivating for students, as it can make abstract learning concepts more concrete, enable students to progress through an experience at their own pace, and encourage active participation as opposed to passive observation. In addition, the skills learned in virtual environments can be effectively transferred to real-world situations in order to create engaging and motivating sports opportunities for residential activities as well as to provide guidance for adults with disabilities. Cognitive impairments and the elderly can also be accommodated. People with intellectual and developmental disabilities must have access to technology in order to live independently and achieve greater success. The significance of electronic and information technologies in all people's lives has increased dramatically over the past decade and will continue to rise in the near future. Therefore, it is suggested that cognitive technology be developed and utilized for the rehabilitation of individuals with developmental disabilities, including the group of intellectual and developmental disabilities.

Keywords: Cognitive Science and Technologies, Intellectual and Developmental Disabilities, Rehabilitation.