

## Learning Programming for Hearing Impaired Students via an Avatar

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**Abstract :** Deaf and hearing-impaired students face many obstacles throughout their education, especially with learning applied sciences such as computer programming. In addition, there is no clear signs in the Arabic Sign Language that can be used to identify programming logic terminologies such as while, for, case, switch etc. However, hearing disabilities should not be a barrier for studying purpose nowadays, especially with the rapid growth in educational technology. In this paper, we develop an Avatar based system to teach computer programming to deaf and hearing-impaired students using Arabic Signed language with new signs vocabulary that is been developed for computer programming education. The system is tested on a number of high school students and results showed the importance of visualization in increasing the comprehension or understanding of concepts for deaf students through the avatar.

**Keywords :** hearing-impaired students, isolation, self-esteem, learning difficulties

**Conference Title :** ICEDHI 2019 : International Conference on Education of the Deaf and Hearing Impaired

**Conference Location :** Paris, France

**Conference Dates :** June 25-26, 2019