

such negative impact can be reduced through correct SMM-management, which requires companies to grow and develop not only in terms of numbers but also in contacting the potential customers professionally.

In conclusion, social media marketing is an effective tool for companies of all sizes to interact with their target market, create lasting connections, and spread awareness of their brand. Businesses may use social media to drive traffic, create leads, and boost sales by producing pertinent and interesting content. Using social media, as said above, is connected to some risks, but qualified and polite management can help reduce the negative sides, which makes SMM very important for every successful business.

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### **NEW AFFORDANCES OF AUGMENTED REALITY IN EDUCATION**

*Sydorenko K., student*

*Storchak O. H., Associate Professor*

*Kharkiv National University of Radioelectronics*

*Abstract.* Digital technologies develop in several directions: augmented reality, virtual reality and mixed reality. Augmented reality can provide affordances in higher education. It is the bridge between students and curricular materials to leverage advances in technologies in education. Using widespread devices, the teacher can simulate environment to safely interact with visual objects. Simulation of concepts is one of the most productive ways of studying. Augmented reality applications can be a convenient platform for online learning. This technology has a positive impact on emotions that play a crucial role in learning and memorization.

*Key words:* digital technology, augmented reality, education, simulation, online learning.

New technologies can definitely affect the course of human development and provide new opportunities in the field of education. One of the unique technologies is digital reality that has been evolving for last decades in several directions, namely virtual reality (VR), augmented reality (AR) and mixed reality. The ability to blend digital information with the real world will likely transform the way we live, work and interact. The aim of the article is to highlight augmented reality affordances in higher education. The object of the research is augmented reality in education. The subject of the research is the affordances of augmented reality. The research is of topical interest as the rapid advancement of technology has exposed students to innovative ways of learning. Technology has become so embedded in our daily lives that traditional teaching and learning methods may no longer be sufficient. The implementation of AR in education can provide better support for teaching and learning processes.

At recent years, the method of distance learning has become very popular and educators can leverage augmented reality. Research materials are scientific and technical papers. The research uses general scientific methods such as analysis, synthesis and comparison. Augmented technologies are studied in Computer Sciences, Information Systems, Pedagogy etc. In Computer Sciences and Pedagogy, augmented reality is investigated by S. Averianova, I. Prohorova [1], Dragan Cvetković [2], Hirokazu Kato et al. [7] to name a few. Augmented reality is a new way of creating the means of communication between people and objects. A real-world environment is enhanced with additional data such as visual elements and sounds.

AR includes three features: a combination of digital and physical worlds, interactions made in real time and accurate 3D identification of virtual and real objects. There are explicit differences between VR, AR and mixed reality. If augmented reality overlays real-world with virtual elements, virtual reality creates an absolutely new digital environment around the user. Virtual reality puts the user into the simulated 3D environment that is entirely different from real-world and the user can interact with it, whereas the augmented reality creates a sort of mixed reality, where virtual information

is embedded in the user's environment but keeps the user grounded in the real-world environment. Mixed reality is a combination of AR and VR where digital medium can interact with the physical world. For example, it can interpret the space in a room and combine digital objects with the user's physical environment. Users can use smartphones, tablets, augmented reality glasses and augmented reality contact lenses that are being developed to create augmented reality.

Mobile devices typically have hardware with sensors including cameras, Global Positioning System (GPS) and solid-state compasses. They help the user make AR more accessible to the user. The GPS is used to pinpoint the user's location, and the compass is used to detect device orientation. The initial component of augmented reality is a camera-equipped device loaded with AR software. This software is based on artificial intelligence (AI) and machine learning algorithms. AI systems can overlay proper digital information on top of the user's surrounding scenes. When the user points the device and looks at an object, the software recognizes it through computer vision technology, which analyzes the video stream. Then the device downloads information about the object from the cloud and displays it on the screen. AR allows users to control this representation by touch or voice. Also, as the user moves, the size and orientation of the AR display automatically adjust to the shifting context with a help of GPS. A 3-D digital model that is located in the cloud – the object's 'digital twin' – serves as the bridge between the smart object and the AR. This model is created by using computer-aided design.

The twin then collects information from the additional sources to reflect the product's current reality. It is the vehicle through which the AR software accurately places and scales up-to-date information on the object [5]. Augmented reality is useful for teaching sciences, engineering, math, foreign languages and more at the university level. Augmented reality apps can help to teach complex topics in an interactive and engaging way for students of all ages, from elementary school to university [3]. Augmented Reality helps to create a realistic situation through simulations and situational role-plays to enable students to gain practical knowledge. Learning by simulations of concepts is one of the most productive ways of studying [6]. The teacher

can speak about some natural process in a traditional or non-conventional setup. In a traditional setting, the teacher can verbally introduce a concept or draw a diagram on the blackboard.

When using Augmented Reality, the teacher can take students in a simulated concept environment. Students can see all details and try to manipulate them. Using this type of digital reality in training, entry-level specialists and those transitioning to a new position can pick up new knowledge at a rapid pace in a risk-free environment. Employees will have an opportunity to learn how to use work equipment and environment without any risk to the organization and their health. Medical students can learn anatomy and practice examining the body with an AR app representing the human body inside and outside. The technology allows conducting experiments like trying different chemical combinations and seeing what can happen with no harm to students and university property. AR applications can serve as a convenient platform for online learning, where the student can receive the necessary materials and collaborate with other students and teachers in real time. Augmented reality can be a brand new approach to interaction.

There is substantial evidence that emotions play a crucial role in learning and memorization [4]. When students have an emotional connection to information, they are far more likely to comprehend and retain it. Using AR, teachers can create highly immersive and emotionally impactful learning experiences. For example, students can explore historical sites and landmarks, manipulate the 3D models of molecules and cells, get up close with dangerous animals in a safe simulated environment and much more. These types of interactive and visually stimulating lessons compose strong associations in students' minds, facilitating deeper learning and longer-term retention of information. Overall, the emotional connections and memorable experiences afforded by augmented reality have significant potential to boost learning outcomes. Simulations of concepts can help to increase student motivation. Inner motivation leads to better comprehension and critical thinking that help to achieve a higher academic success. Thus, augmented reality provides new affordances for both teachers and students who can learn by doing.

The implementation of augmented reality in education provides an opportunity to expand human ability to perceive and comprehend the world. It can help us to see objects from another perspective, creating more neural connections in our brain for memorizing more information. AR provides an opportunity to visually transform objects. The shift in the learning process has resulted in the recognition of the fact that combining old approaches with new ones is necessary to provide a well-rounded education. Students can explore historical sites, manipulate 3D models of molecules, and see dangerous animals within a safe controlled environment. Augmented reality provides many options to improve learning experience, make curricular materials understandable and relevant to students. Augmented reality is still developing but it is intended to become much more widespread and impactful in the coming years. With continued improvement in all crucial components of augmented reality like hardware, software and AI, it will become far more immersive and useful over time.

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