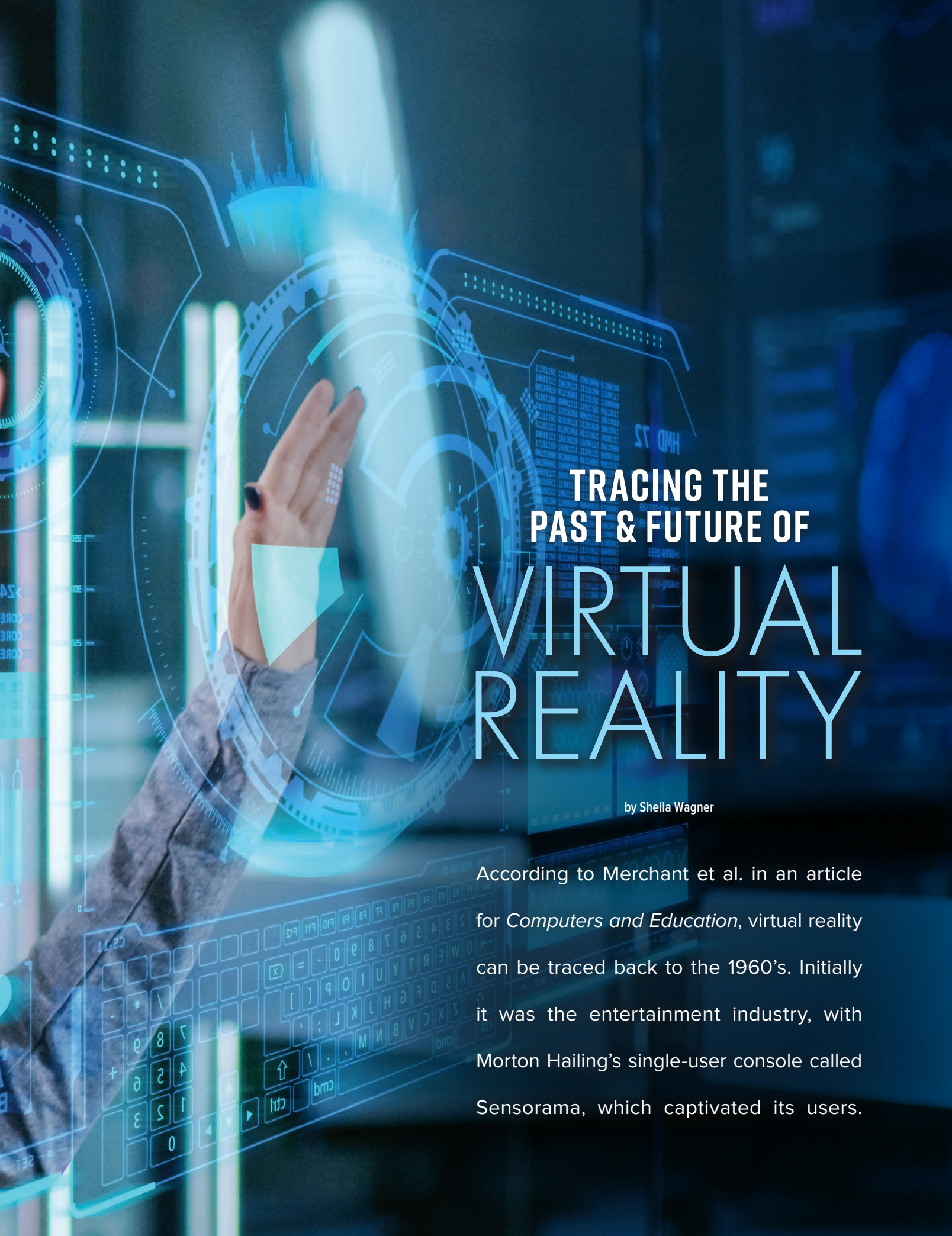

TRACING THE PAST & FUTURE OF VIRTUAL REALITY

by Sheila Wagner

According to Merchant et al. in an article for *Computers and Education*, virtual reality can be traced back to the 1960's. Initially it was the entertainment industry, with Morton Hailing's single-user console called Sensorama, which captivated its users.

In the 1980's, as Merchant et al. explain, there was a dramatic surge of interest in VR technology in the field of professional education and training, such as flight simulator training.

Early VR in Higher Education

It was the early 1990's before universities began using this new technology in their educating of students, Merchant et al. add, with projects such as Science Space, Safety World, Global Change, Virtual Gorilla Exhibit, Atom World, and Cell Biology.

The designers of all these projects used a variety of peripheral devices such as head-mounted display gear, data gloves, and body suits for a fully immersive learning experience.

Unfortunately, there were many problems associated with these virtual reality technologies which limited their wide-spread use in educational settings. The main problem, initially, was the prohibitive cost of the products, as well as the maintenance of the sophisticated devices used to create an immersive environment.

In addition to the financial hardship, the users of these first projects experienced physical and psychological discomfort in the VR environments, including repetitive strain injuries as well as simulator sickness and disorientation.

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Gradual Improvements in the Tech

During the 2000's, with the improvements in technology, and the increasingly lower cost and increase in processing power of computers, Merchant et al. reported, there were desktop based 3-D programs which enhanced the learners' engagement.

More advancements in the technology later made it possible to use peripheral devices with the desktop computers such as headphones, shutter glasses, and data gloves.

Universities could now use simulations (interactive digital learning environments that imitate a real-life process or situation) to educate their students.

Simulations could be very cost-effective because a real life apparatus could be a major expense, while a virtual apparatus can allow students to perform procedures repeatedly until they have mastered the technique.

This repetition, without risk, is especially helpful for medical schools where the students can sharpen their skills before advancing to actual patients.

Modern VR Practices

Present-day virtual reality has a place in professors' classrooms of all areas of study, from mathematics to history, from science to the arts.

Merchant et al. found no differences between studies assessing students' achievement levels using knowledge-based, abilities-based, or skill-based measures for games or virtual worlds.

They suggest these findings indicate that both games and virtual worlds are suitable for learning outcomes.

Supplementing, not Substituting

In the book *Virtual Society? Technology, Cyberbole, Reality*, Steve Woolgar wrote about the psychological and social aspects of using technology in the classrooms.

This book was written in 2002, so the virtual reality that is the "real" reality of today's technology may not have been in his wildest speculations. What remains interesting are his thoughts about what was problematic about classroom technology in general.

Woolgar wrote, "All aspects of social, cultural, economic, and political life...stand to be affected by the continued massive growth in electronic technologies."

He researched the initial scope of technology and the effects it had on personal interactions. He found that social impacts of electronic technologies were characterized by polarization between "narrow suspicion and uncritical enthusiasm."

Both sets of views, he continued, tended to assume that the effects of these technologies would be "predictable and universal."

While the early suspicions verbalized by many suggested that technology would take the place of personal interaction in offices and classrooms, his research showed that new technologies tend to supplement rather than substitute for existing practices.

At that time, some thought emails would take the place of in-person meetings and office memoranda and that teleworkers would make contact with prospective clients through the internet and not in person.

Of course, we know that didn't happen, and in fact, modern technology has made it possible to connect in many more ways than it did before.

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Moving Past Fear into Miracles

Because today's students grow up in a digital world, they not only enjoy interacting with technology, but they might need it, quite frankly, to remain fully engaged.

Finding worries—whether they be practical, pedagogical, or philosophical—to accompany any of the latest advancements is easy. Moreover, fears about learning new tools, especially for educators with methods they have been successfully using for decades, is daunting. However, lifelong learners do not shy away from new challenges.

Ultimately, private universities and colleges must embrace the opportunities offered by Immersive Realities and appreciate what these tools can bring to the educational experience for students.

Today's students have these opportunities only because they were born into an era where so much that was once considered sci-fi and fantasy is now simple to purchase, set-up, and experience. Students deserve to experience this miracle of science, technology, innovation, and creativity.

ABOUT THE AUTHOR: Sheila Wagner has spent the last several years working as a professional editor and recently became a staff writer for *Private University Products and News*. Wagner can be reached at sheila@pupnmag.com.