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Exploring VR-Enhanced Learning in Business Education: A Multi-Site Study

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Abstract

Virtual Reality has the potential to transform educational experiences. This evolution, from the earliest days of projecting and viewing stereoscopic static images to the immersive headset experiences possible today, allows VR to transport students to new locations, enable them to participate in virtual spaces and simulations, and design 3-D objects, all of which might not otherwise be possible in the physical world. Echoing the World Economic Forum's claim about VR reshaping education, this paper examines initiatives and implementations of VR at three different business-oriented universities. The authors explore learning scenarios that VR can enhance, share experiences when creating engaging learning experiences using VR, and describe challenges faced when implementing and deploying VR at their schools. By highlighting applications of VR in higher education, the paper shows how interacting with VR can enhance learning and enable students to develop digital skills with immersive technologies.

Keywords: Virtual Reality, Emerging Technology, Instructional Technology, Deployment, Immersive Learning

1. INTRODUCTION

In 1870, the Magic Lantern, or stereopticon, created new opportunities for teaching and learning, as this early version of the slide projector allowed educators to show images from around the world in their classrooms for the first time. The stereoscope of the late 19th century and early 20th century joined separate left-eye and right-eye images so its wearers could see them as a single three-dimensional image. Originally intended as an educational device for adults, the View-Master™ introduced in 1939 at the New York World's Fair, quickly became a popular children's toy, as it enabled high quality color photographic images to be viewed in stereoscopic reality for the first time. Fast forward to today and we are now considering how to integrate virtual reality (VR) in the classroom. Instead of seeing still images of a far-off land, students can now place themselves in a completely immersive environment, where they can explore the Pyramids of Egypt, design gathering spaces to meet up with friends or

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colleagues from around the world, design and visualize three-dimensional objects, and engage in conversations with virtual avatars who never run out of patience, in ways that were unimaginable just a generation ago. VR has the potential to revolutionize education by creating new environments where learners can interact not only with the world around them, but also in worlds that would otherwise not exist (Bekele et al., 2018; Dunmoye et al., 2024; Fabris et al., 2019).

According to the World Economic Forum, VR will reshape the future of education (*The Future of Education Is in Experiential Learning and VR*, 2022). Accordingly, colleges and universities are evaluating how VR can be integrated into the curriculum, not only for technology courses but across departments. Oftentimes faculty within the technology-based department are tasked to evaluate tools used throughout the university. This paper describes the VR initiatives undertaken at three higher education institutions.

2. LITERATURE REVIEW

This paper refers to virtual reality (VR) as a technology most often experience by viewing completely computer-generated immersive images in a specialized headset; augmented reality (AR) as viewing digital content such as text or holograms superimposed on the real world, and extended reality (XR) as an umbrella term that combines these and potentially other immersive technologies. Figures 1 and 2 illustrate these concepts.

Figure 1. Conceptual image showing a classroom using Virtual Reality (VR). Image generated with assistance of AI.

Figure 2. Conceptual image showing the use of eXtended Reality (XR) in an urban environment. Image generated with assistance of AI.

The iLRN State of XR Outlook Report (Lee et al., 2021) presents needs and opportunities, barriers, technologies, and developments for implementing immersive learning scenarios across the educational spectrum. This study explores three major questions:

- What are the greatest needs and the most promising opportunities in learning that immersive technologies can help fulfill?
- What are the most salient barriers facing institutions and organizations seeking to adopt immersive learning technologies?
- Which related complementary technologies, tools, and digital developments have the potential to help transform learning and teaching/training practices?

VR Opportunities

The convergence of generative artificial intelligence (AI) with XR technologies whereby AI driven avatars can participate in a virtual environment, will also create new opportunities for individualized instruction and learning across disciplines and industries. Generative AI can enrich VR experiences by providing intelligent and more human-like interactions (Chamola et al., 2023).

Immersive learning environments can provide authentic learning experiences for students through activities such as virtual field trips, simulations, meetings, and opportunities for collaboration (Juliana et al., 2022; Pirker & Dengel, 2021). While VR shows a promise as a pedagogical tool, additional research is needed to better understand its effectiveness and best practices for integrating it into the educational experience (Hamilton et al., 2021).

VR field trips transport learners to visit cultural or business locations that students could otherwise not experience in person to get a sense of "being there." VR simulations enable humans, represented as avatars, to participate in simulations of real-life scenarios, such as interview preparation, effective speaking, healthcare or customer experience. Meeting in common virtual spaces allows for participants in different physical locations to gather for a synchronous experience, as an alternative to Zoom. Virtual meeting spaces often have ambient sound for a more realistic experience, offer breakout rooms, and other collaborative features to create a virtual community among participants. Designing customized avatars can increase a sese of presence and promote successful group interactions in networked VR meeting spaces (Han et al., 2022).

Offering immersive learning at a business university exposes students to new technologies that they may see in their future digital workplace, enhancing their employability. VR applications also enable collaborators in separate locations to analyze the same dataset and build visualizations together seamlessly and in real time. Many business schools are already using VR to deliver executive education, for cross-cultural communication, and virtual conferences. College Cliffs provides several examples of how colleges are using VR for education. (Weems, 2023).

3. DISCUSSION

Faculty members at three different universities who implemented a diverse set of learning activities involving VR were asked to reflect on their experience with the goal of sharing lessons learned with other universities considering a VR initiative. Respondents were given a set of prompts to consider in writing up their reflections (see Appendix A).

A common theme at all three institutions is the selection and configuration of mobile device management (MDM) software. MDM is essential when implementing a large-scale deployment of headsets, as it allows administrators to install and update applications remotely on each device at the same time, control the content that users can interact with, and monitor the usage and status of each device in the collection, as shown in Figure 3. Meta provides MDM software for managing its Quest brand of headsets, while third-party solutions also exist which often support devices from multiple vendors and have different features. Fees are usually based on the number of devices being deployed annually. In addition to pricing models, administrators should consider ease of use, critical features needed such as whether or not you need to track student usage at the headset level or the application level, compatibility with current devices and those likely to be purchased in the future, and scalability, when selecting an MDM solution.

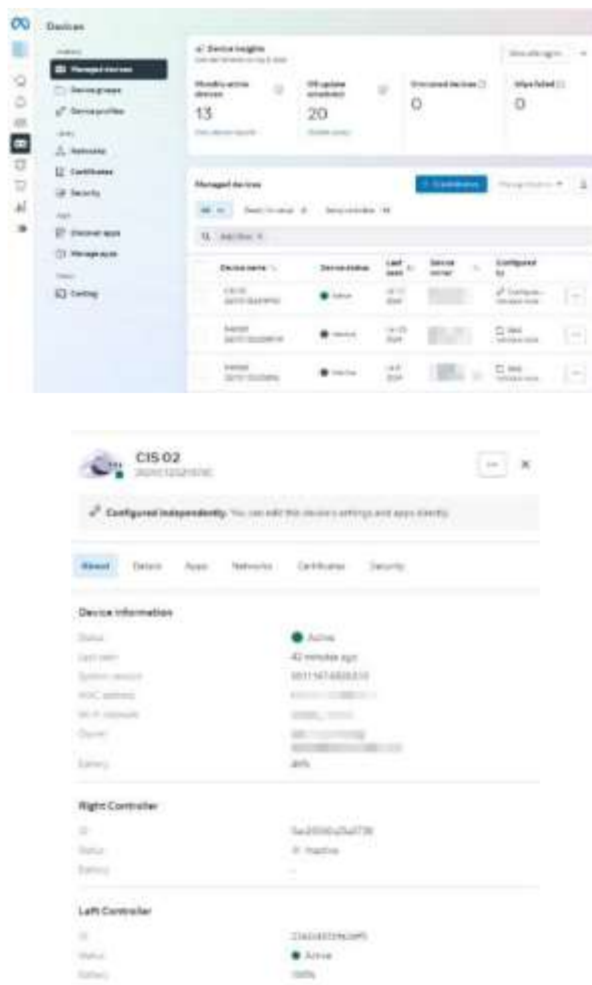

Figure 3. Mobile Device Management Software.

A second common theme was the creation of a dedicated physical space where students can gather to participate in VR activities. Repurposing

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existing classrooms is often common. Factors to consider when creating a dedicated VR lab space include:

- the size of the room, to ensure that VR headset-wearers have ample space to move around without bumping into anyone or anything.
- wireless Internet connectivity, with ample bandwidth to provide a smooth user experience
- ample and secure storage space and power strips to charge headsets when not in use.
- Procedures or cleaning and sanitizing headsets between use
- large displays to project headset content for those not wearing headsets to see
- create procedures for students to sign out headsets for home use
- A dedicated staff to manage the VR lab

Figure 4 shows Bentley University's VR classroom with equally spaced seating and large monitors on the walls for displaying a headset image so onlookers can participate. Students were wearing Quest 3 headsets and viewing the marine biology videos described in Case C below.

Figure 4. A VR Classroom.

Case Studies

Table 1 summarizes the general settings, VR applications used, and findings of VR implementations at three universities. Details of each case study follow.

Case A – Nichols College

Nichols College is an AACSB business school in the northeast U.S. primarily serving an undergraduate population of approximately 1200 students. Nichols College began exploring VR as a teaching tool in the fall of 2022. The institution received a Department of Education grant (Grant #P116Z230123) that included funding for hardware purchase, software licenses, and funds for faculty to integrate VR into their curriculum. The funding began in the Fall of 2023 and is designed to cover all 3 years of our pilot project.

Case	Institution	Setting	VR Applications	Findings
A	Nichols College	First-Year Effective Speaking Course	VirtualSpeech (public speaking)	Positive student feedback, increased engagement
B	Bryant University	VR Lab used in many disciplines	• Google Earth (earth visualization) • Ovation VR (public speaking) • Virtualitics (3D Data Visualization) • YouTubeVR (immersive video) • Various Games	Staffing and training challenges, increased student interest
C	Bentley University	Metaverse Course, Marine Biology, Career Readiness and "Soft Skills" Training	• FrameVR (immersive space designer) • Instructor-created Marine Biology Immersive Videos • BodySwaps (Soft Skills)	Positive student experiences, Hands-on learning, opportunities for student leadership

Table 1: Summary of VR in Business Education Cases

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Headset Evaluation. We spent close to one year evaluating and selecting the headset along with the Mobile Device Management (MDM) tool. The headsets and MDM tools were evaluated by a team that included faculty and IT. Our initial plan was to create a tethered headset lab with 12-16 nodes. However, in evaluating the various software tools we were convinced that the power of the untethered headsets would be adequate for our needs which would a) reduce the cost allowing us to expand to having 150 devices instead of 12-16, b) save on retrofitting a dedicated classroom to handle the tethered headset pods, and c) potentially achieve greater adoption since students would be able to use them in their homes or dorms. In the end we decided on 150 headsets including a mix of Meta Quest 2 and Meta Quest 3 untethered headsets and the Meta for Business MDM tool. While there were other MDM tools we evaluated that were cheaper, having the MDM tool by the same vendor as the headsets (Meta) ensured that support would be centralized and there were less risks of the headsets having issues with the MDM tool.

Headset Deployment. Our headset purchase was primarily Meta Quest 2's although we did buy some of the more expensive Meta Quest 3's in case we wanted to run augmented reality applications. We found the Meta Quest 2 headsets to be quite a bit cheaper in price than competing headsets from other vendors and realized we could purchase twice as many of these headsets over the competing products. While we budgeted for extended batteries and higher end head straps, we decided to hold off the decision of purchasing these until after our pilot. The only additional items we purchased were bags designed to hold the headset and controllers and additional AA batteries to have on hand for the controllers (while the headset is rechargeable, the controllers are not unless you replace the batteries with rechargeable batteries). We gave each headset a unique name in Meta for Business and used a labeler to label the headset and controllers which ensured that headset being returned matched the ones deployed.

Students were loaned a headset and carrying case to be used for the six weeks of the pilot. They signed a contract stating that they were responsible for reimbursing the cost of the headsets if they were not returned. We stressed to the students when we handed out the headsets that since the headsets were enrolled in the Meta for Business assigned to the university, the headsets would be unusable if we were to shut them down which we could do through the MDM tool.

With Meta for Business, applications that are certified by Meta are easily deployed without having to install the software manually on each headset. This caused us to switch vendors for the public speaking tool, as the one we initially identified was not certified while VirtualSpeech was certified. Had we selected the first option, we would have had to install the application on each headset individually. This might be manageable on a small number of headsets but does not scale for larger deployments. The MDM also supports uninstalling applications from all registered devices.

Project Plan going Forward. Our project plan is to pilot VR in a new course each year across the three years of the project. We selected the tool VirtualSpeech (https://virtualspeech.com/) which we piloted for the first year in a course titled Effective Speaking. Figure 5 shows a virtual boardroom environment where users can practice public speaking, overlayed with analysis of a user's scores on various dimensions related to their speaking simulation.

Figure 5. VirtualSpeech

Effective Speaking is a core course required of all first-year students. While we usually offer approximately 8 sections of Effective Speaking each semester, the pilot was done in one section so we could evaluate how things went before scaling to all sections. The section selected had 24 students and was taught by the course coordinator who was enthusiastic about the technology but had no prior experience with VR.

Each student was given a Meta Quest 2 headset halfway through the semester to use for the rest of the semester. We did not install any other applications on the headsets, but students had access to the factory-installed applications. Students also could install applications from the Meta Store if they chose to do so. We adopted this approach hoping that without restrictions on their use, students would be encouraged to explore their capabilities, and overcome any preconceived challenges such as experiencing motion sickness

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when using their headsets. If students were comfortable using the headsets, that might increase overall usage of the VirtualSpeech application. While VirtualSpeech has embedded learning paths and lessons, we did not make any of them mandatory for the pilot. Instead, we were interested in learning if students would complete the lessons simply to help their own performance, or if they would explore the application further on their own. We surveyed the students at both the beginning and end of the pilot to gather feedback.

Results. Overall, the students' reaction was extremely positive. A sample of the positive responses include:

- "I found it to be helpful to get my words straight for my speech."
- "Felt like it helped me feel more comfortable in front of real people."
- "It helped in many ways and gave me many different outlooks on different speeches."

Only a few students completed the prewritten lessons provided in VirtualSpeech; most used the open virtual audience feature to practice their public speaking skills. A few students admitted that they did not use VirtualSpeech at all. The instructor felt that introducing the VR component to the course was helpful and encouraged its use in all sections in future semesters. We intend to integrate the supplied lessons from VirtualSpeech into the syllabus so they can act as assignments throughout the semester.

Most students also said that they used the VR headset for other activities, the most popular being watching YouTube videos. The consensus with the responses was that the use of the headsets was fun. While cases of students experiencing nausea and motion sickness were reported in other studies, none of our students claimed to have any issues with either.

Case B – Bryant University

Background. Bryant University is a private AACSB university located in the northeast U.S. The university offers a blend of business, liberal arts, and health sciences education and serves more than 3,500 undergraduate and graduate students. The university opened a VR Lab in 2019 with a grant of equipment from HP as part of the Educause-HP Campus of the Future initiative (Figure 6). The lab at that time was equipped with five HP Z-series graphic stations, a large digital display, several 360-degree cameras and 15 HP headsets. The initial headsets donated by HP were tethered, and subsequent research led to the purchase of 7 Oculus Rift headsets (which were also tethered). See Figure 6.

In 2023, the university library secured a grant to upgrade the technology with 20 Meta Quest 2 (untethered) headsets. The transition from tethered to untethered headsets was driven by the need for mobility and ease of use, although tethered headsets remain valuable for certain high-powered applications like Google Earth VR which will not run on some untethered headsets, due to the intensive graphics processing that they require.

Figure 6. A tethered VR headset is connected to a high-powered workstation.

Software Selection. The introduction of VR at the university was driven by a collaborative effort involving various stakeholders. The Center for Teaching Excellence, Information Services, and the Director of Academic Computing, and Lab Technology played pivotal roles in selecting and managing the VR equipment. Several applications were available on the headsets in the VR lab. See Table 1 above.

These tools offer a wide range of experiences, from educational simulations to narrative and historical content. A few faculty were consulted on the selection of VR software. We used the Arbor XR MDM tool to manage the applications on our headsets. Some of these applications are free and pre-installed while others have licensing fees.

Virtualitics offers advanced capabilities to enhance data analysis and visualization through immersive technologies. It supports 3D visualization and allows users to create complex, multidimensional visualizations that are more intuitive and easier to interpret than traditional charts and graphs (Figure 7). Users can interact with data through a VR headset, providing an immersive experience that enhances

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understanding and collaboration. Multiple users can interact with the same data set simultaneously, regardless of their physical location, which is useful for teams working remotely.

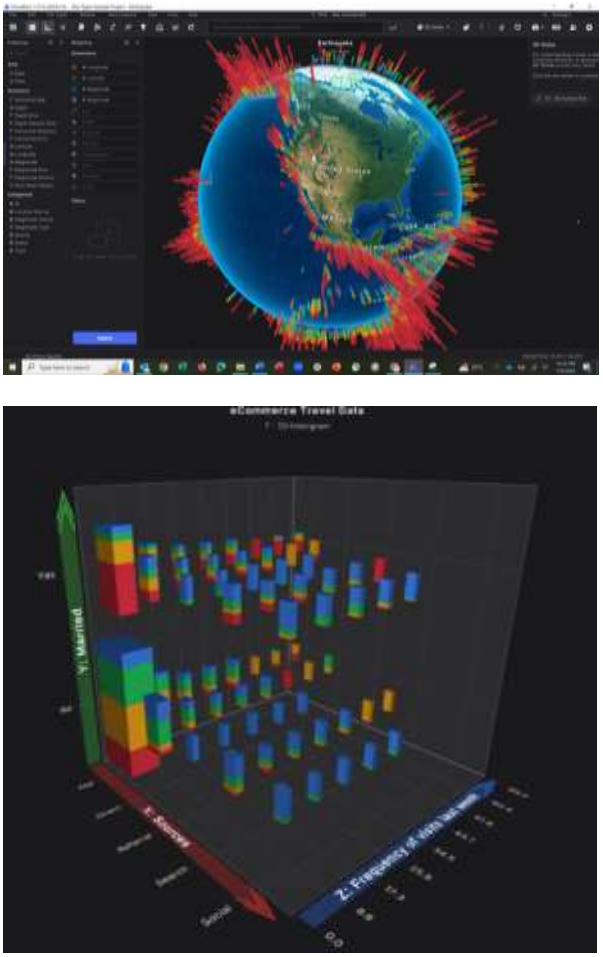

Figure 7. Virtualitics Visualizations.

Deployment. The deployment of the VR equipment was primarily handled by the Academic Computing and Lab Technology team, with some initial support from the Center for Teaching Excellence. This team was responsible for setting up the VR lab, including the installation of a data wall, a large interactive digital display that presents data in an interactive or engaging way, with the help of outside contractors. The support structure evolved over time, with the library taking over some responsibilities from the Center for Teaching Excellence in 2021. Currently, the library and Academic Computing team collaboratively manage the hardware and software, ensuring the VR lab's functionality.

To manage the VR headsets, the library employs a mobile device management (MDM) tool using a library-owned cell phone. This approach ensures that the headsets are well-maintained, and updates are efficiently managed.

Results. Several challenges emerged during the deployment and ongoing use of VR technology. Staffing was a significant issue, as there were no dedicated personnel to manage the VR lab. Staff members from other departments, already burdened with full-time responsibilities, had to take on additional roles to support the VR space. This issue was partially mitigated in the Spring 2024 semester with the introduction of student staff to support open hours in the VR lab. Knowledge and training presented another challenge. The staff responsible for supporting and training others on VR usage had to learn the technology independently. This self-taught approach, while effective, highlighted the need for more structured training programs.

Faculty are encouraged to incorporate VR applications into their teaching/research. A few workshops are offered by the vendors and staff from libraries to train faculty on the use of VR applications. Some faculty also self-taught themselves. Several courses (data visualization, text mining, and data science capstone) that covers data visualization have brought students to the VR lab to use Virtualitics. Students in other communication and biology courses use VR applications including Ovation VR and Google Earth.

The lab has open hours that allow students to walk-in to experience VR and/or work on their research project. In addition, the VR lab has been used as a showcase to potential students/parents during open house or corporate partners during their visit. It has been incorporated into the data science summer camp for high school students. However, the lab has a limited capacity of 15 students since it only has five workstations with each station having 3 VR headsets. This restriction hampers the lab's widespread use. For larger classes, instructors must split students into two batches.

While many students initially had no prior experience with VR, interest and engagement have grown over time. The VR lab's open experimental hours have become a valuable resource for students to explore and familiarize themselves with the technology. Students enjoyed using various applications and playing games. However, some students and faculty have reported feeling uncomfortable or experiencing nausea after wearing VR headsets for extended periods.

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The university is preparing to expand its VR capabilities. While the current lab will continue to serve the entire campus, a new data visualization classroom will be established in the new College of Business building, for dedicated use by data visualization courses.

Case C – Bentley University

At Bentley University, a business-focused university in New England, we share several examples of the use of virtual reality and for business education.

Living in the Metaverse. In Fall 2022, we introduced an experimental course, living in the metaverse, focused on the business technology and social impacts of the metaverse at a time when Meta (formerly known as Facebook) had just rebranded and VR technologies were becoming accessible. (Frydenberg et al., 2024) In the context of a first-year discovery seminar, "Living in the Metaverse" integrated standardized college-readiness topics with hands-on activities with collaborative assignments and class discussions to present a multidisciplinary exploration of the metaverse from business, technology, and societal perspectives. Students explored existing metaverse environments such as Decentraland, participated in virtual communities, and explored VR hardware and applications. In addition to readings from trade and research publications, the course culminated in students applying metaverse design principles to create their own immersive meeting spaces using the FrameVR platform that reflected elements of popular culture such as the hospital lobby below from the popular Gray's Anatomy TV series. (See Figure 8.) The scenes that students created were of topics of their own interest; from a business education perspective, the key aspect of this assignment was to explore a software tool to build an immersive environment and apply best practices when doing so.

Lessons learned from the course included that hands-on activities with virtual reality headsets helped make metaverse concepts easier to grasp, and that students still had concerns about widespread use of the metaverse, including privacy and security.

Implementation. At the time this course was offered, our university had only four Quest 2 headsets available, so students needed to sign up in a computing lab to reserve a time to use them. Tutors trained in using the headsets assisted the students, for many of whom, this was their first academic use of VR. We found that hands on experience with VR made learning about the metaverse much more tangible, and as the course evolved for a second and third offering, assigned students to have hands-on VR experiences early in the semester.

Figure 8. Living in the Metaverse scene.

Deploying VR with Bodyswaps. As participants in the Meta University Program (Clegg, 2023), our university explored the use of the Bodyswaps applications for developing practical life skills such as interview training or conflict resolution.

The VR applications we used to introduce VR technology to our campus were developed by Bodyswaps, a UK company. Participants tried modules on topics from preparing for job interviews and public speaking to diversity and inclusion and having difficult conversations. By completing these modules, students explored essential skills: learn how others see them; develop self-awareness; practice self-introductions; build confidence talking to new people; practice communicating ideas clearly and with confidence; and prepare for job interviews. One feature of the main benefits of the Bodyswaps application is the feedback provided to the user on their performance of each module. Users and their avatars "swap" places so that the user can then see how they reacted or performed. See Figure 9.

This was a multi-step endeavor led entirely by student technologists employed in the university's CIS Sandbox technology lab. Upon receiving the VR headsets, they managed the entire project and developed a project plan as shown below. The group facilitated training sessions for more than 150 students, faculty, and staff in a two-week period to introduce them to

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immersive education through the Bodyswaps training and simulation modules. As a result of this successful initiative, the following semester, the university's first-year student discovery seminar course piloted the use of the Bodyswaps modules across several sections.

Figure 9. Student participating in a Bodyswaps training.

Among the lessons learned, first and foremost, an MDM (mobile-device-management) application is essential for managing a network of VR headsets. One feature we would like to see is the ability to select a headset in use and automatically cast, or display, its content on a remote screen on demand. This capability enable lab assistants helping participants with their headsets to see exactly what the participants are seeing in their headsets, allowing them to give more detailed support or instructions. Often, lab assistants had to ask users if they saw a particular screen or icon to help troubleshoot their situations. In extreme cases, the assistants would have to trade places with the users, temporarily putting on their headsets so they could help navigate the situation. Also, the ability to cast any headset display to a screen would allow instructors to check in on student progress and allow users to share their experiences with the rest of the class in the context of a VR demonstration.

Having a dedicated space for using and storing the VR headsets is quite helpful. Our campus did not have such a space at first, and that meant distributing each headset and pair of controllers in an empty meeting or conference room, calibrating the "guardian zone" around each user and setting the height of the floor. Even with a dedicated VR classroom, which we later set up at our university, it takes about 5 minutes per headset to turn on and test prior to using the device.

Student tutors assisting the participants monitored how users in Bodyswaps reacted and interacted with the headsets and the applications, and they actively sought feedback. Students using the Bodyswaps modules were mostly pleased with the experience, which differed from their expectations or previous encounters with VR, which were mostly for gaming.

In addition to leading the training, students learned the steps involved in deploying a VR installation. Tasks included setting up the headsets, configuring the device management software, teaching other tutor facilitators how to use the learning modules, and scheduling and facilitating learning sessions. One tutor commented, "Although we used the Bodyswaps modules in our testing, we weren't only evaluating the program itself. Rather, we considered our sessions as proof of concept for VR applications in learning-based environments."

Exploring Underwater Ecosystems. Stoner (2024) developed virtual reality experiences designed to immerse learners enrolled in a natural science course to explore diverse marine environments. Providing hands-on learning activities "helps students engage more deeply and meaningfully with the course material than they ever could with a textbook." Using VR to explore these ecosystems addresses issues of equity as all students now have access to these undersea explorations that might not otherwise be available to them (Figure 10). ((Under) Sea Change, 2024) See Coastal Marine Ecosystem Experience (https://www.eco-mem.com/) for more information.

Figure 10. Exploring Ecosystems in VR.

This virtual experience in marine biology led to both increased student engagement and knowledge retention when compared to traditional classroom settings. Students felt more immersed and connected to the material, leading to better understanding and a desire for further

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Factor	Advantages	Disadvantages
Location	A dedicated lab space provides control over environment and resources.	A dedicated lab space requires planning and managing a space, need to consider sound isolation and additional costs for PCs.
Headsets	Tethered headsets can support more graphics-intensive applications. Non-tethered headsets are less expensive, easy to set up, and have a variety of applications available.	Tethered headsets require both a headset and a PC. Non-tethered headsets could be more prone to theft.
Applications	Many applications are available on a variety of content/ topics.	Educators must be careful when selecting VR apps to ensure they meet learning goals and improve the learning experience for students.

Table 2. VR Deployment Considerations

learning. While not implemented in a business context, this marine biology scenario also introduces students to how VR technology can improve learning and provides an experience that they can take to their future workplaces.

4. CONCLUSIONS

Overall, we found students excited about using VR technology in new ways. While faculty first had concerns about nausea or dizziness, students reporting discomfort were rare. We found that starting students with activities that they enjoyed (such as exploring YouTube videos) helped them quickly overcome motion sickness.

Successful configuration and deployment of VR headsets often requires institutional technological support and infrastructure. These steps serve as a guide for managing and deploying a VR installation.

- Unbox and label headsets and controllers.
- Configure headsets on MDM software
- Set up apps for use on headsets
- Test and learn the apps to be deployed
- Train facilitators who will support users in the VR lab or with the headset activities
- Lead or assist at sessions with users

Careful coordination and the identification of division of responsibilities is critical for a successful deployment. Faculty need to ensure that VR applications align with course goals and learning objectives. They can help promote the use of VR at their institutions by being role models for their colleagues who may be resistant to adopting new technologies for learning. By involving faculty throughout the process institutions can ensure that VR is integrated effectively into the learning environment.

Institutions have three primary options for deploying VR:

- Tethered (i.e. wired) headsets in a lab environment requiring not only the headset but also a PC to operate the headset
- Untethered headsets in a lab potentially reducing the risk for damage or loss but requiring a lab space
- Untethered headsets loaner program which are still under direct control through the MDM software

Table 2 summarizes advantages and disadvantages when considering factors involved in a VR deployment.

Overall, the authors found a good variety of VR applications spanning both business and arts and sciences. This allows IS faculty to collaborate with colleagues and departments that they might not otherwise do so.

With these deployment guidelines and an increasing number of engaging VR applications, institutions can create new learning spaces and experiences that encourage collaboration among colleagues and provide immersive learning opportunities in business education and across disciplines.

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APPENDIX A

Respondent Instructions

Instructions: The purpose of this study is to explore how different colleges/universities deployed VR technology. I would expect 1-1½ pages per school. Focus on tips and tricks, lessons learned, etc. This paper is meant to help other organizations who might be considering adopting VR.

The topics below are meant to spur ideas about what worked/didn't work. You cannot really answer all of them in 1 ½ pages, but you should emphasize what you feel the most valuable insights you gained as a result of your rollout.

Background – tell us a bit about your college/university. Describe how VR is being used at your school.

Organization (role of IT vs Faculty vs ??)

- How did the process of **purchasing** your equipment occur? Who managed it? Was IT involved?
- How did the process of **deploying** your equipment occur?
- How did the process of **supporting** your equipment occur?
    a. What issues did you run into after deployment?

Training:

- How were faculty brought up to speed on the technology?
- How were students trained?

Headsets:

- What vendors/headsets did you consider?
- How did you decide between tethered and untethered headsets?

Mobile Device Management (MDM) Tools:

- Did you consider using an MDM tool for managing the VR headsets? Which ones?

Motivation:

- Why did you pursue VR in your organization?

Funding:

- How did you fund your acquisition?

Software Tools

- What tools did you consider?
- Which ones did you pilot?

Student Response:

- What were the students response to the technology?

Future:

- Where is your program headed?

Conclusions: Key lessons learning for any of the above? Advice for other institutions?