

- **Name of the study:** Optimal Graphic Representation - Can images (similar to symbols) be used as an appropriate graphic representation (in online environments) for making information accessible to people with intellectual and cognitive disabilities?
- **Year:** 2026
- **Type of research:** Research
- **Catalog Number:** 890-671-2022
- **Authors:** 'Michlol' unit, Shalem Foundation.
- **Research Authority:** Shalem Foundation.

Abstract

This study was carried out by 'Michlol' - the Assessment and Measurement Unit of the Shalem Fund

This study was conducted as a follow-up to a survey examining information accessibility needs among people with intellectual and developmental disabilities (IDD) in public spaces. The survey highlighted the importance of signs and pictures as means of supporting orientation and information comprehension. The present study aimed to examine whether pictures can serve as an effective graphic representation to a similar extent as symbols for people with intellectual or cognitive disabilities, by comparing recognition rates and response times for terms presented as symbols and as photographic images. The study included 114 adult service recipients with mild intellectual disability or cognitive disabilities from day and vocational settings in the Jewish population. Each participant was presented with eight terms - four nouns and four action words. Each term was presented once as a symbol and once as a picture, and participants were asked to identify the corresponding graphic representation.

The findings indicate high recognition rates for both symbols and pictures, with no statistically significant difference in the time required to identify the two types of representations for most of the terms examined. The main exception was the term "cinema," for which the picture was recognized at a higher rate and more quickly than the symbol. These findings suggest that pictures selected according to the principles established in the study may serve as an alternative or complement to symbols for making information accessible in digital environments, and that symbols do not demonstrate a consistent advantage over pictures. At the same time, the findings should be interpreted in light of the study's limitations, including

the limited number of terms examined, the characteristics of the sample, and the study's focus on digital environments and the initial recognition of graphic representations.

The findings may have practical implications for organizations involved in cognitive accessibility, particularly with regard to the use of pictures in online environments and the development of principles for selecting optimal pictures. The increasing availability of image-generation tools, including artificial intelligence technologies, expands the possibilities for creating adapted visual representations. Further research is nevertheless needed to examine the use of pictures and symbols in real-world contexts and non-digital environments, as well as the effect of context on the interpretation of graphic representations. Continued development of knowledge in this field may contribute to the formulation of research-based principles for selecting graphic representations and to improving the accessibility and effectiveness of information for people with intellectual and cognitive disabilities.

Keywords

Cognitive disability | Information accessibility | Symbols | Images | Online environment.

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