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ABSTRACT

Video games have become a mainstream form of entertainment that are played regularly by many around the world, including a large number of youth with disabilities (YwD). Video games' popular presence in our society has created exciting new opportunities for student learning that educators who work with YwD can leverage for both skill acquisition and increased social interactions. This is especially true given that screens have become one of the most consistent and accessible ways of maintaining human contact, despite physical distances, since the onset of the COVID-19 pandemic and the isolation that accompanied it. This paper is specifically focused on the video game play of transition-aged YwD, and the social skill, leisure play, and social connection benefits that exist for them when engaging in game play in virtual spaces. The benefits of including video game play in transition planning and recommendations for educators who wish to incorporate it into their practice are included.

KEYWORDS

Youth with disabilities, transition, video games, virtual spaces, social connections, gaming communities

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Video games are a mainstream form of entertainment that are enjoyed by people of all ages, are played regularly by over half (estimated between 191 million and 225 million) of Americans (Davis et al., 2022; Entertainment Software Association [ESA], 2024), and gross almost as much money annually as motion pictures (Williams, 2006; ESA, 2024). ESA's most recent (2024) report found that 61% of people in the United States reported playing video games for at least an hour a week, and individuals with disabilities are an important part of the growing and lucrative video game industry.

Table 1. ***Key Terms and Definitions***

Video Games	"Video games" refers to electronic games that are played on a personal computer (PC), smart phone, or console game system (e.g., PlayStation, Xbox) in both online and offline environments.
Transition-aged	For the purposes of this article "transition-aged" refers to youth between the ages of 14-24. IDEA considers transition-aged to be between 16-22 years old, in some states transition requirements begin at 14 years old, and the Workforce Innovation Opportunity Act (WIOA) defines youth as an individual who is between 14 and 24 years old.
Youth	"Youth" is used as opposed to "students" or "children" because it encompasses minors who are both in school, and therefore students, and those individuals who are school-aged but not in school for a variety of reasons. It also encompasses young adults who are no longer minors, but still all within the emerging adulthood ages of 18-25 (Arnett, 2000).
Disability	"Disability" refers to individuals who have been identified by the medical establishment as having a disabling condition, those whom the school system as identified as having a condition that would qualify them to receive special education services under IDEA or Section 504 of the Rehabilitation Act, those who have not been identified but would qualify if assessed, and those who self-identify as disabled.

In fact, it is estimated that at least 20% of all video game players are players with a disability (Reisinger, 2020). These high levels of video game play are not only found in the United States. A 2020 study completed in the Netherlands indicated that as many as 92% of study participants with disabilities reported playing video games in their leisure time (Reisinger), and Muscular Dystrophy UK found that 60% of YwD under the age of 24 listed gaming as their favorite or most frequent pastime (Armstrong, 2018).

As instructional and social time for many people has moved into more virtual spaces, like Facetime and Zoom, personal interactions over a distance and on a screen have become the norm for many people around the world (Gao & Sai, 2020). This is a conceptual shift for many, as "screen time" has often been seen has having negative impacts on mental, emotional, and physical health by parents and educators alike (Kaye et al., 2020). However, screens have become one of the most consistent and accessible ways of maintaining human contact since the onset of the pandemic and the physical isolation that came with it (Gao & Sai, 2020). It is not controversial to suggest that a peer or colleague group meet online now, as we can see the clear need and advantages of doing so. There are likewise needs met and advantages realized for youth who engage in screen time that is not specifically academic or professionally focused.

Notes on Terminology

This paper is specifically focused on the video game play of transition-aged YwD, and the potential benefits that exist for them when engaging in game play in virtual spaces. To avoid confusion and increase clarity, several key terms are defined for readers in Table 1. In addition to the following terms, it is worth noting that individuals with disabilities are referred to as people first and as having a disability as a second (or third) descriptor, following the standards set forth

in the guidelines of the American Psychological Association (APA). Person First Language and similar APA guidelines are professional standards in the field and geographic location in which this article is written, although the author acknowledges that in many places and spheres Identity First Language is the preferred terminology, and those preferences are reflected in the text when known.

Areas of Focus

There are many reasons why individuals with disabilities choose to engage in video gaming in the numbers they do. A recent study by Cairns et al. (2021) found that the leading reason people with disabilities identified as why they choose to play video games is empowerment. Other reasons cited include relaxation, developing new skills, learning about the world, enjoying the artistic elements, to have equal abilities with others, and for the pure enjoyment of it (Cairns et al., 2021). Video games' ubiquitous presence in our society, and high levels of interest in gaming, creates new opportunities for learning that educators and families who work with YwD can leverage for new skill acquisition and increased social interactions.

This article focuses on how video games can be used to meet three specific areas of need for transition-aged YwD. Specifically, the needs for 1) social skills, 2) play, and 3) social connections. The Individuals with Disabilities Education Act (IDEA), one of the major federal pieces of legislation designed to protect the rights of students with disabilities in the United States, asserts that transition planning must include "independent living, or community participation" that takes "into account the student's strengths, preferences and interests, and includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives" (IDEA, Sec. 300.43 [a]). Related services include recreational activities that are therapeutic and those that are not. These services can include social skills training and community integration, with a focus on inclusive activities with peers without disabilities to the greatest extent possible.

Social Skills

YwD often struggle more with social skills, and making personal connections, than their peers without disabilities (Brooks et al., 2015; Carter et al., 2013; Kagohara, 2011; Locke et al., 2017). Beyond the more obvious implications of social skills deficits, like isolation, depression, and loneliness, a lack of social skills may also negatively impact academic performance in school, due in part to low self-esteem (Didehbani et al., 2016). Not only does the development of social skills aid youth in reaping myriad social rewards, but difficulties with social communication can also negatively influence both peer relationships and academic achievement (Didehbani et al., 2016), postsecondary outcomes (Newman et al., 2011), and can even result in school suspensions, expulsions, incarceration, and school drop-out (Gage et al., 2012). With this much on the line, it is essential that educators and families alike make the acquisition of social skills a high priority for the youth with whom they work for and with. However, the problems of how families and educators can best support YwD in gaining social skills and forming friendships have been further exacerbated by the physical isolation that resulted from the COVID-19 pandemic (Larivière-Bastien et al., 2022).

To Play

The desire to engage in game play is an essential part of the human experience. What's more, Dobbins et al. (2020) found that game play and playfulness can be "a vehicle to engage in social relationships, experience positive emotions, improve self-concept, and experience motivational energy" (p. 600). In addition to games and play being generally enjoyable activities to engage in, it is especially important that YwD have opportunities to learn age-appropriate leisure skills that they can engage in independently (Jerome et al, 2007). Youth need to have ample opportunities to engage in age-appropriate leisure skills "because they have the potential to promote community inclusion" and are "a constructive way of spending their free time" (Kagohara, 2011, p. 34). For YwD, these age-appropriate leisure skills help to fill independent living and social skill needs that can have positive impacts on quality of life (Jerome et al. 2007; Kagohara, 2011). However, youth who live in rural areas can face barriers to their play that their peers in urban and suburban areas do not, including "dispersed land use, fewer walkable destinations, and scarcely available infrastructure" (Umstattd Meyer et al, 2019, p. 2) like parks playgrounds, and recreation facilities.

Social Connections

Social connections are also an essential part of the human experience, but many transition-aged YwD experience higher levels of social isolation than their peers without disabilities (Carter et al., 2013; Locke et al., 2017). While it is true that many youths find online spaces to engage in social activities, many others face barriers "associated with offline inequalities, such as disability and/or their level of educational attainment, social skills, their family's socioeconomic circumstances, or residence in a rural or regional areas" (Raghavendra et al., 2018, p. 111). As Raghavendra et al. (2018) note, there are also "likely to be lower levels of quality in technical infrastructure in rural communities and less Internet connectivity, which exacerbate existing social exclusion" for YwD in more geographically isolated areas (p. 111). While "participation in social activities is positively related to children's social adjustment" (Brooks, et al., 2015), when people lack social connections they have a difficult time relating to other people, "may struggle to develop relationships or to understand their role in the world, and feel isolated as a result" (McLouglin et al., 2018, p. 6). This social isolation can then lead to a decrease in self-esteem, a distrust of others, increased feelings of loneliness, feelings of not belonging, and further separation from society (McLouglin et al., 2018). Conversely, higher levels of social connectedness have been shown to decrease levels of depression and reduce behavioral problems (McLouglin et al., 2018).

Youth with increased vulnerability and/or health concerns have also experienced even higher levels of social isolation, as home remained one of the few places they could safely protect themselves from virus exposure as schools and community centers closed. YwD in more rural areas have even fewer opportunities to communicate with peers since the onset of the pandemic than their urban and suburban counterparts, owing in large part to their small community populations, physical isolation, and limited access to vaccines and other health care (Huang et al., 2022).

How Can Video Games Meet These Needs?

When examining the ways video game play can benefit YwD's needs related to social skills, play, and social connection, several different areas of existing literature were examined. Specifically,

the accessibility of video games to players with disabilities, video games and social skills, video games to meet the need to play, and video games and social connections. An unexpected theme that emerged during the review of literature related to video game play and YwD was that of empowerment, and that theme will also be explored in subsequent sections.

Accessibility

Any discussion related to YwD and the benefits of video game play would be incomplete without a look at accessibility in gaming. If YwD cannot play the games available, then any potential benefits to social skills, play and leisure, and social connections would be unattainable to many who would otherwise benefit. The Centers for Disease Control and Prevention (2020) defines accessibility related to disability as **"**when the needs of people with disabilities are specifically considered, and products, services, and facilities are built or modified so that they can be used by people of all abilities" (p. 3). Accessibility has come to the forefront in the game industry in recent years (Cairns et al., 2021; Shin, 2021). In many ways the gaming industry is leading technical innovation in digital accessibly, and it is no wonder that they are when one considers that gamers with disabilities comprise such a large constituency of their consumer base.

Video game accessibility is a subset of computer accessibility which focuses on how to make video games on multiple platforms playable by people of all ages with various impairments (e.g., physical and/or cognitive disabilities) that would otherwise hinder their ability to access the game's content. Aela (2022) describes accessibility in game design as "the willingness to create opportunities so that people can overcome obstacles in daily situations" (p. 2). Accessibility features in games can currently be found in both software and hardware and include options to alter the way the game looks, sounds, listens, feels, and is controlled. The implications of this are that players with diverse abilities and disabilities, including those with cognitive, physical, and sensory needs, can often find benefit in one or more of the hardware and software accessibility features.

Games that large numbers of players deem as inaccessible, like *Sekiro: Shadows Die Twice* and *Dark Souls 3*, have been widely debated and criticized, while games that present players with a variety of accessibility features, like *Celeste*, *God of War*, *Ratchet & Clank: Rift Apart*, *The Last of Us Part II*, *Marvel's Spider-Man and Spider-Man: Miles Morales* are praised and seen as paving the way for further advances in game accessibility (Shin, 2021). In fact, many game menus now include high levels of customizability, and several mainstream game companies have developed adaptive hardware (Shin, 2021; Young, 2021).

In 2016 Sony, the largest video game publisher and game console maker in the world, "included a broad set of accessibility options in the operating system on their PlayStation 4" (Cairnes, 2021, p. 2), and in 2018 Microsoft, creators of the game console Xbox, released the Xbox Adaptive Controller (XAC). The XAC is described by videogame player and author with a disability Britt H. Young as "a large, flat gaming pad with two large buttons and nineteen 3.5mm ports to plug in external devices such as joysticks, buttons, switches, pedals, and other specially-designed devices" (p. 10). A device called a *quadstick* can "enable quadriplegic gamers to play PlayStation, Xbox, Nintendo, and even PC games with their mouths. There are even specialized gaming eye trackers" (Young, 2021, p. 8). Other players utilize something called a *thumbstick* that can be operated with the player's mouth, which a player with cerebral palsy talked about using "so he can continue gaming, which he says was especially important in the pandemic because of the need to maintain isolation to protect himself" (Young, 2021). The *Game of the Year* awards

include an *Innovation in Accessibility* category (Aela, 2022). Reisinger (2020) notes that "by creating more accessible games, game publishers and developers also reach a bigger audience as the community of people with disabilities comprise a relatively high percentage of gamers" (p. 3).

In addition to hardware products that have incorporated the use of switches, eye-trackers, and mouth-controlled devices to increase game accessibility for players with physical disabilities, game creators are also making accessibility advancements in the games themselves that do not require additional hardware. This can be especially beneficial to players with sensory, vision, or audio needs. In 2020 a man who identifies as a Blind Gamer named Steve Saylor made international headlines when he found the (then) new game *The Last of Us Part II* so accessible that he was moved to tears while trying it out for the first time on his YouTube channel (Elassar, 2020; Molloy & Carter, 2020). Courtney Craven, who has a hearing impairment and some motor-control issues, had a similar reaction to playing the game for the first time. Molloy & Carter (2020) quote them as saying, "The first thing I did upon launching [the game] for the first time was FaceTime a friend and cry" (p. 1). The intensity of these emotional reactions are testaments to the value the ability to fully engage in the gaming experience is to so many gamers with disabilities.

Principles of Universal Design are often utilized by game creators and are even expressly stated as guiding design goals. Game Director Matthew Gallant acknowledges this directly in the accessibility trailer for *The Last of Us Part I*, rebuilt with more accessibility features for rerelease on PlayStation 5, saying that "the principles behind accessibility are good Universal Design Principles" (PlayStation, 2022, 0:07), and this guided many of the User Interface decisions made in the game. He elaborates by saying that if the "information is only available on screen, then it's not accessible to a blind player. And if the information is something you only hear, then it is not accessible to a Deaf player" (PlayStation, 2022, 0:14). The fact the there is a trailer in which a Sony executive is proud of their game's accessibility is noteworthy in and of itself.

However, there is still work to be done. As Anderson and Schrier note in their (2022) examination of disability and video game journalism, discourse surrounding disability and gaming accessibility are often self-congratulatory in nature. This self- congratulation on the part of journalists and the games industry "overly simplifies the need for nuanced, complex, and dynamic accessibility solutions" which "by necessity emphasizes success and reduces the impetus to continue to address accessibility needs" (p. 188). This outlook "punishes individuals who continue to advocate for change by suggesting that there no longer exists a need for change" (Anderson & Schrier, 2022, p. 189). It is important that we celebrate the inclusive advancements that have been made in the games industry while still noting that the work towards true inclusivity is not done.

Video Games and Social Skills

Since playing video games often requires cooperation between multiple players and can even facilitate social interactions between two players playing different games, they are often "considered as an instrument of socialization that promotes or develops social skills of the individual" (Henriques, 2017, p. 203). Gentile et al. (2009) found that the playing of prosocial video games actually increases prosocial behavior. Furthermore, Murry (2018) notes that for social skills training for YwD to be most effective, they must find the social skills they have seen others model "personally relevant and rewarding" (236). By providing access to video games that are designed for entertainment, families and educators can give youth the opportunity to learn and practice social skills in an environment that can be both socially relevant and personally rewarding. The utilization of virtual spaces also allows youth the ability to practice the social skills they are

learning in environments that can be less intimidating than the "real" thing. This also has beneficial implications for youth who do not live close to public settlings where people gather, like malls and city centers, and for whom physical exposure to large numbers of strangers is a health concern.

Video Games and Play

Seaborn & Fels (2015) note that "although digital games are a relatively new development, games have existed in human cultures since the dawn of recorded culture as tools for entertainment, relationship-building, training, and arguably survival" (p. 14). In her (2018) piece *Power on: Why video games matter*, Chess asserts that "games are unique interfaces for telling stories, offering experiences, and getting us invested in characters that can appeal to a lot of people" (p. 18). With that being the case, "digital play becomes an important mechanism to rethink and apply vital leisure activities to our everyday lives by telling beautiful stories in new and breathtaking ways" (Chess, 2018, p. 19).

Planning for age-appropriate leisure activities for YwD to engage in after they leave school is a codified aspect of transition planning which can, and should, include activities that utilize technology. This can include age-appropriate leisure activities that involve gaming systems, computers, and hand-held devices, especially since "the use of personal computers has become an important form of leisure activity for many, including those with developmental disabilities" (Jerome et al., 2007, p. 185). However, YwD "may not have the necessary skills or the same opportunities to access multimedia-based leisure materials as their typical peers" (Kagohara, 2011, p. 33). Teachers, vocational rehabilitation councilors, and families should therefore be mindful about their inclusion when planning for instruction and resources to support youth in engaging in age-appropriate leisure activities.

Video Games and Social Connections

Playing games that take place in virtual spaces can enable youth to make social connections without the requirement of physical proximity. This is of great benefit to youth who have health conditions that make close personal contact inadvisable or impossible, those who live significant distances from other like-minded peers, and for those who seek friendship but struggle with social cues and skills. The charity AbleGamers, whose mission is to "creat[e] opportunities that enable play in order to combat social isolation, foster inclusive communities, and improve the quality of life for people with disabilities" (AbleGamers.org, Our Mission section), asserts that video games can teach players with disabilities "how to communicate and bond with others" since "many games require cooperation, teamwork, and communication" (AbleGamers, 2021, p. 1). Video games can provide opportunities for peers to model pro-social behavior and give players a less stressful place to build friendships and alliances. These friendships, though often at a distance, have real meaning and value to the parties involved.

Connections Afar

Many of the best-selling games have cooperative and team-based game play that takes place within those virtual game spaces. Players can be in different towns, different states, and even different countries and still play cooperatively together in real time. While exploring the relationships between video game involvement and social connections, Kowert and Oldmeadow (2013) found

that “individuals who are less able to engage others in social interaction seem to be more likely to be actively engaged within video game spaces (both offline and online)” (p. 1876). In a separate (2015) study, Kowert and Oldmeadow describe how the “highly social environments [in video games] allow players to connect, interact with, and learn from each other” (p. 556). Henriques (2017) notes that new technologies have allowed people to “experience new ways of feeling, thinking, acting and interacting, using the machine as a means of communication, another way of being in society” (p. 203). The connections made and friendships hold real, tangible value even though they are taking place in virtual spaces. In Williams (2006) article *Groups and Goblins: The social and civic impact of an online game* an avid player says through gaming they “have the opportunity to meet people from so many different places. I mean, I know people from Iceland, Korea, you know, all over Europe. And it gives you opportunities to talk to people you wouldn’t normally talk to and you get to learn a lot about different cultures” (p. 654-655).

Robert Steen, whose son Mats was an avid online game player and passed away as a result of complications related to Duchenne muscular dystrophy (DMD) at age 25, describes the awe he and Mats’ family felt when they learned about his friends who lived in countries all over the world. Robert and his wife Trude recalled how they frequently discouraged Mats from engaging in his favorite game *World of Warcraft*, describing how their “perception of friendship was very traditional" (Schaubert, 2019, p. 9). This all changed after Mats’ death, when friends from all over the world reached out to offer their condolences, and friends from Norway, the Netherlands, the UK, Finland, and Denmark all traveled to attend his funeral in Oslo in person. Kai Simon, one of Mats’ friends from *World of Warcraft*, spoke at Mats’ funeral and said that even beyond all those gathered in person that day, “a candle is being lit for Mats in a classroom in the Netherlands, a candle burns in a call centre in Ireland, in a library in Sweden there is a candle lit, he is remembered in a little beauty parlour in Finland, a municipal office in Denmark, many places in England. All over Europe, Mats is remembered by many more than those who had the opportunity to come here today” (Schaubert, 2019, p. 17).

Learning about the rich life their son was able to lead online and the real and enduring friendships he forged, many of them spanning over a decade, was a source of “intense emotional joy that came from seeing what kind of a life Mats had in fact lived. With real friends, sweethearts, people who cared so much that they would fly from another country to the funeral service of someone they had never met. That was powerful" (Schaubert, 2019, p. 16). The real friendships that Mats was able to forge while rarely leaving his home and without meeting any of them in person are a real testament to the real social connections that video games can bring into the lives of youth who have limited opportunities, due to health concerns, disability, or geographic isolation, to engage with other people face-to-face.

The kinds of connections Mats was able to build through game play are not uncommon. Cairns et al (2021) describe how one of the leading reasons gamers with disabilities value their gaming experiences are the abilities to connect with friends and family and to build communities. It is not really surprising to find the sort of robust community that can be found on caniplaythat.com, ablegamers.org, and other similar sites when one considers the large number of individuals with disabilities who engage in video game play around the world. Playing video games can provide YwD “with greater opportunities to interact with others and form friendships, which helps to decrease feelings of social isolation” (AbleGamers, 2021, p. 1). “Accessibility is about getting *to* the game”, Young (2021) says “but it’s also about the social worlds *within* them. Sometimes accessibility is the anonymity that online gaming affords, but other times it’s the ability of games to enable friendship and compassion” (p. 12).

Twitch

The Amazon-owned video game streaming platform *Twitch* attracts millions of users from around the world every day (https://www.twitch.tv/) and has created another platform for game players to connect on. On *Twitch* video game players share their screens as they play games and viewers can watch this live stream in real time. This might not seem like a highly social environment from the outside looking in, but a closer look will reveal how truly social it can be. As gamers live-stream their game play they often interact with the people who are watching them play, and the people watching them play interact both with the content streamer and with each other in real time. This allows *Twitch* to host yet another large gaming community, and one that is open to anyone who logs on. It is not surprising then to find players with disabilities active on this platform, both as game play streamers and as followers of streamers.

Connections at Home

Many of the social aspects of games have been described thus far as taking place in virtual gaming environments, but video games that are not "online" as we would traditionally think of them have a plethora of highly social applications as well. Families and friends often play games together and, given that the current median age of gamers is in their mid-thirties (ESA, 2019), expectations are that this trend will continue. In *Families at play: Connecting and learning through video games* (2018), Siyahhan and Gee focus on families who play video games together and what that play looks like. They describe video game play, like engagement with other forms of media, as an opportunity for sharing, exploring, and learning together. For the families they researched, this time spent together could look like family members playing the same game together, or one or more members playing and exploring while other family members watched. Family members who share a common interest, like *Spider-Man* or *Star Wars*, might actively play those games together, while in other circumstances those same family members might engage in a more supervisory or tutorial role (Siyahhan & Gee, 2019). These gaming families are not unique to this study, as 57% of parents in the United States report that they play video games with their children on at least a weekly basis, and 74% of parents believe that video games can provide educational experiences for their children (ESA, 2019).

Empowerment

As noted in the opening of this article, empowerment is the leading reason players with disabilities cite for why they play. In their 2021 study Cairns et al. note the ability to play video games "can make players with disabilities feel equal in a major part of modern culture" (p. 3). This is true for Valerie Johnson, a once-avid traveler who was diagnosed with idiopathic intracranial hypertension, and who now uses virtual reality video games to explore the world without leaving her house (Brooks, 2021). She spoke to National Geographic about playing *Walden, A Game*, which is an open world exploration simulation developed by the University of Southern California's Game Innovation Lab that can be played on the Xbox, PlayStation 4, and both PC and Mac computers. *Walden, A Game* provides an immersive experience "where players can explore philosopher Henry David Thoreau's woodland oasis up close" (Brooks, 2021, p. 2). Johnson enjoys getting to experience the rustling of the wind through the forest, admiring the

tall pine trees at the edge of the pond, and getting to experience the change of seasons from the safety of her Texas home (Brooks, 2021). The idea of enablement, empowerment, and exploration through play is a consistent theme expressed by players with disabilities who often "feel that digital games allow them to be on an equal footing with others, irrespective of disability" (Cairns, 2021, p. 3). In fact, Bryer and Seigler (2012) describe how players "are granted voice, choice, and creative energy beginning with their initial act in the world: creation and design of their individual avatar" (p. 438).

In 2018 Courtney Craven co-founded the popular website Can I Play That? (https://caniplaythat.com/) with their partner Susan Banks. This is a website devoted exclusively to the experiences of gamers with disabilities, and includes accessibility reviews, product showcases, commentaries, and sections devoted to more personal reflection, including a section titled *Why I Play*. In one of these *Why I Play* entries, Craven (2020) describes how "the joy of games, for me, lies in what they can replace for me. I can fire up *Red Dead Redemption 2* and spend hours exploring digital America, from the prairie to the bayou to the snow-covered mountains. I can hike from Montana down to Texas if I feel so inclined, and with a horse!" (p. 2). This experience is a consistent benefit of video games cited by players with disabilities, as these video games "can draw people away from the real world and into a new and different world where they can do what they want, to some extent" (Cairnes et al., 2021, p. 6). Other entries in *Why I Play* include reflections on loss, "grief-gaming", and an essay about playing games with a schizophrenia diagnosis. Visitors to the site not only have access to a wealth of knowledge related to disability, accessibility, and gaming, but also leave with a sense of just how welcoming this community can be for the thousands who identify as "disabled gamers". In video games players can be who they want and go where they want without the limitations of reality.

Concerns

There are concerns about video games, whether they are designed to be played online or not, should be carefully considered by families and educators. Common concerns include graphic and violent content, anti-social behavior, and gender-based objectification and discrimination. The barriers related to cost of game consoles and games, and availability of Internet infrastructure are also valid concerns of many parents and educators. The pro-social potentials of video game play have already been addressed, so concerns about violent game content, the safety of virtual gaming communities, social and behavioral considerations, and the practicality of integrating video games into transition-based instruction in areas with limited monetary resources and technology infrastructure will be addressed below.

Game Content

One of the most common concerns that people have regarding youth engagement with video games are related to the violence in the video games themselves (Suziedelyte, 2021). It is certainly true that many video games require some level of violence (hitting, shooting guns, etc.) in order for the player to be successful. Games like *Grand Theft Auto* and *Hitman* are often noted as games with particularly problematic content, and each have a rating of M (for mature), a rating that only 13% of video games are assigned (ESA, 2024). It is true that all video games, like other forms of media, are not appropriate for everyone. Just as television shows and movies have ratings that give parents and consumers information about the age-suitability and content of the show or movie, so too are

video games rated for age and content appropriateness. Families and educators should certainly monitor which games youth in their care are playing, and there is strong evidence that they do just that. The ESA's *Essential Facts about the Computer and Video Game Industry* (2019) reports that 90% of parents reported paying attention to the games that youth in their care engaged with.

Safety and Inclusivity

Another area of concern relating to both video game development and game play has to do with the inclusivity of virtual gaming spaces. Specifically, how historically marginalized groups (women, members of the LGBTQ+ community, racial and ethnic minorities, those with disabilities) are treated both on the creation and play sides of gaming communities. While these concerns are absolutely valid, there is evidence that virtual game spaces have become increasingly safe places for diverse players, including those players with disabilities. As a 2021 *Wired* article notes, gamers with disabilities are forming their own communities and transforming the video game industry (Stoner, 2021). Anne Hamill, a retired psychologist and avid *World of Warcraft* player describes online video game play as "a fantastic arena for meeting people and building friendships. We discover each other without stereotypes in the way. It provides the chance to find out if we like someone - and only then reveal our age, gender, disability or skin colour if we feel like it" (Schaubert, 2019, p. 16). The award-winning game *Spider-Man: Miles Morales* even features the teenage Miles Morales in his Spider-Man suit meeting up with a Deaf street artist named Hailey Cooper (acted by the Black Deaf actress Natasha Ofili) and engaging in a conversation completely in American Sign Language with "accurate hand signs and narration, with Miles speaking as he signs" (Melzer, 2020, p. 1).

Michael Luckett, a *Twitch* streamer with a spinal cord injury, says that his streaming channel "has always focused on educating the world on disabilities and gaming" and that his gaming handle MikeTheQuad is "a great icebreaker to talk about disabilities" (Stoner, 2021, p. 6) with others on the platform. Many *Twitch* channels are hosted by players with disclosed disabilities, like Steven Spohn of AbleGamers, skilled flighting game player Carlos Vasquez who is blind, and Deaf gamer Chris Robinson who founded the channel DeafGamersTV. Like most media platforms, *Twitch* is not perfect when it comes to accessibility and representation (Stoner, 2021), but streamers and followers alike have been vocal about making it more inclusive for players with disabilities (Stoner, 2021; Nightingale, 2022).

Social and Behavioral Concerns

While many YwD struggle with social and behavioral skills more than their peers without disabilities, a fact which can make the social aspects of video game play especially meaningful for YwD, these same skill deficits can also be of concern in virtual and physical spaces. Valid concerns include the time YwD spend playing video games in place of in-person interactions, and difficulties differentiating the differences between behavior that is social acceptable in virtual game spaces verses social acceptable behavior in non-game spaces. Research examining the video game play of youth with ASD have found that youth on the autism spectrum are more likely to spend longer times playing video games than peers, and might be more likely to be affected by negative effects. For example, Davis et al. (2023) describe an "umbrella of issues referred to as *problematic video game behavior*" (p. 3567), which were found to be more common with

neurodiverse youth, and can include "impairment in social and communication skills and engagement in restricted and repetitive behaviors" (p. 3567).

But studies in recent years have shown various, and often conflicting, impacts of video game place and negative social behavior. In a study that included over 3000 youth across six European countries, Kovess-Masfety et al. (2016) found that frequent video gaming (defined as over 5 hours a week) "not associated with an increase of conduct disorder or any externalizing disorder nor was it associated with suicidal thoughts or thoughts of death" (p. 355). Alkhayat & Ibrahim's (2020) examination of video games and behavior of youth with ASD likewise found that when families played video games together negative behaviors were found to decrease, and longer durations of playing the video games did not negatively contribute to participants' school performance, homework completion, or feelings of agitation or isolation. This supports Chess' (2018) assertion that when we "talk about video games, we talk about them in the wrong way and often about the wrong games" because we too often "focus on the negative, such as whether video games can cause violence, or on the potential problems of the aforementioned less-diverse, toxic culture" (p. 17). Likewise, DeCamp and Ferguson's (2016) analyses of violent video games and real-life youth violence "found only weak and mixed evidence of a relationship between playing violent video games and violent behavior among youth, but did find more consistent evidence of a relationship between exposure to real-life violence and youth violence" (397). As Kowert and Oldmeadow (2015) explain, it "would not be prudent to draw conclusions as to the nature of the relationships between social outcomes and video game involvement, particularly the negative ones, without consideration for the personal attributes of game players themselves" (p. 558). Instead, we should focus on ways to get more people involved in gaming and on the unique positives that this form of meaningful leisure can bring to our lives (Chess, 2018).

Connectivity, Cost, and Infrastructure

Physical isolation does not have to equal social isolation for youth in more rural communities, a fact that is especially beneficial to youth with mobility limitations or who have an increased risk of illness in public spaces. However, since rural areas are less likely to have access to high-speed internet than suburban and urban areas (Vogels, 2021), this can impact the ability of youth who live in areas with limited Internet infrastructure to engage in video game play that requires Internet access. This is a barrier that must be considered, and one that has no simple fix. This means that the support of schools and educators is especially important for youth in rural communities to access both the hardware and software required for game play, and the Internet connections required to connect with other gamers and game communities.

Educational Implications

Modern teaching methods are increasingly including game-based learning activities and the gamification of assessments (Hewett et al., 2020). Gamification means bringing aspects of game play, like earning points, collaboration, competition, and rewards, to non-game activities (Deterding et al., 2011; Seaborn & Fels, 2015). Some common examples of gamification in classroom instruction are the use of applications like Kahoot!, ClassDojo, Nearpod, and Quizlet. In addition to these educational tools, games designed for entertainment and not for the purposes of academic instruction are being increasingly used in educational spaces. Hewett et al. (2020) examined the skills and behaviors of high school gamers playing Minecraft in a classroom setting

to "generate an educational model that illustrates how those classroom gamers attempted to critically think, create, communicate, and collaborate" (P. 358). They found that playing the video game Minecraft could "help students learn to problem-solve, improve their research skills, be resourceful, multitask, and develop their social skills through teamwork" (p. 361).

These are not new ideas to many current classroom teachers. Fishman et. al at the A-Games Project at the University of Michigan (2014) found that of the almost 500 teachers surveyed, more than half of them "use games weekly or more often in their teaching and the vast majority are at least moderately comfortable using games as a teaching tool" (p. 4). This indicates that many teachers are already comfortable using games in instructional spaces and that students are responsive to them. The next step for educators of YwD would be to teach actual game play itself, and not simply use game play to teach.

Recommendations

For educators and family members who did not grow up playing video games, and for those who did as children but have not remained involved as adults, the idea that video games should be encouraged to have a place in schools and homes can seem like an uncomfortable prospect. So much of what we know, or think we know, about video games and the cultures that embrace them have negative stereotypes. However, as this article has illustrated, there are many positives that video gaming can bring into the lives of transition-aged YwD, and those benefits should not be dismissed. As Chess (2018) suggests, we "need to move beyond the rhetoric that assumes that all video games are bad and think more about what video games can give us that other kinds of leisure cannot" (p. 18). This is sound advice, especially given that video games and the gaming communities that embrace them are not going to disappear any time soon. The opposite is likely to be the case as technology and accessibility continues to evolve, expand, and become more diverse. With knowledge of this reality in mind we offer a few recommendations for how educators can support youth who could benefit from what video games have to offer, with educators of transition-aged YwD specifically in mind.

Teach Skills

Educators should devote instructional time to teaching both the skills required to play video games and the skills their students are learning in the games. The skills required to play video games are myriad and might require instruction for many of the youth who would benefit from them. These skills can include the acquisition of specific fine motor skills, knowledge about how to load and play games, knowledge about personal preferences for game selection, how to access and change accessibility settings, and how to interact with others in virtual environments. Like other skills youth need to learn to be successful in and out of school, these skills might need to be explicitly taught in the classroom.

Studies exploring play skills instruction for YwD suggest that instruction should be intentional, systematic, and explicit (Jung & Sainato, 2013; Jung & Sainato, 2015; Lifter et al., 2011). Instruction in play and game skills can also include motivational strategies, a focus on targeted play skills, task analyses of identified play skills, video modelling, and systematic prompting (Jung & Sainato, 2015). Many of the strategies identified as effective in teaching play-specific skills are instructional practices that educators who work with YwD are already

familiar with, as they are considered evidence-based practices for the acquisition of a variety of academic and functional skills.

The use of technology is not novel in educational spaces, or in the daily lives of many youths, so games that utilize a smart phone or tablet for game play might require less training as youth might already be comfortable using them (Isasi et al., 2013). As Scolari & Contreras-Espinosa (2019) note, youth now require a "basic understanding of how to interact with [video] games in order to become critical participants in today's media culture" (47). This could be incorporated into functional and leisure skill curricula and into lessons designed to address content-specific secondary curriculum. Educators can also partner with local businesses, non-profit organizations like the West Virginia-based AbleGamers Charity, and guest speakers from the games industry, which can be especially helpful to educators who are not video game players themselves. In addition, many communities have active 4H clubs and community centers that offer trainings for people of all ages.

Include in Transition Planning

With three-quarters of households in America reporting that at least one member of their household plays video games (ESA, 2019), it is important that families and educators alike take the time to understand the implications of such widespread involvement in a pastime they might not themselves be overly familiar with when helping YwD plan for their transition into adulthood. Scolari & Contreras-Espinosa (2019) describe a 'digital dissonance' that currently exists in educational spaces, defined as "a gap between the savvy ways in which our young people use media outside school in everyday life and the structured, controlled, and often stilted ways they are regularly used within schools (p. 48). They assert the need for educators to better understand the skills youth develop in informal learning settings, like when they play video games, in order to reduce the digital dissonance gap and be able to actually use the skills they acquire through game play inside formal learning institutions (Scolari & Contreras-Espinosa, 2019).

Including instruction of this kind in the curriculum has the potential to increase communication skills and opportunities for social connections, and benefit youth's educational and employment opportunities post-graduation. These considerations have the opportunity to benefit YwD who live and attend school in all settings but can be "especially important in rural communities where educational and employment opportunities are typically more limited" (Raghavendra et al., 2018, p. 121). Although there are many ways that educators might incorporate skills acquired through video game play into their students' transition activities, some suggestions specifically related to leisure skills and community, and vocational planning are described below.

Leisure and Community

When planning for community engagement and leisure skill training in transition planning, video games can be a meaningful tool. Teachers, vocational rehabilitation councilors, and families can utilize video games when planning for transition instruction and resources to support youth in building needed social skills, engaging in age-appropriate leisure activities, and in finding community. Educators and families can help youth take positive advantage of the games and communities that already exist by encouraging the social aspects of game play and providing access to online communities where other players with disabilities gather.

For youth who already engage in video game play but do so in mostly isolated settings, families and educators can encourage the social aspects of game participation. One way to do this is to change the conversations about game time from "stop doing that" to "let's do that together". School libraries and gyms can be wonderful places to host video game parties and competitions that are available to both students with and without disabilities, and to the broader community. This can be especially successful in communities where Internet access is expensive and unreliable. Social activities like this create opportunities for YwD to host others, and for families who do not have the monetary resources to purchase games and gaming systems on their own.

Connection to Careers

For some youth, it might be appropriate to take the skills learned related to game play a step further and include video games in vocational planning. Youth who are female, Black, Hispanic, and those with disabilities are substantially underrepresented in STEM fields (Ahlam, 2022; Bravo & Stephens, 2023; Brown et al., 2016; Leaper & Starr, 2019; Lee, 2022; Robnett, 2016). This is in part because YwD often have fewer opportunities to participate in STEM-related school activities which prevents them from realizing their talents and interests in STEM fields and hinders their pursuit of STEM careers (Ahlam, 2022). To counter this, YwD should have the opportunity to be engaged in all of the STEM-related activities their peers without disabilities are, especially those that are likely to ignite their interests. Youth who have the interest should be encouraged to pursue a career in the games industry or other related STEM fields as a part of their transition plans. As Chess (2018) notes, "the more diverse the playing audience, the more diversity will enter the industry workforce" (Chess, 2018, p. 19). For example, while there is a dearth addresses female YwD who game, we do know that women make up almost half of video game players (Chess, 2018) and are having increased enrollment in game design postsecondary training programs. Young women report being unintimidated by taking a course when most of the other students are male, and even outperform the male students academically in those courses (Hewett et al., 2020). These are fantastic developments for young women who enjoy the competition and community of gaming and can see themselves someday working in this growing industry.

Concluding Thoughts

It is important to note that video games and gaming communities are not the right fit for everyone. Just as when engaging in other forms of media, these hobbies and virtual community spaces will not appeal to everyone. Conversely, some games or communities might appeal to youth, but are not appropriate for them because of game ratings, the skills required, or for those who have difficulty knowing the divides between what is real and what is not. Engagement with video game play is not the right fit for everyone, and every game or gaming community might not be the best fit for the youth in question. But for those who have interest and would benefit, there are numerous benefits for youth who choose to become involved with video games and their related communities. This position paper has addressed some of these benefits as they relate to social skill development, fulfilling the need to play and engage in age-appropriate leisure activities, and the need for social connections with others. Supporting YwD in video game play be especially meaningful for YwD in rural areas who might not have similar access to peers with similar interests as their urban and suburban peers do, due to the relatively small populations of rural communities, the geographic distances that often separate residences, and health concerns about in-personal

contact. We are doing youth who are most impacted by social isolation a disservice to not support them in every way possible.

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