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WHITEPAPER

Part 1

Bringing Distance Learning Closer with Virtual and Augmented Reality

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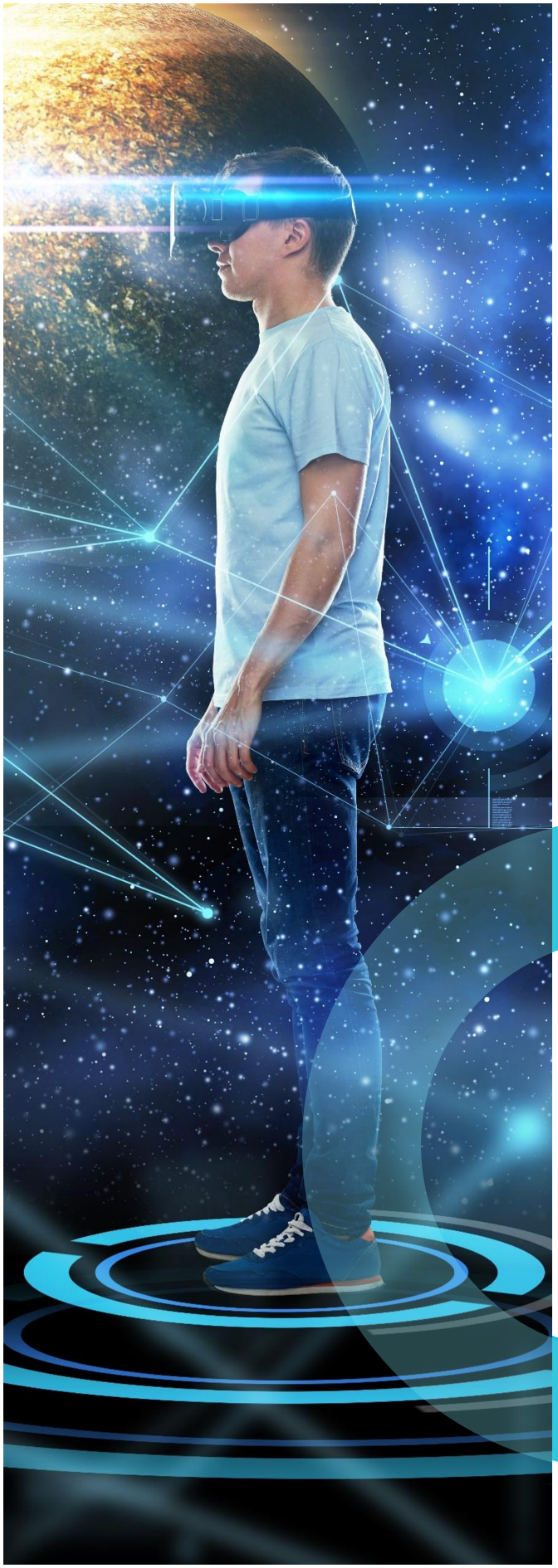
Abstract

Prospects for education in a rapidly changing world are heavily impacted by the growing inclination towards technology-supported learning and training. In this two-part whitepaper series, we will be discussing the acceleration of a tech-enabled shift in distance learning landscape and the subsequent changes augmented reality and virtual reality will bring to how people learn.

This Part ONE of the whitepaper explores the origins of this demand for Extended Reality (XR) in Education. It does so by outlining the concerns and worries driving global education sector's growing need to incorporate XR solutions. And then goes on to discuss the obstacles that curtail widespread adoption of such solutions.



Introduction

The rise of distance learning poses several challenges for both learners and educators. For students, access to hands-on learning experiences is quite restricted. For educators, offering lessons and engaging with students pose many challenges.

This whitepaper explores how the adoption of Augmented Reality (AR) and Virtual Reality (VR) can enhance the immersive learning experience. Because, while the internet has made sure people can attend classes from anywhere, it does not ensure people effectively learn skills or understand the application of concepts in the real world.

The distance between education and understanding

Studies[2] have also shown that the current rise in Social Media usage is linked to more students displaying symptoms of attention deficit-related concerns. This is especially concerning for students with learning disabilities such as Attention Deficit Hyperactivity Disorder (ADHD), as traditional lectures on Zoom can be difficult for them to follow, leading them to grow "unengaged." Many students struggle to stay organized and keep up without the usual support from educators or the familiar structure a classroom grants.

Reinventing the classroom with Extended Reality (XR)

<Under the bar graph:> 2019 survey revealed that public school teachers in the US are eager to adopt digital tools.

65%
Said they utilized digital tools every day.

85%
Saw "great value" in using these solutions in the future.

53%
Reported that their students use digital tools every day.

This disengagement in students is the reason why immersive learning has become popular in recent years. Hands-on learning is more effective for information retention; it allows students to interact and participate rather than merely lectured about the material. Extended Reality, i.e., AR/VR breathes life into complex and abstract subjects that learners are expected to comprehend.

With many AR/VR educational apps already becoming mainstream, the market size is expected to reach $375 billion by the start of 2027 [1]. Hyper-immersive learning technologies fueled by VR/AR will enhance and open up the realm of cross-cultural learning opportunities for students from all backgrounds. By reducing barriers that exist in a physical space, these innovations extend several possibilities for more inclusive learning environments from K-12 classrooms to higher education.

Going beyond imagination: A more reliable education system

Advantages of AR/VR in Learning

- Better Visualization
- Sustained Interest
- Improved Accessibility
- Process Involvement
- Complete Immersion
- Enhanced Interaction

Help students concentrate

Using VR/AR technology [3] for lessons can help students stay focused on literally what is in front of their eyes.

Contribute to inclusivity

Both technologies have shown immense promise in helping students with special needs or learning disabilities [4].

For example, VR technology can customize layouts, font styles and sizes, and background colors according to the needs of dyslexic students [5].

Challenges Hindering the Adoption of AR/VR

Like any relatively new tech, the path to widespread integration and adoption of AR/VR isn't without its challenges, the primary ones being:

Financial Constraints

Most public schools have severe financial constraints, meaning public-private partnerships will need to propel broad adoption.

Technical Illiteracy

First-time users of AR/VR will need to be appropriately guided for successful execution of the solutions.

Inadequate Learning Content

There is a significant need for creating the multitude of content for the different types of learners.

What Existing AR/VR Solutions Overlook

Current solutions in AR/VR often overlook the reality that learners do not have identical learning capacities or grasping potentials. They often overlook the inherent human need for collective learning, making the experiences solitary. In addition to catering to these considerations, EdTech solutions will need to be mindful of a transition period for users to get comfortable with new formats and platforms.

References

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[3] https://www.techlearning.com/how-to/how-vr-and-ar-can-be-used-to-support-students-with-special-needs

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