Research on the type of game

Main research question:   
**What type of game would be the best for teaching about cyber security awareness and what kind of technologies will be used here? Is it beneficial to use AR/VR or any other technology?**

I looked online in which cases people use AR or VR; perhaps this can give me an idea of whether or not they are applicable to this project.

Top Benefits of AR and VR in Enterprise Learning

1. Providing Training in a Safe and Affordable Manner

Some industries need to train their employees in the processes and operations before they assume full responsibility. For instance, employees working in power plants or manufacturing units need to know how to operate machines properly on the site. Unless they get a good knowledge of things, they cannot be allowed to take over.

VR and AR can be used to make simulations where training can be safe and free of consequences. Employers can create an exact simulation of their operations with the equipment they use. New employees can then gain expertise through the simulation and experiment to their heart’s content. Even if they make mistakes, the consequences will only be felt in the virtual world of the [simulation](https://hurix.com/simulation-training-across-industry/).

VR simulations put the learner inside the virtual environment. They do not use the mouse or keyboard to navigate or interact. They can find themselves inside a 3D  production line where they can try their skills in real-time. VR simulations create the feel of navigating the real world effectively for better practical learning.

2. A Better Way of Practicing Skills

Practicing your skills is the best way to sharpen them. According to studies, we  retain much more information when we combine our learning with “doing.” Hands-on practice is the best way to retain information compared to discussions, lectures, reading, or even audio-visual learning. It has a retention rate of 75% compared to lectures with 5% retention capabilities.

3. Developing Soft Skills and Expertise

VR and AR can help enterprises develop their employees’ soft skills and expertise. Walmart, for example, has been using VR to train its employees to handle customers better. The retail giant even used VR to get employees familiar with dealing with Black Friday customers. Such opportunities help enterprises get employees ready to provide increased customer satisfaction.

Employers can create VR simulations for specific situations the employees are likely to encounter. This makes the employees more comfortable in the actual situations and enables them to provide better service to the customers. Walmart, in this case, uses the  Oculus VR headset to impart the training.  These technologies are ideal for letting employees develop soft skills.

4. Getting Employees Ready for Emergencies

VR and AR are ideal for training employees to handle real-life situations. Currently, some airports are using this technology for airport safety training.  The International Air Transport Association has long used a VR platform to train employees in on-ground operations. The technique allowed the association to cut back damage to aircraft and equipment and reduce the cost of training.

Some companies are using VR to train employees to handle emergencies.  Walmart seems to be a pioneer in VR learning, using the technology to train employees for real-time threats. The organization used VR to train the staff to learn how to control a shooting situation.

5. Enhance the Effectiveness of Learning Materials

Employers can develop solutions where pointing your phone camera at a specific text of a training manual leads to additional materials or resources popping up on the users’ screen. This technique can be used by enterprises to train employees about certain products, services, or solutions.

Research also shows VR teaching to be more effective than traditional methods.  According to a study, the VR/AR learners had a recall rate of 80% even after 1-year  of training. Traditional learning, on the other hand, has a recall rate of only 20%  after 1-week.

6. Helping  Employees  Develop Technical Skills

VR and AR are ideal for developing soft skills and practice-based learning. However, the same technologies can also help develop technical skills.

The healthcare industry has already started using VR to train doctors and nurses. In one study by Yale University, the VR learners performed surgeries 29%  faster and with 6 times fewer mistakes than the traditional learning group.

The construction industry, too, uses VR and AR for safety training. A study evaluated the effectiveness of immersive learning technologies for safety training. One group received training via VR simulation, and the other used traditional methods. The researchers then tested both groups after training.  And one month later, interestingly, the VR group outperformed the other group at the evaluations.

There is no doubt about the effectiveness of using [virtual reality in corporate training](https://www.hurix.com/five-industries-will-drive-virtual-reality-corporate-training/). That’s why many enterprises have decided to invest in immersive learning involving VR and AR.

7. The Best Way for Gamification

[Gamification](https://hurix.com/gamification-in-the-workplace-design-development-implementation/) has been used for a while to train and onboard employees. The approach helps employees learn better and show an increased success rate.  VR and AR can now take gamification to a completely new level.

Enterprises can now use VR to develop advanced gamification techniques for improved learning. The process is perfect for getting your employees on board and cutting the tiresome process in half. You can even present the best of your company and develop a highly engaging learning experience.

VR and AR have become mainstream in the gaming industry. Slowly, other industries are also opening up and using these technologies for interactive and personalized learning experiences. VR gamification is more preferred because it creates a sense of reality, and helps the employees learn in real time.

Where can I find AR/VR/MR?

So, where can you actually find XR technologies in daily life? How do they impact jobs and workplaces? We will lead you on a journey from education to journalism, passing by manufacturing and tourism, to show you the real integration of XR technologies today.

Education and workplace training

Education and training is one of the areas where AR/VR has the biggest impact, allowing enterprises and organisations to reduce the costs of training. It also reduces the risk of harm in situations where training could be dangerous, while also enabling the development of training experiences that are otherwise very difficult to offer. AR/VR also responds quickly to the need to update collaborator skills and competences. For example, with AR it is possible to provide more meaningful training by using AR glasses that project technical manuals or specs when interacting with devices.

As another example, [Labster](https://www.labster.com/" \t "_blank) makes it possible to interact with highly complex virtual science labs without needing to invest a considerable amount of money in equipment and with the ability to do it from home on your own device.

Many companies today are investing in VR and AR solutions to provide training and opportunities for their collaborators. Particularly in high-risk jobs dealing with remote or expensive equipment, AR and VR training is instrumental. Utilising digital twins (like a machine in need of repair) and other environment simulators, workers can train for real-world scenarios safely and cost-effectively, even in remote settings.

Advertising, marketing and shopping

Early adopters of VR and AR technologies have been able to incorporate them in their core business, giving their clients the opportunity to experience immersive situations for marketing strategies or even their customers the chance to try before they buy.

GAP released an app called Dressing Room that allows customers to try clothes on virtual people ([Gap Dressing Room AR APP By Avametric](https://vimeo.com/198481246)). Sephora uses AR to allow their clients to try lipstick and eyeliner so they have a clear idea how they will look. Another area impacted by VR/AR is real estate. With these technologies, clients can explore properties and get a first impression without needing to travel.

Healthcare

In the field of healthcare, we can find several examples of how VR and AR are reshaping the area. For example, using AR to project health indicators on AR glasses helps doctors to access immediate data about their patients. VR is also being used to help patients in mental therapy or to face different types of trauma, such as post-traumatic stress disorders (PTSD), phobias and addictions. This is through VR experiences that would otherwise be impossible to recreate, leading to new kinds of therapies. AR can also be used to assist in surgery or to test pre-surgery models and VR can help improve surgeons' skills with training simulations that allow them to plan and rehearse.

Leisure/Entertainment

Perhaps the area where XR is most well-known to the general public is VR games. This is one of the areas of greatest investment and development in extended reality.

Many people are familiar with the mobile game [Pokémon Go](https://en.wikipedia.org/wiki/Pok%C3%A9mon_Go). Launched in 2015, it uses smartphone location-based AR technology to create a simulated experience of seeing Pokémon characters in the real world. This mobile app game encourages users to get outside and interact with their real environment as well as the virtual game world. With over 500 million downloads in its first year, it remains a global forerunner in the space of mobile gaming augmented reality.  
  
VR/AR is also creating momentum in other areas of leisure and entertainment. For example, more and more museums and other cultural and science spaces offer VR and AR experiences to visitors in order to allow them to have a deeper immersive experience – so the visit has a greater impact. Movies and other forms of storytelling are also embracing VR, providing new forms of experience. Examples include [The Book of Distance](https://www.randallokita.com/the-book-of-distance) and [Everest Virtual Reality](https://www.everestvirtualreality.com/).

Architecture, design, prototyping and manufacturing

This was one of the first areas to adopt the power of AR/VR. Having the possibility to project an architectural model and experience it as immersive virtual reality or integrating it with the real world in a digital format creates the opportunity to perfect it before it is built. AR/VR provides architects, designers and builders with new tools to project future buildings and other infrastructure (inside and out) like never before. It improves the interaction between clients, architects and designers. They can show the final product before it even exists, and detect and correct any errors. With AR, for example, it is possible to enter a building that is under construction and project the electrical or plumbing systems; it is also possible to project other elements before they are physically put in place. In prototyping, it takes the drawings from paper and realises them digitally.

# Findings

<https://courses.minnalearn.com/en/courses/emerging-technologies/extended-reality-vr-ar-mr/ar-vr-in-our-daily-life/>

<https://www.hurix.com/benefits-of-using-ar-vr-technology-in-employee-training/#:~:text=VR%20and%20AR%20can%20be,experiment%20to%20their%20heart's%20content>

According to these sources, AR and VR is mostly used to recreate hard to reach places or difficult to obtain objects. For example, a preview of a certain workplace or seeing how your room would look with certain furniture. It seems to be mostly useful for immersion.

Because the client wants the game to be replayed often, be used for classes and potentially be used for a larger public, it is unviable to use Virtual Reality for this game as a VR headset is not commonly available. While a school could have one, it would take too long to let all the students play the game, denying the option of replayability which is a big wish from my client. It would also add very little value to the project; immersion is not a big requirement, and the topic of phishing and social engineering does not require an unviable workspace or expensive product.

The same goes for augmented reality; there is no real product to be displayed on the topic of phishing and social engineering.

Due to the nature of the game, (it’s about phishing and social engineering), I opted to go for PC as main platform. It allows me to work on a larger screen and replicate the view of a virtual pc better for the game.

Target Audience is students from around 18-30, though I must keep in mind that the game could be used more widely.