

тикой 'осязание' для описания характера, а также таких проявлений эмоционального состояния, как, например, тон, голос, взгляд. Для прилагательных русского, белорусского и немецкого языков со значением 'холодный' была отмечена следующая двухступенчатая модель семантической деривации: 'холодный' → 'лишенный эмоций' → 'контролируемый разумом' (рус. *холодное решение*; бел. *халодная разважлівасць*; нем. *eine kühle Vernunft* 'холодный разум').

Развитие полисемии по метонимическому типу осуществляется на основе одноступенчатых и многоступенчатых проекций, а метафорическая деривация носит преимущественно одноступенчатый характер.

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RESEARCH OF THE DURABILITY OF 3D BRAILLE INSCRIPTIONS

Over the past decades, interest in literature written in Braille has declined sharply, which is directly related to a decrease in the literacy level of visually impaired people. For example, the number of visually impaired schoolchildren who can read in Braille has decreased by almost 40% over the past 50 years. The exacerbation of this problem is primarily due to the high cost of manufacturing printed products in Braille.

The ability to model and manufacture such products for a relatively low price and, moreover, in the shortest lines, is realized using 3D printing technology.

When using three-dimensional printing of Braille font, the most frequently used method of fused deposition modeling is the most common due to the price-quality ratio. But it allows you to get clear tactile copies with a special textured surface, so necessary for the perception of information by blind people. In addition, 3d printing technology uses environmentally friendly materials for the formation of tactile elements, which is especially important in the manufacture of educational materials for children, as well as labels on packaging of food products [1-4]. Since the elements of the Braille font are constantly in direct tactile contact, manufacturers are faced with another requirement, such as providing high durability of relief items. Therefore, the aim of our research was to establish the operational stability of the Braille font obtained by 3D printing. For this purpose in this work,

the research of the change in the geometric parameters (height and diameter) of Braille dot in the process of mechanical wear is carried out.

As a result, we received an array of data on the change of these indicators, which was processed using the software package Statistica 13. The research allowed characterizing the dynamics of changes in the indicators of wear resistance of relief-dot elements. With the help of an electron microscopy, the nature of the destruction of relief elements structure was recorded. The conducted experimental researches allowed determining the value of the operational stability of Braille characters, depending on the intensity of their use, which makes it possible to predict the durability of tactile inscriptions obtained by the method of three-dimensional printing.

LITERATURE

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