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Video Games as a Way to Facilitate Leadership Skills and Competency Development

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Introduction

Video games are becoming part of people's lives, and it is shown that the younger generation's leisure activity is mainly related to online games (Wyld, 2009). Gaming has grown even more after that statement was concluded. In 2021, there will be 3.2 billion video gamers globally, a rise in popularity over the past decade (Statista, 2022). This is especially pertinent because, as of 2021, there are 201.7 million video game players in the United States (Statista, 2022). With online gaming gaining popularity in recent years, video games have become a topic of focus in research, and it has been proven that video games have positive outcomes such as hand-eye coordination (Rutkowski et al., 2021); additionally, there are emerging in-game practices where players take leadership roles. It is found there is a relationship between in-game actions and real-world leadership status and that those in-game actions might partially support real-life leadership (Lu et al., 2014). The previous finding is that video games provide a virtual space for all players to participate actively and engage in different activities. During the process, they will enhance real-life skills, such as management, social, and creative skills (Hussian & Griffiths, 2014). In this sense, video games are no longer entertaining tools but complex systems that could benefit research activities in other domains, such as leadership (Mysirlaki and Paraskeva, 2012). Research showed that online video games such as MMORPGs could positively develop players' all four Sloan leadership capabilities and allow players to gain, which implies the potential of using video games to develop leadership competencies or skills (Ee & Cho, 2012).

Despite some preliminary results showing the potential of using video games to enhance leadership development or make people acquire leadership skills, there are already systems that

aim for leadership development in both military and civilian areas, such as TLAC-XL (Think Like A Commander Excellence in Leadership), which aims to provide leadership challenge scenario creation related to military training (Gordon et al., 2004, as cited in Lopes et al., 2013), and Luna I Moon Colony (Driver & Hunsaker, 1972). When reviewing the background in e-leadership, Freitas and Routledge (2013) found there should be more research in the field of e-leadership and use of game environments to advance leadership skills; they ascribe the reason at that time as "educational game environments... are still in their infancy" (p. 954). It may be necessary to revisit this question, especially now that the COVID-19 pandemic has forced everyone online and the demand for leadership within virtual working environments is becoming an issue for organizations of all sizes. This study aims to conduct a scoping study by reviewing recent literature on video games and leadership skill or leadership competency development to see if gaming after a year of development can better support leadership competency development. Through the scoping review, this literature analysis aims to find out what the literature says about how video games could help develop leadership skills or competencies.

Literature Review

Definition of Video Games and Simulation

Stenros (2017) synthesizes a corpus of 63 game definitions and identifies ten reoccurring themes that may define video games. The video game contains rules, and those rules establish the aim and objective of the game; the player(s) manifest their attempt to fulfill those objectives and end conditions; the game could be viewed in this manner as a systemic artifact, but its rules and purpose are sociomateriality framed. Players are in structural positions within the context of the game's system (Bjork & Juul, 2012). The only outcome of a video game is a win or a loss, and competition or conflict is a defining characteristic of video games (Stenros, 2017); however,

this result is cited in the literature from 1938 to 2009, where now digital games is viewed as a powerful learning environment, capable of promoting learning processes and outcomes that are difficult to attain in conventional educational contexts (Gyaurov et al., 2022). Stenros (2017) explains in "Construction of the Category" (pp.511-512) that multiple gaming genres may have overlapping definitions, such as simulation. The final topic outlined by Stenros (2017) is "coherence", which indicates that scholars tend to define video games based on their usually present characteristics; yet, all games now exhibit the same characteristic, posing difficulties when defining them. Simulation is a challenge akin to the vast majority of first-person video games (Rupp et al., 2015). Simulations give participants an environment where they may test their communication, decision-making, and leadership skills (Bleich et al., 2018) and evaluate the results of their investments (Richard et al., 2014). It has been proved that computer-based simulation improves leadership skills and can be utilized as a leadership evaluation tool (Hunsaker, 2007). Recent leadership development programs incorporate experiential learning approaches to encourage learning by doing, such as the psychodynamic three-triangle framework (Kets de Vries & Korotov, 2007) and video games (Lopez et al., 2013). Still, further research could be beneficial to understanding the leadership developed in the digital space of "e-leadership," considering the small presence of literature at this moment (de Freitas & Routledge, 2013).

Leadership Competencies

Leadership is indispensable for the advancement of humanity. Society benefits greatly from the presence of leaders who will lead it to success. Numerous researchers have supported that leadership skills can be taught and enhanced with certain programs beginning at puberty (Smith, Smith, and Barnette, 1991 as cited in Ogurlu & Emir, 2014). Global leadership

competencies encompass personality traits, knowledge, and skills, as well as behaviors (Cumberland et al., 2016). Day et al. (2014) categorized leadership competencies into two primary categories: (1) intrapersonal competencies, such as individual-based knowledge associated with formal leadership roles, and (2) interpersonal competencies, such as building networked relationships among individuals. Each category consists of unique individual skills (self-awareness, self-regulation, and self-motivation) and social skills (social awareness and social skills) (Day, 2000). One of the most frequently used taxonomies and classifications of leadership and management skills is Gallup's "Strengths Finder," which employs four major dimensions: strategic, executing, influencing, and relationship-related leadership skills (Buzady et al., 2022). The four groups of competencies identified by Quinn et al. (2015) are organizing information flows, measuring performance, communicating effectively, managing constructive conflict, establishing goals and objectives, managing execution, using power ethically and effectively, and fostering innovation (as cited in Sturm et al., 2017). Other research has grouped competencies in terms of emotional competencies, such as emotional, social intelligence, and cognitive intelligence (Boyatzis, 2011), or used confirmatory factor analysis to validate previous models (Seijts et al., 2015). There are numerous available frameworks for analyzing leader competencies.

Video Games/ Simulation and Learning

Video games and simulation have supported a variety of discipline learning (Annetta, 2009; Holbert & Wilensky, 2019), the transformation of traditional classroom to a simulation could support collaborative and competitive interactions (Kumar et al., 2021), increasing collaboration and performance with the right strategy (Nebel et al., 2017). Research has been conducted on the use of simulations in language learning, and it has been demonstrated that

simulations can reduce learner anxiety (Yang et al., 2022). Games can enhance knowledge interrelationships, increase the shared learning other abilities and application to new situations (Robertson & Howells, 2008); Learners explore and develop their abilities and skills, gain experience, acquire knowledge, and generate new knowledge (Divjak & Tomi, 2011). Video games and simulation can also increase learner motivation (Grund, 2015; Divjak and Tomi, 2011; Jameel, 2011; Annetta, 2009; Robertson & Howells, 2008; Dondlinger, 2007; Yee, 2006; Freiermuth, 2002) with highly contextualized information that associate with real-life (Purushotma, 2005). When trying to explore how video games could help students with their course knowledge, Boctor (2013) asked nursing students to play one game and gathered their views. Most students consider that learning with games are beneficial, increase confidence, reinforce the material learned, and benefit from reviewing and learning new information. Use of simulation also results in improved academic performance (Barrera et al., 2021; Ouahi et al., 2021). When utilizing video games in a leadership classroom, Bezio (2022) discussed the difficulty of being a leader in a toxic environment, illustrate new ideas, and understand leadership concepts through the safe gaming environment. Although there are some concerns when using simulation in a classroom setting, it is nevertheless mentioned that there is potential to scaffold learning in the virtual environment brought by the simulation (Ranalli, 2008).

Video Games and Leadership Skills Transfer

Multiple studies have shown that video games can have positive effects and improve skills such as faster stimulus-response mappings (Mack et al., 2016) and better probabilistic learning (Schenk et al., 2017). It is determined that the benefit of video games in developing leadership skills or competencies exceeds their enjoyment value. Players form online communities or in-game alliances within the online games voluntarily. Online games, such as

Massive Multiplayer Online Role-Playing Games (MMORPGs), can give players a variety of incentives to continue playing and engage with other players, from the results, it is show that 39.4% of male players and 53.3% of female players feel they built a deeper connect with their online friends than those in real life (Yee, 2006). Additionally, Personal advancement in MMORPGs generally requires the cooperation of other players to accomplish a difficult job, through the coordination and cooperation with other players, leadership skills are developed, and competencies are increased. In emergent groups within an MMORPG environment, leaders deal with both administrative and higher-level strategy issues, the majority of which arise spontaneously and must be dealt with immediately; thus, MMORPGs provide numerous opportunities for both short-term and long-term leadership experiences (Yee, 2006). Ee and Cho (2012) notice something similar that online video game genres such as MMORPGs have the potential to foster leadership because they reward team actions, give players access to a variety of information, and enable players to communicate with one another. Furthermore, while competing in MMORPGs, actions such as organizing and collaborating are regarded as important leadership skills that can be transferred to the real world (Mysirlaki and Paraskeva, 2012). The previous findings corroborate Yee's (2006) findings when participants were asked to self-evaluate their leadership skills, such as conflict resolution, group mobilization, persuasion, and their level of comfort in leading others, which had improved in real-world situations as a result of their MMORPG experiences. Although the results are not unanimous, those who saw an improvement in leadership-related areas were much younger than those who did not; nevertheless, they illustrate that real-world abilities may be acquired or developed in these settings.

Transferable Online and Offline Skills

Previous research has revealed that acquired skills learned in online games are transferable to real-life context (Lee et al, 2017; Lu et al, 2014). Moreover, scholars have documented that the appropriate application of games in educational curriculum or practices provides substantial benefits to learners of all age groups (Hill, 2015). Although most of the games were developed based on entertainment purposes, educators discovered effective ways to utilize the content in games to deliver academic lessons. For instance, the game Minecraft was applied in educational curriculum to introduce topics of spatial geometry (Forster, 2012 as cited in Nebel, 2015), sustainable planning (West & Bleiberg, 2013 as cited in Nebel, 2015), and language and literacy (Hanghoj et al., 2014 as cited in Nebel, 2015). However, there is a significant gap in scholars exploring transferable skills or traits in leadership development compared to studies that focus on the educational field (Lee et al, 2017).

Existing research on skills transfer has primarily focused on MMOGs (Massively Multiplayer Online Games) (Mysirlaki & Paraskeva, 2020; Schrader & McCreery, 2008), and MMORPGs (Massively Multiplayer Online Role-Playing Games) (Hopp et al., 2015; Jang & Ryu, 2011). Studies have revealed that game-based learning enhances teamwork participation, teamwork competence, teamwork behavior, and team building among college students (Martin-Hernandez et al., 2021). The nature of MMORPGs invites players to develop large social communities and, by using leadership and collaborative skills, such as decision-making, motivation of others, negotiation, and conflict resolution to organize and maintain social structures (Mysirlaki & Draskeva, 2012). Additionally, players are frequently presented with the opportunity to develop their leadership skills through interaction with other players (Jang & Ryu, 2011). One of the other directions that scholars have been focused on is the way Minecraft

affects individuals' skill development across age groups from multiple perspectives. Minecraft is a sandbox game which engages multiple players to collaboratively assemble simple blocks as building materials to design features (Nebel et al, 2015). Although Minecraft was originally intended for entertainment purposes, scholars have recognized the ways in which Minecraft can contribute to encouraging "good principles of learning" (Gee, 2003 as cited in Hill, 2015), particularly by strengthening social interactions in collaborative tasks in games (Hill, 2015). Patterns of leadership development were also investigated in the context of collaborative missions in Minecraft. Participants all exhibited leadership traits based on their assigned roles, such as management, communication, and collaboration (Hewett et al., 2020). The existing studies have primarily intended to identify the impact of Minecraft on school-aged students in elementary or secondary schools and the educational implications. Future research will have to consider adult populations to broaden the scope of Minecraft's potential impact on possible leadership development.

Games could also be treated as an evaluation tool. Scholars discovering sets of designed models to support the assessment and evaluation process of the existing leadership games. The e-leadership and Soft Skills Educational Design Model (ELESS) aimed at testing the effectiveness of the Leadership Game (LSD) in enhancing trainees' awareness in consciously utilizing concepts and knowledge introduced in training into offline events. Results validated the application of ELESS model for comprehensive assessment of LSD and directed future stakeholders to utilize assessment results to guide the innovation of future leadership games (Freitas & Routledge, 2016). However, the examination of the effective assessment and evaluation tools needs to be extended to diverse contexts.

Findings

While inherent limitation of the scoping review persists. Through this scoping review, the versatility of video game is resurfaced and identified, facilitating such as hand-eye coordination (Rutkowski et al., 2021), language acquisition (Yang et al., 2022), knowledge generate (Divjak & Tomi, 2011), skills transfer (Robertson & Howells, 2008), improve academic performance (Barrera et al., 2021; Ouahi et al., 2021), faster stimulus-response mappings (Mack et al., 2016), probabilistic learning (Schenk et al., 2017), and most predominantly, increasing motivation (Grund, 2015; Divjak and Tomi, 2011; Jameel, 2011; Annetta, 2009; Robertson & Howells, 2008; Dondlinger, 2007; Yee, 2006; Freiermuth, 2002). The game itself could be translated into an evaluation tool (Freitas & Routledge, 2016).

The purpose of this study is to understand the relationship between leadership competencies or development and video games or simulations. Multiple sources have suggested and identified that video games could support or facilitate leadership development (Lu et al., 2014; Ee & Cho, 2012; Mysirlaki & Paraskeva, 2012), because video games and simulation could provide a virtual environment for all players to participate in different activities, and during the process, they could enhance skills such as management, social, and creative skills (Hussian & Griffiths, 2014). Most of the literature researched about video games and leadership development is primarily focused on MMOGs (Massively Multiplayer Online Games) (Mysirlaki & Paraskeva, 2020; Schrader & McCreery, 2008) and MMORPGs (Massively Multiplayer Online Role-Playing Games) (Hopp et al., 2015; Jang & Ryu, 2011; Yee, 2006). This makes sense because any individual's advancement or completion of any challenge task in those massive online games involves other human players, and the process of conceiving the task, through coordination and collaboration with other players, fixing issues using administrative and

strategic skills that frequently require swift and decisive action provides a great deal of long and short leadership experiences (Yee, 2006). Additionally, games encourage players to team up and solve issues by providing rewards, providing relative information, and enabling functions for players to better collaborate, such as team chat (Ee & Cho, 2012). The skills such as organizing, collaborating, conflict resolution, and persuasion developed inside those massive online games can be transferred to real-life situations (Mysirlaki and Paraskeva, 2012; Yee, 2006). It should be noted, however, that skill transfer may affect younger players more than older players (Yee, 2006). From the above literature, it is suggested that video game and simulation could facilitate leadership competencies development, however, it is also noticed that it is rare for leadership topics to intercept with video games and simulation than education topics, the influence of video games to leadership development still requires more research.

Conclusions

Leadership can be seen as a support mechanism that enables a response to evolving circumstances within business and technology. However, research has demonstrated a lack of qualified leadership to satisfy ongoing organizational needs. This study evaluated the ability of gaming technology to construct competencies that support real-world scenarios (Ee & Cho, 2012; Mysirlaki & Paraskeva, 2012). Research indicates that experiential learning, such as gaming, can support learning (Lopez et al., 2013). With increased popularity and adoption (Statista, 2022), studies indicate that gaming can be used to promote educational outcomes (Gyaurov et al., 2022). In response to the growing need to enhance leadership development (Lee et al., 2017), scholars have acknowledged the benefits gaming could have to leadership curriculum, learning, and development.

This study revealed that individual leadership development progress can be noted in examples such as Minecraft, where characteristics of collaboration, communication, and management were strengthened (Hewett et al., 2020; Hill, 2015). These studies exemplify the positive association between gaming and leadership development.

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