Positive impact of the COVID-19 pandemic: meaningful learning using augmented reality for children

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Dear editor,

In response to the latest article on the topic of augmented reality (AR)[1] and metaverse,[2] a good understanding of the field of technology must be instilled from an early age, so that it can provide provisions for children to compete with the rapid development of technology. Especially in the COVID-19 era that has an impact on children's behavior in learning.[3] Inadvertently, children depend on gadgets.[4, 5, 6] In the future, technology will play a very vital role for the development of the world. It is realized that technology will facilitate human activities in fulfilling their life satisfaction. Various research results state that early childhood is a golden period for child development where 50% of intelligence development occurs at the age of 0–4 years, the next 30% until the age of 8 years.[7, 8, 9] This golden period is also a critical period for children where the developments obtained in this period greatly affect the development of the next period until adulthood. Thus, along with the development of technology and industry, it is very necessary to develop learning in technology-based early childhood education institutions.[10] In this case, the learning media that best supports children's visualization to quickly understand the concept is AR based.

Based on a preliminary study at an early childhood education institution in the Rumbai sub-district, it was found that the learning materials used in early childhood education institutions were giving assignments, lectures, demonstrations and storytelling.[11, 12, 13] Based on research results,[14] it was found that 87% of children felt bored in learning using books and modules as media. Early childhood education in Indonesia is a process of inculcating concepts.[15] AR can be an alternative learning media. Besides being interactive, AR can visualize objects in real time.[16, 17]

AR is a technology that combines 2D or 3D virtual objects and then projects these virtual objects in real time.[18, 19] AR is defined as a technology that combines the real world with the virtual world, is interactive in real time and is in the form of 3D animation.[20] AR can create interactions between the real world and the virtual world, all information can be added so that the information is displayed in real time as if the information is interactive and real. AR can even be used to diagnose COVID-19.[21]

Learning in early childhood education institutions using a scientific curriculum with a thematic approach.[22, 23, 24] Of course, it is strongly supported by AR. Because the work process visually allows children to understand the concepts introduced in each learning sub-theme, which is visualized with 3D technology. In addition, the application of AR technology that is very rare in early childhood education[25, 26] will make children interested in learning. Through this learning media, it is hoped that kindergarten students can be more enthusiastic in learning about various animals. In addition to introducing animals to students, this media also indirectly teaches students to be able to use the technology that is currently developing, for example to prepare themselves for the metaverse era.[27]

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