3D Text Toys: Creative Approach to Experiential and Immersive Learning for World Literacy

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Abstract : 3D Text Toys is an innovative and creative approach that utilizes 3D text objects to enhance creativity, literacy, and basic learning in an enjoyable and gamified manner. By using 3D Text Toys, children can develop their creativity, visually learn words and texts, and apply their artistic talents within their creative abilities. This process incorporates haptic engagement with 2D and 3D texts, word building, and mechanical construction of everyday objects, thereby facilitating better word and text retention. The concept involves constructing visual objects made entirely out of 3D text/words, where each component of the object represents a word or text element. For instance, a bird can be recreated using words or text shaped like its wings, beak, legs, head, and body, resulting in a 3D representation of the bird purely composed of text. This can serve as an art piece or a learning tool in the form of a 3D text toy. These 3D text objects or toys can be crafted using natural materials such as leaves, twigs, strings, or ropes, or they can be made from various physical materials using traditional crafting tools. Digital versions of these objects can be created using 2D or 3D software on devices like phones, laptops, iPads, or computers. To transform digital designs into physical objects, computerized machines such as CNC routers, laser cutters, and 3D printers can be utilized. Once the parts are printed or cut out, students can assemble the 3D texts by gluing them together, resulting in natural or everyday 3D text objects. These objects can be painted to create artistic pieces or text toys, and the addition of wheels can transform them into moving toys. One of the significant advantages of this visual and creative object-based learning process is that students not only learn words but also derive enjoyment from the process of creating, painting, and playing with these objects. The ownership and creation process further enhances comprehension and word retention. Moreover, for individuals with learning disabilities such as dyslexia, ADD (Attention Deficit Disorder), or other learning difficulties, the visual and haptic approach of 3D Text Toys can serve as an additional creative and personalized learning aid. The application of 3D Text Toys extends to both the English language and any other global written language. The adaptation and creative application may vary depending on the country, space, and native written language. Furthermore, the implementation of this visual and haptic learning tool can be tailored to teach foreign languages based on age level and comprehension requirements. In summary, this creative, haptic, and visual approach has the potential to serve as a global literacy tool.