TECHNOLOGY-DRIVEN EDUCATION: INSIGHTS FROM COLLEGIATE ESPORTS

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ABSTRACT

This case study investigated how collegiate eSports players navigate the physical, mental, social, and academic challenges associated with competitive gaming, with a focus on its implications for adult education. Through in-depth interviews, the study explored players' diverse gaming routines, perceptions of excessive gaming, and strategies for balancing competing demands. While eSports participation fosters cognitive skills, social bonding, and career opportunities, it also presents risks such as physical inactivity, poor dietary habits, stress, and exposure to toxic gaming behaviors. A key finding is that the eleven students independently developed strategies to address these challenges, emphasizing the importance of integrating comprehensive support systems—such as physical activity initiatives, mental health resources, and academic support—within collegiate eSports programs. These insights are particularly relevant for adult education, as they highlight the need for targeted interventions that promote a balanced lifestyle, enhance well-being, and leverage eSports as a dynamic platform for skill development and lifelong learning.

KEYWORDS

Gaming, Social Health, Mental Health, Physical Health, Careers

1. INTRODUCTION

Collegiate eSports have become an important focal point of the technology-education interface. eSports, or competitive electronic gaming, have evolved from grassroots tournaments to a global industry with professional leagues and massive audiences rivalling traditional sports. Initially centered around localized arcade and console competitions, eSports has grown exponentially with advancements in technology, particularly online multiplayer gaming [1,2]. Today, the global eSports market, valued at $1.88 billion in 2022, is projected to reach $3 billion by 2025 [3,4].

In the U.S., collegiate eSports gained traction around 2009, with over 500 programs established by 2019, supported by organizations like the National Association of Collegiate Esports (NACE), which has distributed over $16 million in scholarships [5]. Universities such as UC Irvine and Butler University now offer specialized courses and facilities to prepare students for careers in game design, tournament management, and related fields [6].

As eSports integration into higher education grows, concerns about player well-being have emerged [7]. This study examines collegiate eSports players' physical, mental, social, and academic experiences through in-depth interviews, uncovering strategies to support their holistic needs in this uniquely evolving interface of technology and education.

2. LITERATURE REVIEW

2.1. Academic Benefits of Esports

Higher education institutions integrating eSports into their curricula experience additional advantages, such as improved recruitment and retention rates [8,9]. Such institutions often find that students can apply the skills from eSports across various disciplines, leading to improved academic outcomes and better preparation for future careers in the gaming industry and beyond [10]. This recognition is also reflected in burgeoning academic programs and scholarships dedicated to eSports thus underscoring its value for student development [11]. Further, the growth of collegiate eSports has opened new pathways for students to develop skills transferable to academic and professional environments [12]. For example, participation in eSports can enhance cognitive skills such as strategic thinking [13], problem-solving, leadership [14], and teamwork [15], which are transferable to academic and professional contexts. Also, strategic game playing has been credited for enhancing multitasking and spatial cognition [16]. Further, student retention has been highlighted as a benefit for higher education institutions [17] and eSports has served to enhance students' social-emotional learning [18].

2.2. Social And Emotional Benefits To Game Play

In addition to these academic benefits, eSports also increases strong social bonds among participants, providing players with a sense of belonging [19]. Participation in eSports teams can lead to development of strong social networks and friendships crucial for emotional and mental well-being [19]. Moreover, eSports play allows students to form connections with peers across the globe, thus reducing cultural barriers while fostering an inclusive environment. These global interactions can enhance students' cultural competence and expose them to diverse perspectives, further enriching their educational experience [20,21]. Moreover, eSports offers unique inclusivity opportunities in college settings and promotes a competitive environment where students from diverse backgrounds and abilities can compete together on an equal basis [22]. And others [23] have highlighted how eSports can support a more inclusive atmosphere by enabling students with physical disabilities to participate in competitive sports alongside their able-bodied peers that not only broadens participation but contributes to a sense of belonging and community among students, essential for overall well-being.

2.3. Risks To Esports Gaming

Despite the advantages of eSports, there are significant risks associated with physical and mental health of players [15]. Unlike traditional sports, eSports athletes encounter unique challenges such as prolonged screen time, cognitive strain, social pressures, and the sedentary nature of gaming [24]. Extended gaming sessions are often linked to reduced physical activity, which may result in issues like poor posture, back pain, and a heightened risk of lifestyle-related diseases [25,26]. Other concerns for players are associated with poor dietary habits, including the consumption of junk food and energy drinks [27]. Also, health concerns such as sleep disturbances, are prevalent among frequent gamers [28].

Cognitive demands of competitive gaming often result in mental fatigue and heightened stress [29,30], particularly within the high-pressure context of collegiate eSports. Balancing gaming and academic responsibilities are significant challenges, with some players experiencing difficulties in time management, affecting their academic performance [31]. Stress and burnout are prevalent in the eSports arena, with burnout typically manifesting as mental exhaustion, diminished gaming

performance, and a declining interest in the activity [32]. Furthermore, players can experience harmful behaviors like toxicity and harassment [33].

Moreover, dual pressures of academic and eSports commitments can be difficult for students to manage. Implementing structured eSports programs including academic support services (i.e., tutoring, time management workshops) assist students in maintaining a balance between gaming and academic pursuits [34]. Without adequate support, students may find their academic performance compromised due to demands of competitive gaming.

Importantly, it has been observed that a subset of eSports players exhibited behaviors akin to those seen in problematic gamblers, including daily excessive gaming, frequent psychological distress, and maintaining a hectic lifestyle [35]. The recognition of gaming disorder (GD) as a mental health condition by the World Health Organization [36] further highlights the potential risks associated with excessive gaming. With approximately 3.24 billion gamers worldwide as of 2023 [37], a significant proportion may be at risk for developing GD [38] requiring the monitoring and addressing of mental health challenges within the eSports community.

2.4. Theoretical Framework

Self-Determination Theory (SDT) [39] provides a framework for understanding the motivations for driving participation in gaming, especially within collegiate eSports [40]. SDT posits that human motivation is largely influenced by fulfillment of three core psychological needs: autonomy, competence, and relatedness [41]. These needs, when met, foster intrinsic motivation and enhance psychological well-being [42]. In gaming, autonomy is experienced when players have control over their in-game decisions and strategies. Competence is achieved as players master game mechanics and overcome challenges, while relatedness is fulfilled through social interactions within the gaming community. Research applying SDT to gaming contexts has demonstrated that games meeting these psychological needs lead to greater player engagement and enjoyment, when aligning with fundamental human drives for self-determination. This is particularly relevant in eSports, where the competitive nature of games requires players to continuously develop their skills (competence), make strategic decisions (autonomy), and collaborate with teammates (relatedness). Furthermore, SDT offers insights into the challenges that eSports players may encounter, particularly regarding their physical and mental well-being [40]. Although fulfilling autonomy, competence, and relatedness may lead to positive experiences, unmet needs can result in negative outcomes. For example, the physical demands of extended gaming sessions that lead to health issues (i.e., poor posture, back pain). Mentally, pressures of competition and social dynamics in eSports can cause stress and frustration, especially when players feel they are underperforming or facing toxic behavior. Viewing challenges through the lens of SDT helps educators, game developers, and eSports program coordinators create more supportive environments that balance competitive success with the overall well-being of players.

To effectively support the physical, mental, and academic well-being of collegiate eSports players, it is essential to conduct research thoroughly examining these specific areas [40]. However, research on eSports with collegiate gamers is still somewhat limited [43] and without this understanding, developing informed recommendations for enhancing the benefits of eSports participation and addressing potential challenges faced by players will be difficult. Therefore, the purpose of this study was to explore the perceived advantages and potential challenges of eSports participation, particularly focusing on its effects on the overall health and well-being of collegiate players. The study specifically addressed the following four research questions:

RQ1: What are the typical gaming routines and perceptions of excessive gaming among collegiate eSports players?
RQ2: How do collegiate eSports players balance game specialization and playing multiple games?
RQ3: What are the academic performance outcomes and career aspirations of collegiate eSports players?
RQ4: How do collegiate eSports players perceive the impact of gaming on their physical, mental, and social health?

3. METHODOLOGY

Data were gathered as part of a broader study focused on exploring player experiences in eSports. This research was conducted as a qualitative case study, focusing on a specific subset of collegiate eSports players at one public four-year university in Texas, United States. The case study approach was chosen to allow for an in-depth exploration of the unique experiences and perceptions of these gamers within their specific context.

A qualitative inquiry was carried out using semi-structured interviews with participants selected from the researchers' campus eSports program. For recruitment, the campus eSports program director provided an initial list of player emails to the research team. An invitation email was then sent to these players, describing the study's purpose, the interview questions, and seeking their consent to participate.

Eleven players (3 females, 8 males) consented to participate in the study, forming the case group for this research. These gamers were asked a series of twelve questions related to their gaming habits, including the games they played, the time spent gaming, and their future goals and aspirations. Additionally, the interviews explored their physical, mental, and social health, covering topics such as relationships, physical activity, sleep, diet, nutrition, and academic performance. Participants were also encouraged to share any other relevant information about their gaming experiences.

One researcher, who had no prior relationship with the participants, conducted all interviews to ensure objectivity. The interviews, each lasting approximately 30 minutes, were recorded and conducted either face-to-face or via the Zoom web conferencing platform (Zoom.us). The research was approved by the university's Institutional Review Board prior to collecting data.

3.1. Data Analysis

The student interview responses were analyzed through a systematic process. Audio recordings of the interviews were de-identified and transcribed verbatim to ensure accuracy and for maintaining participant confidentiality. Once transcribed, the data were independently examined by the research team, with each member identifying key themes and patterns. The team then compared and discussed their findings to enhance the credibility and trustworthiness of the analysis [44]. Given the focused subset of gamers interviewed, the participants' exact spoken words were used to deeply explore and support the study's conclusions.

4. RESULTS

This results section highlights key findings through the lens of SDT, offering a comprehensive understanding of collegiate eSports players' motivations and experiences. Central to these findings is the dynamic interplay of autonomy, competence, and relatedness, which collectively

shape gaming routines, academic achievements, and health outcomes. Participants reported diverse gaming habits, ranging from specialization in a single game to engaging with multiple games for socialization and strategic variety. Academic and career aspirations reflected a duality, with some students leveraging time management skills gained through gaming, while others struggled to balance extended gameplay with academic responsibilities. Moreover, the study underscores the dual impact of gaming on physical, mental, and social well-being—providing benefits such as stress relief and community building, alongside challenges like sedentary behavior and exposure to toxic interactions. Table 1 synthesizes these insights, linking SDT principles to actionable strategies for fostering health-conscious, inclusive, and supportive eSports environments in higher education. Together, these findings highlight the potential of eSports as a transformative educational tool for promoting balanced and holistic student development.

Table 1. Integrating self-determination theory into collegiate esports: insights, implications, and participant perspectives.

Research Question	Findings	Self-Determination Theory Component	Implications for Collegiate eSports Programs	Representative Participant Quotes
RQ1: What are the typical gaming routines and perceptions of excessive gaming among collegiate eSports players?	Participants reported daily gaming routines ranging from 1–12 hours. Flexible gaming schedules often adjusted based on academic or personal priorities. Excessive gaming was defined as neglecting responsibilities or playing marathon sessions (e.g., 12+ hours).	Autonomy Competence	Encourage autonomy by promoting time-management workshops and self-regulation strategies for balancing gaming with academics and responsibilities. Support competence by helping students integrate gaming mastery into goal-oriented academic and life planning.	"I dedicate every day to playing. Too much = can't take care of yourself, your responsibilities." "I normally do play every day; if I have like a test or something…I'll probably leave the library, and then I'll play for like 2 hours."
RQ2: How do collegiate eSports players balance game specialization and playing multiple games?	Some participants specialized in one game to achieve mastery and focus on competition. Others played multiple games to diversify their experiences, prevent burnout, or socialize. Game choices were influenced by strategy, social preferences, and personal enjoyment.	Competence Relatedness	Foster competence by encouraging mastery in specialized games while promoting varied gameplay to maintain mental engagement and resilience. Strengthen relatedness by organizing team-based gaming sessions and collaborative activities.	"I specialize [in] League of Legends." "I do play several games, but Rocket League is my fave…when playing with other friends, it is sometimes their preference."

Research Question	Findings	Self-Determination Theory Component	Implications for Collegiate eSports Programs	Representative Participant Quotes
RQ3: What are the academic performance outcomes and career aspirations of collegiate eSports players?	Positive academic outcomes included improved time management and prioritization of studies. Challenges included time loss from extended gaming sessions. Career aspirations varied, including roles in coaching, game design, streaming, and professional play.	Autonomy Competence	Develop structured academic support systems, such as tutoring and flexible schedules, to accommodate gaming commitments. Integrate career counseling focused on eSports-related fields, fostering intrinsic motivation through skill alignment.	"Esports doesn't really affect me academically. The matches take time out of my schedule that I would probably use for an extra shift or other hobbies otherwise." "For me, school comes first, the eSports are always on the back burner."
RQ4: How do collegiate eSports players perceive the impact of gaming on their physical, mental, and social health?	Physical challenges included sedentary habits and poor nutrition. Mental health benefits included stress relief, but risks involved toxicity, over-engagement, and frustration. Social health was enriched by building friendships but strained by isolation and online harassment.	Autonomy Relatedness	Promote autonomy in health practices through wellness programs that include ergonomic education, balanced routines, and mental health resources. Enhance relatedness by fostering inclusive gaming communities and implementing anti-toxicity measures.	"Physical… sitting a lot, back pain, indoors more." "Esports destresses me… it improves my mental health." "Social—can keep track of long-distance friends with games."

Next, each research question is further explicated to provide a detailed exploration of the findings, offering insights into the nuanced experiences of collegiate eSports players. RQ1 examines the typical gaming routines and participants' perceptions of excessive gaming, highlighting the interplay between autonomy and competence in managing gaming schedules and responsibilities. RQ2 focuses on the balance between game specialization and playing multiple games, emphasizing the role of competence and relatedness in shaping participants' strategies, social interactions, and engagement. RQ3 examines into the academic outcomes and career aspirations of eSports players, exploring how gaming influences time management, academic performance, and professional ambitions. Finally, RQ4 investigates the physical, mental, and social health impacts of gaming, addressing both the benefits of stress relief and social connectivity, as well as the challenges posed by sedentary habits, toxicity, and online harassment. These findings are contextualized through the lens of SDT, offering a cohesive framework to understand how collegiate eSports participation intersects with broader dimensions of technology-driven education.

4.1. RQ1: What are the Typical Gaming Routines and Perceptions of Excessive Gaming Among Collegiate Esports Players?

4.1.1. Gaming Routines

Participants in the study revealed varied gaming routines, with many engaging in gameplay daily, although the duration of playtime differed significantly among individuals. For example, several participants reported playing every day, with one stating, "Usually every day" and dedicating "about 4 hours minimum" to gaming. Another participant shared they engage in daily gaming for "about 6 hours" noting they play "as long as 12 hours max." Similarly, another student remarked,

> I normally do play every day; if I have like a test or something…I'll probably leave the library, and then I'll play for like 2 hours and then go to bed. But, if I don't have a test…like this summer, I'm free for 3 weeks basically so I'll play as much as I can.

Other participants described more flexible gaming schedules. For instance, one student stated that their gaming time "depends on [the] week—average 2 hours a day," while another mentioned, "Pretty much every weekday…for 2-3 hours." One participant noted that they game "almost every day—minimum of 2-3 hours," depending on their homework and classes. A few participants indicated that their gaming habits vary more significantly. One participant mentioned gaming "almost every day, except weekends; 4-5 hours on average," while another shared, "Yes, one hour if busy, up to 12 hours in one session." This participant further explained that more hours are often dedicated to tournaments, noting that "Smash Brothers lasts more than 12 hours...I average about 4 hours per day."

Some participants reflected on changes in their gaming habits over time. One student mentioned, "I used to actually game like the entire day, nowadays…I average about 5 hours." Another participant shared that the time spent gaming is contingent on how busy they are, stating, "The amount of time that I game really depends on how busy I am (schedule) and what I'm feeling, so I'd say the average time per day…maybe around 3 to 4 hours; it could go longer in the summer." One participant indicated a more limited gaming schedule, playing "up to 3 hours, about once a week."

4.1.2. Perceptions of Excessive Gaming

Participants in the study provided varied responses when asked how often they felt they played too much in an average month and what they considered was "too much" gaming. Some participants expressed that there is no such thing as playing too much, with one stating, "I can never play too much!" However, this participant acknowledged that excessive gaming could be defined as "falling behind in other responsibilities/jobs in your life." Other participants offered specific time frames they considered excessive. One participant noted that they played too much "3 times a month," defining "too much" as "12 hours" in one session. Another shared that previously, they played "3 to 4 times a week," with "too much" being more than "4-5 hours," particularly when it started "affecting studies and personal life." Several participants mentioned that weekends were more likely times for excessive gaming. One student reported playing "8-12 hours per weekend" when they had nothing else to do, such as homework or cleaning, even recalling an instance when they "played over 8 days straight." Another participant mentioned that they "have played straight for 7 days," noting that "playing 12 hours straight is too much."

Some students discussed how their gaming habits fluctuated based on their schedules. One participant reflected on their gaming during the past summer, stating that due to a heavy study

load, they didn't play much outside of practices and competitive games. However, when they had time, they would sometimes engage in marathon gaming sessions, such as “playing from 1pm until 4am,” which they considered excessive. Another participant mentioned playing “probably maybe once [every] two weeks,” defining “too much” as “8 hours” in one session.

Others highlighted the need to balance gaming with other responsibilities. One participant stated, “I dedicate every day to playing. Too much = can’t take care of yourself, your responsibilities. When it [gaming] takes over, it is too much.” Another participant echoed this sentiment, acknowledging that “too much” gaming would be “5-6 days a month for 8 hours,” noting that they played this much because they had the time.

4.2. RQ2: How do Collegiate Esports Players Balance Game Specialization and Playing Multiple Games?

When students were asked whether they play multiple games or specialize in only one, they provided a range of responses that highlight different gaming preferences and strategies. Two primary themes resonated: *game specialization* and *multiple game play*, with secondary themes of *socialization*, *strategy*, and *fun emerging* in the context of these preferences.

4.2.1. Game Specialization

Several participants reported specializing in one game, focusing their efforts on honing skills and achieving mastery. For example, one participant stated, “I specialize [in] League of Legends,” while another said, “One game—Rocket League.” A participant who specializes in “Counter-Strike: Global Offensive” noted that they play other games “for relaxing,” indicating a distinct separation between their primary game and others they play casually. Similarly, another participant who is specialized in “Super Smash Brothers Ultimate” highlighted the social aspect, stating that they “like to socialize through gaming” but maintain a focus on this particular game.

4.2.2. Multiple Games

Other participants preferred playing multiple games, often focusing more intensely on one or two primary games. One participant explained, “Multiple games… Valorant is [my] primary game,” while another said, “Usually Valorant—play it every day.” Some participants mentioned a mix of games, such as “Valorant and also Call of Duty, LOL, and Apex Legends,” reflecting a diverse gaming routine. One participant discussed their *strategy* for balancing multiple games, remarking, “It depends. I usually am focused on one, but when I reach burnout, [I] move to different games and fall back to at least one game.”

4.2.3. Relaxation and Socialization

The subthemes of fun and socialization also played a role in participants' gaming habits. One participant shared, “I do play several games, but Rocket League is my fave…when playing with other friends, it is sometimes their preference, and it’s another game other than Rocket League,” showing how social interactions influence their game choices. Another participant, who specializes in “Overwatch” and “Val[orant]” also enjoys playing other popular games like “Fortnite” and “Rocket League” with friends. Additionally, a participant who enjoys various genres such as Japanese Role-Playing Games (JRPG) explained, “I play multiple games. There are different genres, JRPG is one of them, or regular RPG…or adventure games which is what I play for fun. For competitive…I specialize in Smash Ultimate.”

4.3. RQ3: What are the Academic Performance Outcomes and Career Aspirations of Collegiate Esports Players?

4.3.1. Academic Performance

The impact of competitive esports on academic performance varied widely among participants, with responses indicating positive, neutral, and negative experiences. Additionally, students shared various strategies they employed to manage their academic responsibilities alongside their gaming commitments.

Several students reported that their involvement in esports had little to no negative impact on their academics. For instance, one participant shared, "Esports doesn't really affect me academically. The matches take time out of my schedule that I would probably use for an extra shift or other hobbies otherwise," indicating that they were able to balance their gaming with other responsibilities. Interestingly, another participant shared that their esports involvement had a positive impact on their academic performance, as it motivated them to manage their time effectively and prioritize their studies:

> I am doing great academically, in my opinion. I had a 3.6 GPA this last semester, 3.5 overall at the university. I'm killing it! It [esports] might get some people to pass their classes, because you can't play if you're not passing. For me, school comes first, the esports are always on the back burner.

However, not all participants found it easy to balance gaming with their academic responsibilities. One student noted the challenges they faced, particularly in college where there is more freedom, leading to a "5-15% loss of study time" because "when gaming is live, [you] can't calculate the game length ahead of time." Another participant mentioned that playing Counter-Strike, a game that requires extensive practice, negatively impacted their academics, saying, "Has affected academics negatively—had to give up academics—Counter-Strike playing requires so many hours of practice! It's harder when you're younger."

Some students developed strategies to manage both their academic and gaming commitments. One participant mentioned, "When I have a window [of time], I usually play first, then do my homework; depends on how much time I have," suggesting a flexible approach to balancing the two. Another student focused on maintaining a strict separation between gaming and academics, noting, "Does not affect my academics—I keep them separate. Otherwise, you could forget you have homework. If brain is full of games, not much learning and remembering academics and class information." Another participant echoed this sentiment, stating, "I don't think it affects my academic scores at all because I like to manage my time well. I know when I'm supposed to game and when I'm supposed to study, so overall it doesn't have a big impact on my academic scores." Similarly, another student emphasized that prioritizing academics over gaming allowed them to maintain their performance, saying, "As of now, it does not affect [academic performance], because I prioritize A's over games. But it can affect mental health. Reminder that at the end of the day, it is just a game."

4.3.2. Career Roles in Esports and Gaming

Participants expressed a variety of goals related to their future in gaming, reflecting both personal and professional aspirations. Many students expressed a strong interest in pursuing careers within the gaming community, often identifying specific roles that aligned with their desires and skills.
For some, the goal was to stay connected to collegiate esports. One student stated their ambition to focus on "coaching and community development" within this arena. Similarly, another

participant aimed to work as a "player, caster, coach, internationally, preferably," highlighting their desire to engage with the global esports community. Another participant shared their efforts to build a resume within the esports community, emphasizing their involvement in starting and leading esports programs at different institutions.

Several students considered streaming and content creation as viable career paths. One participant shared that they had already started streaming and even dabbled in game design, expressing a desire to pursue this as a side job. Another student echoed this sentiment, stating, "If I pushed, [I'd be a] gamer (enjoying a good game), and streamer (streamers play games for audience)."

Others envisioned their futures in more technical or creative roles within the gaming industry. One student aspired to become a "game designer—who would design the games," while another mentioned that they would consider a career in gaming as a secondary option to their main interest in IT or Cybersecurity. This participant noted that if the opportunity arose, they might choose gaming as a primary career. Voice acting also emerged as a career interest, with one participant stating, "One of my dream jobs is to be a voice actor…it provides a voice role for the gaming…and I can participate in the gaming community and gaming environment." This participant noted that voice acting offered opportunities beyond gaming, including roles in animation and entertainment.

For some, the allure of being a professional player was indicated. One student candidly expressed their dream: "Player, I mean it would just be the dream to just play your favorite game and get money for it." Similarly, another noted financial considerations also played a role in career decision-making as they expressed: "If I could make tons of money, I would."

Other participants approached gaming as a form of relaxation, fun, and as a means for social interaction. For example, one student highlighted the significance of using gaming to decompress, stating their goal was to "have fun—not competitive, [to] decompress, relax—not let it affect other parts of my life." Another participant shared that their goal was to "relax and have fun with friends; talk about our lives—socializing with friends. So, it's not just about the games, it's about friends—experiences you have with others." One student reflected on their goal of having fun and connecting with others through gaming: "It's just to have fun, because gaming itself is fun but I think it also helps to connect with other people. It has like [a] common topic for us to talk about which helps me branch out to other people."

4.4. RQ4: How Do Collegiate Esports Players Perceive the Impact of Gaming on their Physical, Mental, and Social Health?

4.4.1. Physical Health

The participants' perceptions on the impact of gaming on their physical health as the primary theme also revealed subthemes of a sedentary lifestyle, nutrition, finding balance, and social interactions. For example, participants frequently mentioned the adverse effects of gaming on their physical health, particularly due to its sedentary nature. One participant described the toll of prolonged sitting, stating, "Physical… sitting a lot, back pain, indoors more," while another highlighted that gaming "worsens posture… gaming instead of walks/exercising." The neglect of other physical activities also surfaced, with one participant admitting, "I definitely think I need to work out more; but instead, I spend my time playing games." Another participant further elaborated on the physical discomfort experienced during gaming sessions, noting, "Lots of games are very stationary… legs fall asleep, hurts to stretch, lazy sitting in a chair." Additionally, one participant mentioned, "If anything, slightly negative because it's fun and the gym sometimes isn't, so sometimes I will sacrifice gym time to play more."

In addition to the physical challenges posed by the sedentary nature of gaming, many students emphasized the importance of detaching from their devices and engaging in physical activities outside of gaming. One student mentioned their efforts to stay unplugged while working, stating, "I work up to 20 hours a week—average 10-15 hours during college semesters." Others described their involvement in various forms of exercise, with one student noting that they participated in "boxing about three hours per week," while another reported going to the "gym every day for an hour." Additional students shared that they "walked" and tried "to go to the gym, run, walk" or do "home workouts." Interestingly, one student even cited their "calculus class" as their form of physical activity, explaining that it kept them unplugged. The range of physical activity reported varied, with some students involved in activities outside of gaming for up to "25-42 hours per week," while another participant managed just "two hours/day, so 14 hours a week."

Despite these efforts to balance the sedentary nature of gaming, some participants found that their gaming habits could also be physically engaging. As one participant reflected, "I've gamed a lot—[it gets] pretty physical."

4.4.2. Nutrition and Eating Habits

Nutrition was another key subtheme, with several participants discussing how gaming influenced their dietary habits. One participant mentioned that gaming could lead to "skipping meals" and "neglected hygiene (laundry)," while another elaborated on the dietary impact of extended gaming sessions: "Because you're sitting all the time and you could be eating food that is not good for you…so not eating or eating too much, maybe drinking energy drinks." One student even remarked that they had gained "20 lbs. last semester."

Despite these concerns, not all participants experienced negative physical effects on their health from gaming. One participant pointed out the balance they maintain between gaming and exercise, stating, "No, because I also work out, so like my joints get moved around a lot."

4.4.3. Mental Health

The impact of gaming on mental health among participants revealed a range of experiences, reflecting both benefits and risks. For many, gaming served as a positive outlet for stress relief and mental stimulation. One participant remarked, "Esports destresses me," noting, "it improves my mental health." Gaming also acted as an effective coping mechanism, helping participants manage stress and distract from personal issues. As one participant described, "gaming [is] good for mental health to distract from reality (i.e. family problems)." Another participant similarly expressed that gaming was a way to cope with stress and difficult situations, sharing:

> I can get frustrated when playing, but in the end, I know it's a game and I shouldn't be mad about it… it really is also one of my ways I can cope with like stress; or, if like something bad happened like in high school…I had a girlfriend she broke up with me…I just felt like Dang I wasn't expecting it at all, so I was just surprised… yeah, I was really shocked and so then I just played a lot of video games and it really cleared my mind and let me think of other things…take my mind off of it.

This type of mental escape was echoed by another participant who explained, "99/100 games are great for my mental health. I 'Zen out' and forget my problems for a while and come back to the real world happier."

Despite these positive outcomes, some participants experienced negative mental health impacts due to the competitive nature of gaming. One participant described how gaming could be "mentally draining to play games—can be toxic due to the men gamers," reflecting the stress associated with toxic interactions in the gaming community. This sentiment was further supported by another participant who noted, "Some competitive gaming—if you lose, teammates may yell at you or enemy—leading to playing worse than usually do." The pressure and frustration of competition could also lead to anger, as one participant mentioned, "getting tilted, toxicity, flaming, trolling" from gaming.

Some participants also recognized the dual nature of gaming, where even though it could sometimes cause frustration, it generally had a positive impact. One participant explained, "Actually helps you a lot, because it is fun, helps you be happy with that. Some people online are pretty cool but, if you lose and get mad, maybe even breaking controller, that's the downside if you're too serious about it."

4.4.4. Impact on Social Health

Socially, gaming had both enriching and isolating effects on participants, revealing the complex dynamics of online interactions. Many participants found that gaming played a significant role in helping them build and maintain friendships, especially across long distances. One participant mentioned, "Social—can keep track of long-distance friends with games." These positive social interactions extended to significant life events for some, as one participant shared, "I've definitely made more friends through games. One of my groomsmen was someone I played games with my whole life." Similarly, another participant highlighted the strength of their friendships developed through gaming, saying:

> Having the same topic [gaming] helps me to engage with people more...I actually have a friend who I have never met, he's an online friend, I am actually going to see him this summer, in 3 weeks…one of the things that connected us together was gaming...I've known him for 2 years.

Gaming also served as a means of bonding with friends through shared experiences. One participant described how gaming strengthened their relationship with a close friend, stating, "I keep in touch with my best friend every day, and I get to talk to him, and it's [gaming] something we can hang out and bond." Another echoed this sentiment, reflecting on how they maintained social connections through gaming: "We have team outings where we'll go out somewhere to hangout."

In addition to friendships, some participants also discussed the potential for romantic relationships within the gaming community. When asked if they would seek a spouse or significant other in the gaming community, responses varied. One participant shared, "Yes, because it can be hard for people to understand [gamers] sitting at [the] computer 8 hours straight," emphasizing the value of shared understanding in a relationship. Another participant expressed a similar sentiment, stating, "Definitely!—because if I'm playing, we'd bond on something we both understand." Others saw shared hobbies as a foundation for relationships, with one participant noting,

> Absolutely…being a gamer helps me to branch out to other people; it makes it easier to talk with people about the same topic to talk about…having a common topic makes conversation easy and helps us connect and enjoy gaming together.

However, not all participants were enthusiastic about the idea; one stated, “I would rather not—if both playing games, can’t get much done because too focused on the game,” highlighting concerns about gaming potentially dominating the relationship.

Overlapping with mental health, the social dynamics of gaming also presented challenges, particularly in the form of online toxicity and cyberbullying. One participant described the negative aspects of gaming, and stated:

> Toxicity of negative comments and bad stuff that could affect people negatively—cyberbullying (even in teammates)—every game has cyberbullying—hiding behind computers; [there is] a game report system, but most people don’t report—don’t enforce cyberbullying enough (developers and moderators).

Another participant pointed out that the “men in [the] gaming community can be very toxic, cyberbullying a lot,” leading some female gamers to avoid speaking in-game to protect themselves from harassment, as one explained: “Females don’t talk in the games because don’t want others to know [they are female] because many guys believe this is a man’s game.”

In addition to these negative social experiences, some participants noted that while gaming provided social opportunities, it could also lead to feelings of isolation. One participant observed, “You can find people to play game with same interests, make lots of friends online or in the lab/teammates. But can be negative if you have to play by yourself.” Another reflected on a friendship that faded when a friend stopped gaming, stating, “I had a best friend that used to play with me then just stopped playing and then we just didn't have as much in common, and think just faded away.”

These results illustrate the multifaceted role of eSports in shaping the experiences of collegiate players, providing valuable insights into their gaming routines, academic outcomes, career aspirations, and well-being. Grounded in SDT, these findings highlight how autonomy, competence, and relatedness influence players' ability to balance gaming with academic and personal responsibilities. The study emphasizes both the opportunities and challenges posed by eSports participation, such as its potential to foster skill development, social connections, and career pathways, alongside risks like sedentary behaviors and toxic interactions. By addressing these dynamics through targeted interventions and supportive environments, higher education institutions can harness eSports as a transformative tool for promoting balanced, holistic student development while preparing players for success in a rapidly evolving, technology-driven educational landscape.

5. IMPLICATIONS FOR HIGHER EDUCATION

Like other studies at the interface of technology and education [45,46], the findings from this study reveal a multifaceted role for collegiate eSports within higher education, offering both opportunities and challenges for institutions. Esports represents a transformative platform that bridges the digital and real-world experiences of students, enhancing their academic, social, and professional development. Higher education institutions can harness this potential to support recruitment, retention, and skill development while addressing the unique challenges posed by the competitive gaming environment.

5.1. Recruitment and Retention

Collegiate eSports programs attract diverse student populations, including those less likely to engage in traditional extracurricular activities. By offering structured eSports initiatives,

institutions can expand their reach to digital-native students, fostering a sense of belonging and community [47]. These programs can serve as critical tools for improving retention rates by providing students with shared spaces to connect socially and academically [48].

5.2. Skill Development and Career Readiness

Collegiate eSports fosters transferable skills such as strategic thinking, leadership, and collaboration, which are critical for success in both academic and professional settings [49]. Higher education institutions should align eSports programs with career development opportunities by offering courses in game design, coaching, and content creation, alongside partnerships with industry leaders for internships and networking. This approach will ensure that students are prepared for roles in the growing eSports ecosystem and related fields [50].

5.3. Addressing Health and Wellness

The sedentary nature of gaming and associated health risks stresses the importance of integrating wellness initiatives within eSports programs [51]. Institutions should incorporate ergonomic practices, encourage physical activity, and offer nutrition education to mitigate the negative health impacts identified in this study. Additionally, mental health resources tailored to the unique stresses of competitive gaming, such as technostress and toxicity, are vital for fostering resilience and well-being among student gamers [52].

5.4. Promoting Inclusivity

Esports programs offer unique opportunities to foster diversity and inclusion by creating equitable spaces where students from varied backgrounds can compete and collaborate. However, the persistence of gender toxicity and exclusion highlights the need for intentional inclusivity training, mentorship programs, and clear anti-harassment policies [53]. Higher education institutions must prioritize building supportive environments that empower marginalized groups, fostering both equity and innovation within the eSports community.

5.5. Academic Integration

Esports can be strategically integrated into curricula to enhance academic engagement. By framing eSports participation through theoretical models like social capital and self-determination, educators can design programs that promote intrinsic motivation and academic persistence. Structured schedules, flexible deadlines, and peer support systems will further enable students to balance gaming with their academic responsibilities [54,55].

Altogether, collegiate eSports represent an innovative frontier in higher education, blending social, academic, and professional development. To fully realize its potential, institutions must adopt a holistic approach that addresses both the benefits and challenges of eSports participation. By doing so, higher education can leverage eSports to prepare students for success in an increasingly digitized world while fostering well-being, inclusivity, and lifelong learning.

6.DISCUSSION AND CONCLUSION

The findings from this study offer a comprehensive exploration of the complex role of gaming in the lives of a subset of collegiate esports players. Thus, revealing both positive and negative impacts across academic performance, social relationships, and physical and mental health.

Academically, the study revealed that gaming had a varied impact on students, with some reporting that it provided structure and motivation, while others found it challenging to balance gaming with their studies. Through the lens of SDT, these experiences can be understood by examining how gaming fulfills or disrupts the psychological needs of autonomy, competence, and relatedness. Students who effectively managed their gaming schedules experienced a sense of autonomy, helping them integrate gaming with academic responsibilities. The competence gained through mastering games, particularly when students specialized in one or two primary games, also enhanced their confidence in academic settings. However, when these needs are unmet such as when excessive gaming diminishes a student's control over their time or when the pursuit of gaming competence overshadows academic goals, negative outcomes can occur. The findings indicate that while some students successfully balanced gaming and academics, others experienced conflicts, particularly when gaming became a dominant activity. Additionally, many participants played multiple games, often shifting between them to avoid burnout or to socialize with different groups. These gaming habits, while diverse, sometimes interfered with their ability to maintain focus on academic or personal goals, emphasizing the importance for needed support systems that encourage a healthy balance.

Participants also expressed a range of aspirations related to their involvement in esports. For many students, gaming was not merely a pastime but a potential career pathway, with ambitions that spanned from professional play and streaming to roles in game design, coaching, and community development. Colleges and universities have a unique opportunity to support these aspirations by offering tailored programs and resources that bridge the gap between collegiate esports and professional careers. Doing so could include providing career counseling focused on the gaming and esports industries, creating internship opportunities with gaming companies, and offering courses in game design, content creation, and coaching. Moreover, institutions could facilitate connections with industry professionals through networking events and mentorship programs, helping students navigate the complexities of the gaming industry.

For some students, gaming remained primarily a source of fun and relaxation, a way to connect with friends and enjoy shared experiences. In fact, the social dynamics of gaming played a significant role in the lives of participants, with many students highlighting how gaming helped them build and maintain friendships, particularly across long distances. These relationships often extended beyond casual interactions, sometimes influencing significant life events, such as choosing groomsmen for weddings. The ability to connect with others through shared gaming experiences provided not only a sense of community but also emotional support, fulfilling the basic psychological need for relatedness as outlined by the SDT framework. However, the social dynamics within gaming communities can also be complex, particularly in romantic relationships. Participants perceived that differences in gaming habits could lead to conflicts when one partner is not a gamer, aligning with other study findings [56] that couple time may be displaced when only one partner is heavily engaged in gaming.

In addition to these social aspects, gaming served as both a stress reliever and a source of cognitive engagement for many participants. Yet, the competitive nature of esports also introduced challenges such as frustration and mental fatigue, highlighting how such gaming can enhance and also complicate players' well-being. Furthermore, issues of toxicity and cyberbullying, particularly toward female gamers, underscore broader concerns about how gaming environments can foster negative behaviors that contribute to stress, anxiety, and social isolation [57]. According to other studies [33], many players do not report toxic behavior because they perceive it as acceptable, inevitable, or a typical aspect of gaming culture. Addressing these challenges requires targeted interventions, such as developing clear policies against harassment, offering tailored mental health support, and promoting respectful online behavior. Higher

Education could play a critical role by providing mental health counselors familiar with gaming culture, moderated gaming spaces, and diversity and inclusion training in esports programs.

The study also highlighted the physical impacts of gaming. For example, the sedentary nature of gaming contributed to issues like poor posture and unhealthy dietary habits, though some students lowered these effects with regular exercise. Similar to other findings of [58], this study found that while esports players often exhibit high levels of motivation to play games, their physical activity levels are typically lower, which further confirms findings on the sedentary nature of competitive gaming. It is essential that esports programs incorporate strategies to promote physical activity and encourage healthy dietary practices among students. Regular physical fitness routines, specifically designed for gamers, such as stretching and strength training, are critical for reducing the negative effects associated with prolonged sitting and repetitive hand movements. Furthermore, educating students on proper nutrition and emphasizing the importance of balanced meals and proper hydration is necessary to counteract the unhealthy dietary habits that can develop during extended gaming sessions. Future research should investigate the effectiveness of these interventions, particularly the role that integrated physical activity and nutrition programs play in enhancing the health and performance of collegiate esports players.

Interestingly, this study further revealed that students used a variety of self-management strategies across multiple areas, including academics, physical health, and social life. While it remains unclear whether these strategies were self-learned or explicitly taught, this ambiguity suggests a need for further research into how these strategies are developed and how educational programs might better support them. For instance, some students effectively managed their academic responsibilities by using gaming as a reward after completing their studies, while others balanced their sedentary gaming habits with regular physical exercise to mitigate health issues. Socially, many students used gaming to unwind and connect with others, although the significant time spent gaming, often several hours daily, sometimes conflicted with other responsibilities. Despite these challenges, gaming also provided a necessary break from the demands of academic life, serving as a source of enjoyment, relaxation, and social engagement.

While this study provides valuable insights, it is not without limitations. The focus on a specific subset of collegiate esports players at one public university in Texas may limit the generalizability of the findings. Additionally, the reliance on self-reported data introduces potential bias. Future research could expand the scope to include a more diverse sample and employ mixed methods approaches to provide a more comprehensive understanding of these issues. Moreover, exploring the development of self-management strategies in greater depth could lead to the creation of educational programs that help players navigate the demands of both esports and academics.

This study provides valuable insights into the complex role of gaming in the lives of collegiate esports players, highlighting its impact on academic performance, physical and mental health, and social relationships. By exploring how students manage these aspects of their lives while engaged in esports, the research adds depth to our understanding of the balance required to succeed both in gaming and in life. The findings underscore the importance of supporting students in their gaming pursuits, ensuring that their participation in esports contributes positively to their overall development and future success.

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