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خلاصه مقاله:

Recent emerging technologies have demonstrated a great ability in enhancing the language learning performance in general and vocabulary learning in particular. In this respect, technologies such as Internet of Things (IoT) and Augmented Reality (AR) can make the educational systems more attractive, and thus have enormous positive effect on enhancing the learning performance for young beginners with regard to new vocabularies. In this paper, a color-sensing approach is proposed for supporting vocabulary learning in children using AR and IoT. To facilitate the users' interaction with the system, a tangible user interface capable of visualizing AR concepts is developed. Children can point the color sensor to real world colors and then are provided with the corresponding animations and multimedia content that teaches colors in Spanish language. By conducting experiments on elementary school children, the impact on pupils performance in learning Spanish language vocabularies is assessed using Paired T-Test. Moreover, the usability and accuracy of the proposed color-sensing system is also evaluated. Experimental results show that the proposed approach is quite promising particularly for upgrading performance of vocabulary languages in children and is equally applicable to learning any kind of object sensible in reality.

کلمات کلیدی:

Learning performance, usability, evaluation, AR, IoT, vocabulary learning, color sensing

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