

Área: EDU

## Alternatives in chemistry teaching for blind students – TABPER 3D PROJECT

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### Highlights

Strategy for promoting inclusion in school environments. Development of inclusive and accessible materials to facilitate the understanding of chemistry. 3D pieces containing essential information about chemical elements, accompanied by an interactive e-book with audio description features.

### Resumo/Abstract

The 3D Periodic Table extension project aims to promote inclusion and accessibility in chemistry education through the creation of three-dimensional pieces featuring Braille inscriptions with basic information about chemical elements. The pieces are accompanied by an audio described e-book, accessible via a QR code attached to each model. The initiative seeks to make the learning of chemistry more accessible to people with visual impairments while providing an inclusive educational experience for all audiences. With the help of AutoCAD® software, the template was designed, and the 3D modelling of the pieces was completed, incorporating essential information about each element, such as atomic number, chemical symbol, atomic mass, physical state, period, and group. The pieces were printed using a filament-based 3D printer. At the same time, the virtual book was created using tools such as Canva. For the preparation of the e-book content, several sources were consulted, with two main references standing out: Wonderful Life with the Elements: The Periodic Table Personified (Yorifuji, 2013) and what are chemical elements for? (Vaitsman, 2001).



Figure 1: 3D-printed pieces



Figure 2: Layout of the e-book

At this stage, several pieces have already been completed according to the proposed model. With the e-book fully digitized and produced, the project is now advancing to the audio description recording phase. Subsequently, the catalogued pieces will undergo additional testing and evaluation to ensure high-quality standards and material excellence.

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