

Video Games: Client Centered Adaptations

Intent: *To provide information and resources for clients with amputations and for providers, in order to return to video gaming.*

Video games have been a part of modern society since the late 1970s and 1980s. The people who played the early systems are now growing older, but many continue to play. Video games have also become a part of modern culture with the rise of the professions of eSports, online streaming videos, as well as in movies and television. Billions of dollars are spent within the video game industry to develop the latest and greatest systems and games. However, only recently have industry leaders created adaptive devices for gamers with disabilities.

Off the Shelf Adaptations

Microsoft recently released an adaptive controller that works with the Xbox One system and a Windows based computer. This is a first in the industry, a large company taking the initiative to market and sell an adaptive gaming product. The device has worked well, but for some gamers with an amputation, it has not been the best solution. The device starts at \$99 USD, but may require the gamer to buy switches and other control devices. A standard Xbox One controller has ten buttons, and the adaptive controller only has two built in programable buttons. The gamer must acquire extra switches to account for those buttons, and at a cost of at least \$45 USD per switch, the cost can easily build up. Another issue for the Microsoft device, is that it only works with Microsoft systems. This can be a challenge since many gamers are usually very loyal to their favorite brand, such as the Sony Playstation or Nintendo Switch, usually purchasing every generation of the brand's systems as they get released. Gamers may invest thousands of dollars buying games that only work for their system, but if they have an amputation, they may not be able to play their non-Microsoft system. There has been some success modifying the Microsoft controller onto other systems through adaptors and software, but this can have another increase in cost and can be more technical than some clients and/or providers wish to attempt.

Another type of controller that is commercially available are customizable controllers such as the *Scuf Controller* by Scuf Gaming International LLC. Typically, a popular choice for "hardcore" or professional gamers, these controllers have customizable buttons on the back of the controllers, built-up joysticks, and more software options. With these customizations, some clients with unilateral amputations or digit amputations have found that they are able to return to gaming. These controllers can work for the Sony Playstation, as well as the Microsoft Xbox. However, they can be expensive starting at \$150 USD, and can require extra purchases for further customizations.

Non-profit organizations like Warfighter Engaged, Inc. out of New Jersey, have been building custom controllers and adaptations for gamers with amputations since 2012. Their focus is to get the gamer back into the game by adapting the environment with controller modifications and prosthesis enhancements. This has been successful at getting players back into the game.

In-Clinic Adaptations

Some clients are apprehensive about spending the amount of money required for some of the off the shelf adaptations. Therefore, with some in-clinic resources and a little ingenuity, low cost adaptations can be made.

Using thermoplastic material, joysticks on the standard controller can be built. Some patients have even been able to put long screws into the controller's joystick to increase their ability to reach it.

Typically, thumbs are required to manipulate the two joysticks on most controllers, which is difficult with a thumb amputation. By custom fabricating a thermoplastic prosthetic thumb, which are often used for early prosthesis training, clients can return to gaming. It is also recommended to add friction material, such as *Dycem*, to the end of the thermoplastic prosthetic thumb to provide a better grip to the device and controller.

Games for Therapy

There is no denying the therapeutic benefit of many video games. The Nintendo Wii continues to be used in various therapy settings across the world, even though the system was discontinued in 2013. However, many clients are more into the newest systems. There are new games for the current systems that also have therapeutic benefit. Nintendo has released a new Fitness game called *Ring Fit Adventure* for their Switch system. This requires the player to perform upper and lower body exercises to progress through the game and storyline. Games such as the *Just Dance* and *Dance Dance Revolution* require the player to use balance and whole-body movement to achieve in-game goals.

Another new frontier for therapeutic gaming is the increased availability of virtual reality (VR). VR systems have become more affordable, which enables them to be used in clinics. Stand-alone systems such as the *Oculus Quest* by Facebook Technologies, LLC is only \$399.00 USD, but has everything included. No need to purchase another system. This allows clients to place themselves into an immersive virtual environment, and to safely attempt tasks they never thought possible.

Tips for Non-Gamer Providers

Some therapists and providers without gaming experience may be overwhelmed with new video game technology. However, gaming is just like other leisure pursuits, and can be analyzed just like any other activity. Gamers usually like to talk about their gaming systems and want people to play with them. Don't be afraid to ask the client questions about how to play the game or even try it out. Older systems such as the original *Nintendo Entertainment System* and *Sega Genesis* have been remade and are a great introduction to gaming, which can then be used to better relate to gamer clients. There are also many online resources with step-by-step instructions on most games.

So Game On!