Improving Communication for the Visually Impaired through an Innovative Arabic Writing System

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Visual impairment is a major global health problem. In 2017, WHO estimated that there were 253 million people worldwide with this ailment. According to the journal of the American Medical Association, the prevalence of visual impairment in the Saudi population is 9.3%. Learning braille by families of students with visual impairments remains a major obstacle, which precipitates several communication issues. Moreover, difficulties for the students themselves lie in learning braille with languages that include diacritical marks; consequently, affecting their academic progress. My main objective of this project is to help improving life quality of these individuals, and the focus is to advance their social productivity and adaptation. This was accomplished through creating a new simpler Arabic writing system using geometrical shapes. As a part of this project, fifteen individuals with visual impairments were interviewed and tried this new writing system; two of them were adults between 25 and 40 years old while the rest were students from 9 to 17 years old. Additionally, 100 individuals with visual impairments completed a survey. The data showed that students learned this system in two hours in comparison with students that mastered braille in a few months. This shows that this system is easier to learn and subsequently saves time and effort. The most important value added to this project is that diacritical marks were combined with the alphabet, thereby considerably reducing book sizes compared to braille-written books. This project presents a novel system that helps people with visual impairments to increase their confidence and independence.

Awards Won:
Third Award of $1,000
American Psychological Association: Third Award of $500