

IMMERSIVE TECHNOLOGIES IN PSYCHOLOGY

Oleksii Nalyvaiko

V. N. Karazin Kharkiv National University, Ukraine
Associate Professor, Ph.D. in Pedagogy

Nadiya Kreydun

V. N. Karazin Kharkiv National University, Ukraine
Associate Professor, Ph.D. in Psychology

Liudmyla Ivanenko

V. N. Karazin Kharkiv National University, Ukraine
Associate Professor, Ph.D. in Pedagogy

Olena Nevoienna

V. N. Karazin Kharkiv National University, Ukraine
Associate Professor, Ph.D. in Psychology

Liubov Iavorovska

V. N. Karazin Kharkiv National University, Ukraine
Associate Professor, Ph.D. in Psychology

Andrii Kharchenko

Associate Professor, Ph.D. in Psychology

V. N. Karazin Kharkiv National University, Ukraine

Nataliia Nalyvaiko

Kharkiv National Medical University, Ukraine
Ph.D. in Pedagogy

АНОТАЦІЯ

У дослідженні показано можливості та перспективи використання імерсивних технологій у психології. Розглядаються різні цифрові інструменти та їх можливості для роботи й навчання психологів в умовах доповненої чи віртуальної реальності. У статті виділено найперспективніші цифрові технології та інструменти, які дозволяють реалізувати потенціал психолога на вищому рівні в епоху інформаційних технологій та великих відстаней між ним та клієнтом. Визначено ризики, які можуть виникнути при використанні віртуальної реальності у практичній психології.

Ключові слова: інформаційне суспільство, психологія, імерсивні технології, віртуальна реальність, доповнена реальність

ABSTRACT

The study shows the possibilities and prospects for using immersive technologies in psychology. Various digital tools and their capabilities for working and training psychologists in augmented or virtual reality are considered. The article highlights the most promising digital technologies and tools that will allow realizing the potential of a psychologist at the highest level in the era of information technologies and large distances between him and the client. The drawbacks that may arise when using virtual reality in practical psychology are determined.

Keywords: information society, psychology, immersive technologies, virtual reality, augmented reality

INTRODUCTION

Over the decades the digital revolution has brought about significant changes, in various aspects of human life. Immersive technologies like virtual reality (VR) and augmented reality (AR) have become a part of our daily experiences particularly in healthcare and education [7]. This rapid

technological advancement is also making an impact on the field of psychology opening up possibilities for research, diagnosis and treatment of mental disorders.

There has been a growing interest in using technologies within psychology leading to increased research efforts and recognition in this area [6]. These technologies offer tools to create controlled environments that can replicate psychological scenarios. For instance virtual reality allows for the creation of worlds that enable study and understanding of psychological processes.

The use of technologies in psychology is not relevant but also holds priority from a practical standpoint [3]. Virtual technologies are already being successfully employed in treating phobias anxiety disorders and other mental illnesses. However despite the progress made far there remains a need, for systematic research focused on better comprehending their effectiveness ethical considerations and potential limitations.

Studying these matters will yield practical insights that can enhance diagnostic and therapeutic approaches, in the field of psychology.

BASIC THEORETICAL AND PRACTICAL PROVISION

Immersion technologies are a new word in the field of psychology; the use of such technologies can greatly facilitate the process of diagnosing and consulting clients in the era of the digital world. Virtual reality (VR) and other immersive technologies can significantly improve the quality of education. The introduction of these technologies into the educational process allows students and teachers at all levels of education to gain access to virtual, augmented and mixed reality models. This allows you to create more engaging and interactive learning experiences that help students better understand and retain the material. In addition, the initiative to introduce virtual immersive learning contributes to the development of research in this area. Scientists are working to create new and more effective ways to use VR and other immersive technologies in education. This can lead to the creation of new learning opportunities and improved quality of education overall [7].

Immersive technologies is not just a collection of technological gadgets; it is a powerful tool for psychological assessment and learning.

Immersive technologies combination of simulation, cognition, and embodiment makes it uniquely suited for experiential therapy, a technique where patients confront their fears in a controlled and safe environment. This approach, particularly effective for exposure therapy, aims to reduce anxiety and fear by gradually exposing individuals to the objects or situations they fear [3].

However, traditional exposure therapy faces limitations in recreating real-world scenarios accurately. For instance, a veteran struggling with PTSD from combat experiences cannot be re-exposed to a combat situation. This is where VR shines. VR's immersive capabilities allow for the creation of realistic and personalized virtual environments that closely mimic real-world situations. This enables therapists to tailor exposure therapy to each patient's unique needs and experiences, making it a more effective and accessible treatment option [3, 8].

In essence, immersive technologies transcends its technological components and transforms into a transformative tool for psychological assessment and therapy.

RESEARCH RESULTS AND THEIR EVALUATION

The use of immersive technologies in psychology is becoming an increasingly relevant and promising area. Here are a few aspects that can be highlighted:

- Therapy and rehabilitation.
- Training of psychologists (simulation training)

- Research and diagnostics.
- Monitoring tool.

Let us consider in more detail each of the areas in which immersion technologies can be used in the context of psychology

Therapy and rehabilitation. VR can be used to treat phobias, anxiety disorders and post-traumatic stress disorder. Therapy scenarios can be created in a virtual environment, providing a controlled and safe environment for patients.

Training of psychologists (simulation training). VR allows psychologists to create environments that simulate real-life situations to help patients develop and practice social skills, stress management and other aspects of behavioral therapy. Future psychologists can use VR to train in simulated clinical scenarios. This can help them develop communication, diagnostic and therapeutic skills in a controlled environment before actually interacting with patients.

Research and diagnostics. Researchers can use VR to more accurately and in a controlled manner recreate scenarios that may trigger stress or other psychological reactions. This allows for a deeper understanding of behavioral and emotional aspects.

Monitoring tool. Using AR or other devices, it is possible to obtain biometric data about the patient's condition in real time, which can be useful for diagnosis and adaptation of therapy.

Immersive technologies provide unique opportunities to improve the effectiveness of therapy, conduct research and train specialists in the field of psychology. However, as in any field, it is important to consider the ethical and confidentiality aspects of implementing such technologies.

Specific tools of immersion technologies in psychology

Labster's immersive virtual labs [5] are designed to address the fundamental challenges that hinder student success, fostering engagement, reducing dropout rates, and promoting equitable learning outcomes. These simulations effectively identify and address learning gaps and barriers, ensuring that students grasp concepts before progressing.

Personalized Learning at Every Step. Labster's self-paced learning environment allows students to progress at their own pace, ensuring mastery of concepts before moving on. Instant feedback tailored to individual performance guides students towards deeper understanding, while the option to repeat labs as needed reinforces learning and cements knowledge.

By addressing learning gaps directly and providing personalized feedback, Labster empowers students to overcome obstacles and achieve their full potential. (<https://www.labster.com/>)

Frame [2] is a platform that can be used to train psychologists and create real cases for future psychologists in the context of communication with clients or colleagues. The platform also allows anyone to unleash their creativity within a spatial canvas, using a drag-and-drop editor to create incredible spatial worlds in which students and teachers can simulate situations, especially for distance learning and online courses. Such a platform can positively influence the quality of education (especially in online format) [4] I implement one of the main didactic principles - visibility and involvement

DeAngelis T. [1] in his note presents a number of software products using immersion technologies for therapy and clinical psychology. Let's look at them in more detail:

- The Online Therapy Institute, one of the first companies to bring mental health services to the virtual world, offers a variety of training programs on legal, ethical and practice issues of such practice. The institute also hosts a 40-hour intensive avatar-therapy class

- Virtually Better, Inc.. This research and development company has a range of peer-reviewed virtual products for purchase, including Virtual Iraq™, which helps soldiers and veterans overcome post-traumatic stress disorder, and products that address such phobias as fear of flying, speaking, heights and storms.

- WorldWired, a company “off-the-shelf” 3D immersive graphic and video environments for therapeutic and educational purposes. The company also provides clinical and technical consulting, customized scenarios and environments, and training.

Drawbacks of Virtual Reality in Psychology

Despite its promise as a therapeutic tool, virtual reality (VR) has several limitations and potential drawbacks that should be considered before adopting it in psychological practice.

- **Motion Sickness.** Virtual reality can cause motion sickness in some users, characterized by nausea, dizziness, and disorientation. These symptoms can exacerbate existing conditions or hinder therapy progress. While technological advancements may alleviate motion sickness, it remains a concern for VR implementation.

- **High Startup Costs.** The initial cost of incorporating VR into psychology practices can be substantial. Hardware expenses, including VR headsets and controllers, software licensing fees, and training costs, can strain financial resources. This financial burden may deter smaller practices from adopting VR.

- **Lack of Meaningful Interaction.** VR's effectiveness hinges on users actively engaging with the virtual environment. A passive experience without meaningful conversations or activities may hinder therapeutic progress and fail to address underlying psychological issues.

- **Overemphasis on Visuals.** While visuals are crucial for creating an immersive VR experience, other sensory modalities should not be overlooked. Audio design plays a pivotal role in enhancing realism and promoting a sense of genuine interaction with the virtual environment. Haptic feedback can further enrich the VR experience and boost engagement.

- **Ethical Concerns.** The use of VR in psychology raises ethical considerations surrounding data privacy, confidentiality, and informed consent. Clear guidelines and policies are necessary to protect user information and ensure ethical practices.

- **Inappropriate Content.** Psychologists have less control over the content their patients are exposed to in VR compared to traditional therapy. Vulnerable populations, such as children, may be inadvertently exposed to disturbing or inappropriate content. Proper safeguards and parental supervision are essential to prevent such exposure.

While VR holds potential as a therapeutic tool, its limitations and potential drawbacks require careful consideration [8]. Meticulous planning, implementation, and ethical guidelines are essential to minimize adverse effects and maximize the benefits of VR in psychological practice.

CONCLUSION

Immersive technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR) have great potential in psychology.

Despite their potential, immersive technologies also have some limitations. For example, they may cause side effects such as nausea and dizziness in some people. Additionally, immersive technologies can be expensive and difficult to use.

Overall, immersive technologies represent a promising area of research in psychology. They have the potential to improve diagnosis, therapy, and training in psychology.

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