BOOK OF ABSTRACTS

30th October – 1st November 2024

#ERNC24

Esports Research Network Conference

WHERE WORLDS

COLLIDE

London, United Kingdom

Table of Contents

Foreword

The 2024 Esports Research Network Conference represents a pivotal moment in esports scholarship, bringing together researchers examining one of our time's most significant socio-technical phenomena. The abstracts collected in this volume demonstrate the theoretical depth and methodological rigor being applied to understand esports not only as a competitive pursuit but as a lens through which we can examine broader societal transformations.

From the research presented, four critical themes emerge that underscore the importance of esports scholarship. First, the research reveals how esports serves as a testing ground for human-computer interaction and performance, offering insights into cognitive enhancement, skill development, and the future of human capabilities in digital environments. Second, these works illuminate the complex political economy of esports, from grassroots communities to professional organizations, providing lessons about sustainable development in emerging digital industries. Third, the studies demonstrate how esports spaces negotiate crucial questions of inclusivity, accessibility, and social equity, offering insights into building more inclusive digital futures. Fourth, this research shows how esports is a pioneer in areas like performance analytics, technological innovation, and digital pedagogy, with implications far beyond gaming.

These themes highlight why rigorous academic investigation of esports matters. It provides crucial insights into human interaction, competition, and community formation in an increasingly digitized world. The diversity of the research presented here reflects the maturation of esports scholarship and its growing importance across multiple academic disciplines.

I extend my sincere gratitude to the conference scientific organizing committee, proposal peer reviewers, attendees, presenters, and listeners who have contributed to advancing the field of esports research. Special thanks go to the University of Staffordshire for hosting this event and Manchester Metropolitan University for their organization. I would also like to personally thank Tom Brock, Cameron Vanloo, Eva Nikolova and the whole in-person and online production team for their instrumental work in making this hybrid conference possible.

This collection of abstracts represents not just the current state of esports research, but signals promising directions for future scholarship in this dynamic field. The work presented here will undoubtedly contribute to both our theoretical understanding of esports and its practical development as a societal phenomenon.

GLHF

Tobias M. Scholz (ERN Chair)

Accessible Sport and "wheelchair romance": 1980s Pinball and Arcade tournaments for people with disabilities

Matt Knutson

This presentation examines the case of Rob Marince, who in the 1980s was a young man with a disability competing in arcade and pinball tournaments through an oral "sip and puff" interface, and his brother Gary, who engineered numerous technological accommodations for Rob and organized tournaments for players with disabilities in Pittsburgh at this time. By presenting newspaper, magazine, and video materials about the Marinces, the presentation demonstrates how calls for accessibility in video games are at least four decades old. Meanwhile, the presentation illustrates how competitive gaming has offered new sporting frontiers to players with disabilities for just as long. While "esports" as a term has been around for about twenty years, the events that Gary Marince organized in the early 1980s constitute an illuminating chapter in the pre-history of esports.

Rob's case was covered in RePlay Magazine (a trade publication for the amusements industry), local as well as national newspaper articles, and a documentary short that was aired on PBS in 1980. Across these media representations, we see both somber reporting of the accident that paralyzed Rob from the neck down and awe at the technological accommodations that gave Rob access to media and social participation. We also encounter the public's "wheelchair romance" that concerned his brother: when "some people might think it's fun to be handicapped." Working at the intersection of disability studies, the study of esports, and media history, this presentation synthesizes historical documents about Rob Marince to connect his case to contemporary work in esports & disability, such as PARA Esports and Permastunned. In doing so it echoes calls for technological access in the games industry as well as the need for social interventions like those Michael James Heron advocates for: "discussion, empathy, and visible advocacy" to expand access and thwart contemporary wheelchair romance.

Cognitive correlates of first-person shooter gaming: A cross-sectional Study of Counter-Strike players

Eleanor R. A. Hyde, Robert Schmidt, Daniel J. Carroll and Claudia C. von Bastian

Research regarding the relationship between First-Person Shooter (FPS) gaming and cognitive performance yields mixed results, perhaps due to methodological limitations such as small samples of novice gamers, varying definitions of FPS games and short training periods. However, there are promising findings regarding processing speed and multitasking performance in FPS players, skills which are assumed to be important for FPS play (Bediou et al., 2018; 2023). This online cross-sectional study examined the association between FPS expertise, processing speed and multitasking performance in a large sample (N = 235) of Counter-Strike: Global Offensive (CS: GO) players. Participants completed a CS:GO expertise questionnaire and were allocated into four cluster groups of expertise using k-means cluster analysis: Casual (N = 78), Experienced (N = 101), Aspiring (N = 22) and Semi/Professional (N = 34) players. A colour/shape switching task was also administered to measure processing speed and multitasking performance. We found decisive evidence in favour of an effect of expertise group on processing speed performance (BF = 227.63), in that Semi/Professional players had faster reaction times (RTs); however, there were no differences in accuracy. We also found substantial evidence in favour of an effect of expertise group on multitasking performance (BF = 6.56). However, it was Experienced players who showed greater multitasking performance compared to Casual and Semi/Professional players. Application of the drift-diffusion model revealed decisive evidence in favour of expertise group on non-decision times (BF = 279.59), suggesting that more expert FPS players are better able to process (encode) and respond (motor execution) to stimuli. Our findings demonstrate that FPS expertise is a multi-dimensional construct which can be captured by a range of measures, and that more expert FPS players show advantages in processing speed without sacrificing accuracy, due to efficient processing of information and generation of a motor response.

Do video gamers move more than we think? An investigation of upper limb kinematics of video gamers according to game genre

Antoine Dupuy, Mark Campbell and Adam Toth

Esports has been shown to place significant demands on cognitive abilities. The mechanics of video game players, however, require both movement and control. Yet, the biomechanical characteristics of esports players have received little attention. The purpose of this study is to examine and characterise the kinematic behaviour of the upper limbs of gamers during the gameplay of different game genres. 63 esports players completed 10-minute gameplay of either a First Person Shooter (FPS), a Multiplayer Online Battle Arena (MOBA), or an Adventure game. Three tri-axial accelerometers were placed on each participants' right hand, forearm, and arm (mouse side) to record kinematic data during gameplay. The average acceleration, number of direction changes, distance travelled, and displacement area were calculated for the hand. We also determined acceleration ratios between hand and forearm, and forearm and arm. We found that the kinematic behaviours of gamers could be discriminated according to the game genre they played. FPS players moved their hand more rapidly (greater average hand acceleration), through a greater cumulative distance, and over a larger area compared to MOBA players. FPS players also had more hand direction changes, and greater relative movement of the hand-forearm and forearm-arm compared to Adventure players. MOBA players moved their hand more rapidly, with more directional changes, and through a greater distance compared to Adventure players. However, they achieved this larger distance within a smaller circular hand displacement area compared to other genres. This is the first study to characterise players of different game genres according to their kinematic behaviour and is one of the first studies to demonstrate the importance of biomechanical study in gaming and esports. Our results emphasize the importance of considering game genre when exploring physical game demands and the interaction between gamers and their equipment.

Inclusion of loot boxes and paying for competitive advantages in esports

Leon Y. Xiao

The German Government recently argued esports cannot gain charitable status because: (i) some games include gambling-like mechanics (loot boxes) or (ii) give players who spent more real-world money a competitive advantage (see: https://www.gamesmarkt.de/german-games-market/minor-protection-laws-non-profit-status-of-german-e-sport-threatens-to-fail-due-to-harmful-mechanics-3d51541b2704a2baa2675ec119dfe99c). Inspired by this interesting position, we consider two uncomfortable questions concerning the inclusion of loot boxes and opportunities to pay for competitive advantages in esports. Firstly, certain esports games (e.g., Hearthstone) force competitive players (including children under 18) to buy loot boxes in order to participate: this raises questions concerning the encouragement of underage (quasi-)gambling and relative financial power being able to influence one's participation (and competitiveness) in a sporting event. However, participants are allowed to gain competitive advantages by spending money in traditional sports (e.g., more expensive training). Card games (such as Magic: The Gathering) with similar gambling-like mechanics have also been socially accepted for many decades, including official recognition by the General Administration of Sports in China, although it also prohibited participation by primary and middle school students. These uncomfortable aspects of esports and the unequal treatment of esports and traditional sports are worth further discussion. Secondly, countries are increasingly adopting stricter regulation of loot boxes and video games in general, and this is having a tangible impact on esports. The Belgian ban on loot boxes meant that Belgian players could no longer (legally) compete in FIFA (EA FC) tournaments. The requirement in China that every video game published must have a Chinese partner also caused Hearthstone to be removed from the 2022 Asian Games as an event. One might argue that games with loot boxes should not be recognised as esports. However, that is oversimplistic because players often decide to play games unintended to be esports as esports (e.g., Genshin Impact). Who decides what is esports?

Comparing heart rate and heart rate variability in a sports vs action-adventure game

Sarah C Cregan, Adam J Toth and Mark J Campbell

The ability to cope with stress is imperative for performance in competitive gaming, yet there is a lack of research on the physiological demands of esports participation. One way to measure physiological stress validly and reliably is via heart rate variability (HRV) (Peabody et al., 2023). The current literature examining esports and HRV is limited, and of these studies, the majority focused on MOBA games. There is a need to better understand the physiological demands of esports, by expanding the game genres examined. For this reason, we compared the physiological demands of playing a competitive esport (sports game) to a non-competitive (action-adventure) game. N = 40 participants played either a sports or action-adventure game, whilst having heart rate variability and heart rate monitored. Results revealed that playing either game had a significant impact on physiological responses, evidenced in higher rate, reduced RR intervals, and both lower high frequency (ms2) and RMSSD. Results indicate that playing a more competitive game may be more physiologically demanding than playing a non-competitive game. These findings have implications for examining interventions centred upon improving player resilience to stress and optimising player performance in competitive settings, with HRV providing players and coaches with a cost-effective method of monitoring training load, indexing both player stress and recovery.

Spatial dynamics in esports: An examination of athlete-owner relationships through organizational spaces

Silvio Ripetta

This article focuses on analyzing the spatial relationship between eSports athletes and team owners, examining how this dynamic could lead to disinclusion practices. The theoretical framework of this study integrates studies on organizational spaces and sociomateriality, elucidating how spaces, in their "non-neutrality," constitute a material element essential for understanding the social relational dynamics among actors in this sector. Employing a methodological approach based on qualitative interviews and participatory observations, we explored and analyzed the experiences and perspectives of professional esports athletes and team owners through the lens of the primary spaces they inhabit, like houses, gaming houses, LAN arenas and others. Interviews were conducted to comprehend power dynamics, barriers to participation, and opportunities for inclusion within this context.

The results indicate that the nature of the spatial relationship between athletes and team owners can significantly impact athletes' experiences and their careers. This relationship can foster exclusion through unequal distribution of spatial resources, the nature of social interaction mediated by specific spaces, and organizational policies. Several practices and strategies have emerged that could be implemented to understand and address these dynamics. It is crucial to promote greater diversity, equity, and inclusion in esports by shifting towards an embodied conception of athletes.

The implications of this study are relevant for key stakeholders in esports, including athletes, team owners, event organizers, and regulatory organizations. Recognizing and addressing the dynamics contributing to exclusion is essential to create a more equitable and inclusive environment for all involved stakeholders. In conclusion, the aim is to contribute to a better understanding of the challenges and opportunities related to diversity, equity, and inclusion in eSports from a spatial perspective. The emerging results will be further explored, and concrete recommendations will be provided for improving practices within the esports community.

Striving for the top: What makes gamers aspire to become top e-athletes?

Milo Reuter and Robert Hellpap

To what extent does skill matter for gamers to consider becoming e-athletes? The decision to pursue a career as e-athlete is multifaceted and not only based on skill or performance. Having the opportunity to pursue a career as e-athletes and the choice to invest into this, applies mainly to young adolescents. To better understand what motivates such choices, we investigate the tipping point between moving from a "leisure gamer" to a "labor e-athlete".

We draw on arguments from classical sociological theories of educational and labor-market decisions (e.g. Duncan-Blau model of status attainment) with perspectives on less traditional (and potentially more uncertain) career choices (e.g. leisure to labor on established professional sports, artists, hobby to job etc.). Thus, we investigate factors such as educational trajectories, parental background, aspirations, socio-economic context and social embedding.

We designed a survey based data collection, linked with player KPIs, for a sample of german League of Legends Teams as well as sport clubs. The German context provides a great opportunity to investigate determinants career paths into professional sports, because of the historically embedded role of football clubs and the variety of forms in which esports is performed, from classical football clubs, to university leagues and up to top tier Teams.

Results from quantitative analyses can provide insights for two major questions: 1) To what extent does classical sociological / labor-market research apply for career paths for e-athletes? 2) What contextual dimensions can improve the wider development of young talents? Thus, our findings promise to contribute not only to the field of sociological research, but also has relevant implications for the societal perception of esports, recruitment, as well as strategies for development of young talent.

How do esports game companions in China improve their career sustainability?

Wenling Gou and Florian Lefebvre

Achieving and maintaining a career in the esports industry has recently been a rising topic of interest for scholars. Due to the vulnerability of esports games themselves such as unpredictable game version updates and the unstable game lifespan, it seems that working in esports industry faces great challenges. In this context, conducting a study for the game companionship industry in China which now constitutes a new popular opportunity for players to make a living out of esports is vital for the understanding of how to improve career stability in esports ecosystem. Despite the number of game companions in China already exceeding one million, this represents a relatively virgin area of research. To this end, an in-depth qualitative study has been made build upon eleven interviews with game companions and relevant esports professions. Our results firstly support the idea that players demonstrate a high transferability of gaming abilities. A second outcome pertains to the strong connectivity game companions portray with the digital economy. A third rationale relates to the refined market segmentation strategies that enhance the professional stability of game companionship industry. Lastly, our research highlights that many active or retired professional players have either prolonged their esports careers or diversify their income channels by being a game companion. Finally, the main theoretical contribution of this research stems in the interconnections with the digital economy theories of the whole game companionship industry.

The influence of the mechanical click properties of a gaming mouse on click performance and users' perceived performance in first person shooter video games

Arthur Lynch, John Joyce, Adam Toth and Mark Campbell

We investigated the effect of differing mechanical characteristics of gaming mice click buttons on first person shooter (FPS) performance.

Four prototype Logitech Pro gaming mice, differing only in operational force (OF; force measured at the instant the button switch buckles, resulting in a snap action) and click ratio (CR; magnitude of the decrease in force that occurs between the OF, and the force measured at the end of the switch buckling) profiles were used for this investigation. Mice were either low or high OF (low = 44.3-45.2 gf, high = 63.8-65.4 gf) and CR (low = 16-19 %, high = 28-30 %). 70 participants (66 male; age 23.0 ± 5.9 years) performed a customised, FPS-specific click timing task with each mouse, in a randomised order. Participants aimed to click on 30 targets that moved horizontally across the PC screen, at three different speeds: slow, medium, and fast respectively. Additionally, participants performed a 30 second mouse accuracy task (Mouseaccuracy.com), requiring participants to hit as many appearing targets, of variable sizes on screen as possible.

Two-way repeated measured ANOVA revealed no effect of click characteristics on hit rate ($p = 0.593$, $\eta p2 = 0.004$), miss rate ($p = 0.575$, $\eta p2 = 0.004$), undershoot error ($p = 0.974$, $\eta p2 = 0.001$) or overshoot error ($p = 0.991$, $\eta p2 = 0.001$) during the click timing task. A significant difference was observed for target accuracy during the mouse accuracy task ($p < 0.001$, $\eta p2 = 0.112$), indicating greater performance with high-OF mice. Moreover, participants rated their performance to be greatest with the high-CR, high-OF mouse ($p = 0.032$, $\eta p2 = 0.030$).

Discussion/implications: Mouse click characteristics do not appear to influence click-timing performance, though high-OF mice may be superior for performance and user perception during mouse accuracy tasks.

Transferable Skills from Esports to International Business Environments: An Intercultural Management Perspective

Tobias M. Scholz and Charissa Tan

This paper proposes an exploratory study on the transferable skills developed through esports and their applicability in intercultural business settings. This study will examine how the skills honed in the dynamic, team-based environments of esports can be effectively translated into professional skills in diverse workplace contexts. Key focus areas include strategic thinking, teamwork, and adaptive problem-solving. The research aims to understand how esports experiences can inform best practices in intercultural team management, enhancing cross-cultural understanding and cooperation in globalized corporate settings. By analyzing successful intercultural interactions within esports teams, the study will identify core competencies that are critical for managing intercultural teams and propose strategies for implementing esports-derived practices in business environments to boost team performance and innovation. The outcome will contribute to a refined approach in intercultural management, emphasizing practical applications of gaming experiences in professional development and team building across cultures.

You can't do it: The aversive effects of negative self-talk on individual performance in esports

Axel Berard, Reynald Brion and Paolo Berbudeau

This study explores the influence of self-talk on the performance of Counter-Strike: Global Offensive (CS:GO) players, integrating theoretical foundations from Zinsser et al. (2006), Hatzigeorgiadis et al. (2011), Hallett & Hoffman (2014) and Latinjak et al. (2019).

The effects of both positive and negative self-talk were tested with an online experiment conducted with 588 Counter-Strike: Global Offensive (CS:GO) players. ANOVAs and linear regressions were used in the analysis.

The study identifies a significant relationship between self-talk and performance outcomes. A short positive self-talk stimuli seems to have no significant effect on performance, whereas negative self-talk has a significant detrimental effect on it.

These findings underscore the importance of psychological support in esports, an ecosystem highly dependent on performance results. This paper is suggesting implications for training and development in competitive gaming environments, especially to tackle performance issues known as "tilt" the ability, or not, to keep one's focus, and offers managers with elements to focus on to improve their team's performance.

Esports World Cup touristic impact

Leandro Becka, Marcos Antón and Tomás Mosqueira

In a context where technology is increasingly present in different aspects of life, the phenomenon of esports has emerged: playing video games competitively and professionally. The steady increase in the audience for esports and the number of organized video game competitions has drawn the attention of the business, entertainment, and tourism industries. This study aims to investigate the case of the Esports World Cup in Riyadh, Saudi Arabia, examining its staging characteristics and its relationship with tourism activities. By focusing on the 2024 event, the research seeks to understand the potential economic and social impacts on the local hospitality and tourism sectors, as well as the strategies and resources employed by the city to enhance the tourism experience. Additionally, this study will explore how events such as the Esports World Cup can serve as a tool for diversifying the tourism offerings in the Arabic region, traditionally known for religious and business tourism. The goal is to provide insights into how esports events can be integrated within tourism policies to benefit the hospitality and tourism industry. This research aims to position itself by examining how the organization of the EWC can serve as a catalyst for promoting tourism activities in the Arabic region. The introduction will offer definitions and examples of governance in tourism, alongside a review of prior research on the intersection of esports and tourism. By delving into the specific case of Riyadh, Saudi Arabia, the chapter seeks to underscore the potential economic and social advantages for the destination by hosting such a prestigious event. Furthermore, it will extend the investigation of Becka et al. (2024) work on Esports Hospitality & Tourism, which identified and delineated cities that have emerged as esports tourism hubs. Their study emphasized the significance of digital initiatives and the involvement of Destination Management Organizations in integrating esports into their governance strategies. Building upon these insights, this chapter will explore how the EWC can function as a tool for diversifying tourism offerings in the Arabic region, an area that has been relatively underexplored from a tourism perspective thus far. The objective is to provide insights into the integration of esports events within tourism policies to enhance the hospitality and tourism industry.

The research methodology will encompass both theoretical analysis and on-site investigation to delve into the impact of the EWC in Riyadh. The aim is to understand the potential of esports tourism in Riyadh and the broader Arabic region.

- Event Observation and Data Collection: A comprehensive field study will be conducted during the Esports World Cup in Riyadh. Researchers will collect quantitative and qualitative data on various aspects of the event, including attendance, participant demographics, and economic impact on the local hospitality and tourism sectors. Observations will focus on the event's organization, audience engagement, and logistical aspects.

- Stakeholder Interviews: In-depth interviews will be carried out with key stakeholders, including event organizers and members of the foundation funding the event. These interviews will explore their perspectives on the event's impact, the strategies employed to attract tourists, and the challenges and opportunities encountered.

- Analysis of Tourism Policies: The study will involve a review of Riyadh's tourism policies to assess their alignment with esports events. This analysis will examine existing frameworks and initiatives that support or hinder the integration of esports within the tourism sector.

- Comparative Analysis: Insights from the field study in Riyadh will be compared with findings from previous research on esports tourism capitals, such as Los Angeles, Berlin, Katowice, and Valencia. This comparative analysis will help identify best practices and potential areas for improvement in Riyadh's approach to hosting esports events.

In conclusion, this study aims to explore the potential impact of hosting the Esports World Cup. Through comparative analysis with other esports tourism capitals, we aim to uncover common trends and best practices that can inform future policymaking and event planning in esports. Ultimately, we seek to understand how collaboration between event organizers, local government, and the tourism industry can maximize the benefits of esports tourism.

Unveiling cultural signatures in esports: An Ethnographic study of chinese international students' identification practices in League of Legends

Dan Zhao and Mo Jia

In the dynamic arena of League of Legends (LoL), this study examines how Chinese international students in the UK use subtle, non-verbal cues to identify fellow Chinese players, despite restrictive communication policies. Employing a mixed-method approach that includes ethnographic observations, quantitative surveys, and social network analysis, the research explores these unique identification practices. The Social Identity Model of Deindividuation Effects (Reicher, Spears, & Postmes, 1995) frames our understanding of how anonymity influences cultural identity expression in digital interactions.

League of Legends serves as a vital social platform for Chinese international students, facilitating cultural connections during times of limited physical interaction. This research focuses on their in-game strategies for recognizing each other, which provides insights into cultural identity and community dynamics in digital spaces.

1. Ethnographic Observations: In-game behaviour of 20 players (10 Chinese, 10 non-Chinese) will be documented to identify cultural cues.
2. Quantitative Surveys: Surveys will assess the prevalence of identified cues among a larger player cohort.
3. Social Network Analysis: This will map the connections and community structures that emerge around cultural lines within the game.

Preliminary data suggest that character choices, in-game locations, and gameplay styles serve as cultural markers among Chinese players.

Discussion/Implications:

The findings are expected to offer insights into the integration of cultural identity within online games, suggesting design enhancements for cultural inclusivity. These results will also inform strategies for supporting international students' social integration through digital platforms, contributing to the field of digital leisure studies. We plan to submit a full paper when the study is done.

References

Reicher, S. D., Spears, R., & Postmes, T. (1995). A Social Identity Model of Deindividuation Phenomena. European Review of Social Psychology, 6(1), 161–198. https://doi.org/10.1080/14792779443000049

Wasserman, S., & Faust, K. (1994). Social Network Analysis: Methods and Applications. Cambridge University Press. https://doi.org/10.1017/CBO9780511815478

An augmented experience – Does the use of Augmented Reality in esports events enhance the viewing experiences for the spectators? A case study of League of Legends Worlds events.

Radoslaw Grzegorzewski

The introduction of Augmented Reality (AR) into live sports has created a new dimension of experiencing that spectacle. Together with the rapid growth of esports, this has led to innovative approaches to enhancing viewer engagement, and AR has emerged as a prominent tool in this domain. Additionally, the study identifies key factors that influence the reception of AR, such as its integration with live gameplay, the technological proficiency of the audience, and the novelty effect.

Using the mixed method approach (qualitative and quantitative methods), this study investigates the viewers' attitudes towards emerging technologies with a focus on immersive technologies such as Virtual Reality (VR) and Augmented Reality (AR) and their experiences whilst seeing these technologies being used during esports events.

By using a mixed-method approach, this study gathered data through a questionnaire that 42 respondents completed and 2 interviews with participants who are engaged in the esports community. The findings of the study reveal a majority of the young demographic that this research project enrolled have viewed immersive technologies as enhancing the viewing experience, whereas the impact of the technology on event popularity was more varied.

The implications of these findings suggest that AR not only enriches the spectator experience but also holds potential for broader applications in the esports industry, driving viewer satisfaction and fostering a deeper connection to the event. This research study has been limited by the small sample of questionnaire and interview participants a larger research project will have to be done in the future to fully understand and gather more data about the topic of immersive technologies and their effect on viewers and spectator experience. This research contributes to the understanding of digital enhancements in live esports entertainment and offers practical insights for event organizers aiming to leverage AR technology to its fullest potential.

The power of idol culture in Chinese League of Legends fandom

Mo Jia

The influence of idol culture, particularly the Korean Wave (Hallyu), has significantly impacted East Asia and extended to the Western world since the 1990s. Despite extensive research on this phenomenon (e.g., Lee and Jin, 2019; Zhang and Negus, 2020), its effects on esports, particularly the League of Legends (LoL) fandom, are underexplored. This study investigates the identity and behaviour of Chinese LoL fans and superfans, exploring if idol culture shapes the Chinese LoL fandom.

In the past decade, League of Legends fans have gradually exhibited certain behaviours and trends that are related to idol culture, such as 'sasaeng fan' and supporters associations. This study examines whether such a culture influences the Chinese LoL fandom, focusing on the self-awareness, behaviours, and actions of these fans.

Using a qualitative approach, eight in-depth semi-structured interviews with Chinese LoL fans and superfans were conducted. The data reveal novel insights into their fandom activities and the integration of idol culture within the esports community.

Preliminary findings indicate that idol culture significantly influences LoL fans and superfans. This influence manifests in the formation of fan clubs, the pursuit of players, and the prevalence of negative comments on social media. Additionally, idol culture has led to distinct classifications among Chinese LoL fans, such as 'kè jīn fěn' (fans who significantly financially support their idols) and 'CP fěn' (fans interested in the romantic pairing of idols).

The findings are apparent that under the sway of idol culture, Chinese LoL fans possess considerable influence, which already (and continually) extended to other sectors of the Chinese esports industry. This study offers a novel perspective on esports audience research, laying the groundwork for future studies in community research and social psychology.

References

Lee, H. J. & Jin, D. Y. (2019). K-POP IDOLS: Popular Culture and the Emergence of the Korean Music Industry. Lexington Books.

Zhang, Q., & Negus, K. (2020). East Asian pop music idol production and the emergence of data fandom in China. International Journal of Cultural Studies, 23(4), 493–511. https://doi.org/10.1177/1367877920904064

Hands on: Steering Wheel haptic feedback influences sim racing performance

Ciara Murphy, Mark Campbell, Fazilat Hojaji and Adam Toth

Haptic feedback in sim racing steering wheels usually consists of force feedback (FF) and vibrotactile feedback (VF). It is intended to provide information about the movement of the car and, in turn, enhance the racing experience. Although studies exist examining FF in driving simulators (e.g., Liu & Chang, 1995), there is little empirical evidence to indicate whether FF or VF can improve sim racing performance. The aims of this study are to understand if haptic feedback influences racing performance and whether an optimal level of feedback for performance exists.

Thirty-six participants were tested and separated into two groups: one mid-range feedback group (FF = 6nm, VF = 50%) and one extreme feedback group (FF = 11nm, VF = 100%). Each participant had one practice condition and four test conditions consisting of 5 laps each. Haptic feedback settings were manipulated for each test condition (no feedback at all, both FF and VF turned on, FF on and VF off, and FF off with VF turned on).

Lap times for all mid-range feedback conditions were faster than when no feedback was provided. Lap times were fastest when participants had mid-range feedback from both force and vibrotactile sources (FF = 6 nm, VF = 50%). However, no significant difference in performance was seen between any of the conditions in the extreme feedback group.

This is the first study to demonstrate that haptic feedback can impact simulated racing performance and that an optimal level of feedback exists. Understanding the effectiveness of feedback can help aid understanding of the optimal setups for performance in simulated environments and provides further insight and knowledge for hardware developers and for sim racers themselves.

Exploratory proposal: Streaming engagement in esports – A study on age and gender differences in viewer behavior

Bradford Harris

This proposed research explores the impact of live esports streaming on viewer engagement and gameplay improvement, focusing mainly on age and gender differences. Utilizing an explanatory sequential mixed-methods design, the study integrates the Theory of Reasoned Action (TRA) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to examine esports audiences' social and behavioral dynamics. Quantitative data from esports viewership analytics will be paired with qualitative feedback through surveys, interviews, and participant journals to uncover how streaming influences viewer motivation, community interaction, and skill development across diverse demographic groups. The research questions aim to determine: (1) How do consumption motives of esports spectators influence their behaviors across different streaming types and game genres? (2) What differences exist between male and female viewers in esports consumption? (3) Which age groups show the most significant improvements in communication, social interaction, and community support due to streaming? Drawing participants from K12 and higher education settings, the study comprehensively examines how streaming platforms like Twitch shape the esports experience. By highlighting the role of streaming in community engagement and content creation, this research contributes to the broader discourse on media and communication within esports, providing actionable insights for developing more inclusive and effective streaming practices.

Fashion's opportunity to achieve brand engagement through esports

Francesco Sorbino and Emanuela Prandelli

This research work aims to investigate and explain the reasons that led the world of fashion luxury and gaming to converge, seeking to fill the research gap found in the literature regarding the use of video games – specifically esports - as a marketing tool to foster brand engagement for fashion companies. Although a rich body of knowledge exists regarding gamification and its positive effects on brands (Hamari & Xi, 2020; Feng et al., 2019), few studies delve into how the medium of video games might influence customers; therefore, this research aims to verify whether the positive effects that gamification has for brands are also valid with video games. Methodology: Via the diffusion and analysis of a quantitative survey developed for this research, the study verified that esports are able to generate a more positive brand engagement for fashion firms, compared to the use of fashion-branded advergames. It was also demonstrated that the engagement built through video games proved to be a valid mediator for both purchase intention and brand loyalty, underlining how these collaborations can also bring positive spillover effects in terms of loyalty and potential sales. Results: In light of these findings, the research helped to develop a model that can guide fashion managers in choosing which initiative to undertake within the gaming world. Therefore, based on the findings of this study, it can be assumed that esports are a valid tool to accomplish the quest for engagement of fashion brands and video games should become a key piece of the marketing strategy for every fashion firm that wants to enlarge its customer base, in order to be always ready to play the game to stay relevant in the world to come.

Investigating the construct of luck and its impact on performance in professional Apex Legends

Callum Clark

This paper investigates a new area of analytics about player performance statistics in the Battle Royale genre. By exploring the concept of quantifiable luck, we can quantify the impact on Apex Legends professional players and the impact of having good or bad luck in regard to a player's overall performance. Apex Legends as a casual game is often seen as luck-based, with the outcome of a game often being defined by the loot that a player receives. This is the complete opposite to the competitive Apex Legends scene, where mechanical skill and informed decision-making make all the difference; but how much impact does quantifiable luck truly have on competitive Apex Legends?

Applying randomised sampling methods on data from the ALGS 2023 Split 3 Playoffs; I used correlation tests in order to confirm the correlation between damage output and receiving the player's individual preferred weapons; upon confirmation of the correlation on an individual basis, I did the same for a team with regard to how many of the 3 players in a team found their ideal loot.

Results showed that individual players obtaining their ideal loot drops had an increase in damage output of 29%; with teams averaging 2.3 sets of 'ideal loot' per game. The correlation between damage and finding ideal loot also applied to a player's average KDA, which increased by 27% with a player's ideal loot drops.

The findings of this paper define a new way in which we consider esports statistics in games that have aspects of quantifiable luck; it opens a new avenue of exploring player performance analytics in the Battle Royale genre, allowing for a new perspective in which we consider players, their performances as well as analysing game footage.

Investigating the effect of physical exercise on esports performance in first-person shooter gamers

Di Tang, Kim-Wai Raymond Sum and Ruisi Ma

Electronic sports (esports), an emergent and officially recognized competitive discipline, is relatively underinvestigated in the realm of sports science, particularly in terms of training methodologies and performance optimization. Previous empirical evidence supports the notion that physical exercise significantly enhances specific cognitive functions, such as reaction time and executive functions, which are crucial abilities affecting esports performance. Recent scholarly research has demonstrated that short-term physical interventions can effectively serve as pre-performance warm-ups, leading to significant improvements in esports performance. This finding highlights the potential for integrating physical activity into esports training and practice. However, there is still a substantial lack of longitudinal empirical data regarding the sustained integration of physical exercise within esports training frameworks, which is essential for developing a synergistic training model that combines physical conditioning with esports proficiency.

This study is structured as a randomized controlled trial (RCT). A total of 60 participants will be randomly allocated (using computer-generated randomization) into either an intervention group or a control group. Both groups will undergo assessments for body composition, physical competence, and esports performance. Additionally, sleep quality, physical activity levels, dietary habits, and gaming behaviors will be measured to ensure the consistency of participants' habits before and after the trial period. The intervention group will participate in a six-week high-intensity interval training (HIIT) exercise program, while the control group will not receive any intervention. Both groups will be instructed to maintain their usual sleep patterns, gaming, and dietary habits. After six weeks, a post-test assessment will be conducted on all participants. One-on-one interviews will be carried out with members of the intervention group to collect their feedback and perceptions regarding the exercise intervention.

This randomized controlled trial assesses the potential of physical exercise to enhance esports performance, aiming to pivot training paradigms towards a comprehensive regimen that underscores the importance of physical fitness for cognitive and strategic prowess in competitive gaming.

Sustainability in esport teams: Exploring the role of regional affiliation on team identification and consumer behavior

Se Jin Kim

The rapid growth of esports has transformed the industry from a niche segment into a global phenomenon, attracting millions of fans, substantial investment, and significant media attention. As esports continues to evolve, the sustainability of its teams has become a critical area of focus for academics and practitioners. Numerous studies on sport teams and their hard work to create a sustainable business model, their alliance with regions and cities has been successful, providing the opportunity to build social relationships. Esports possesses a unique characteristic: players and fans gather in physical venues to experience the events together, but like traditional sports, matches are played virtually. Drawing on established theories from sport management and marketing, we aim to comprehensively understand how regional connections can serve as a strategy to drive long-term viability and success for esports teams.

With an exploratory approach, a quantitative method will be utilized to identify potential changes in esport teams without regional affiliations. Esport fans will be surveyed with questions that will measure their regional attachment, team identification, and other variables that will act as control variables (i.e., gender, age, esport identification). The data will be analyzed through multiple regression. Behavioral intentions in esport purchasing behavior (i.e., attend, stream matches) will be tested.

The proposed study will provide a deeper understanding of potential esport consumers' perspectives based on the regional affiliation of esport teams. We explore the regional affiliation and consumers' local identities and how they may exhibit higher levels of team identification, perceived community impact, authenticity on local sponsorships, and attitudes toward the team, which may lead to positive purchase intentions.

Like much sport management research focusing on attachment, the importance of regional affiliation can be explained through the lens of social identity theory. This study aims to bridge the gap between theory and practice, providing actionable insights for esports team managers, marketers, and stakeholders. By investigating the impact of regional connections on the sustainability of esports teams, this research seeks to inform strategic decisions that can enhance team stability, fan engagement, and economic viability. The potential implications of this study are vast, with the findings potentially revolutionizing how esports teams approach their regional affiliations in an increasingly competitive landscape.

The development of physical training plans for esports athletes a strategic study into the esports performance coaching

Cameron Vanloo

As esports coaching continuous to become a more scientific and regimented field within the esports ecosystem the need for holistic training regiments that integrate physical fitness alongside cognitive skills has become increasingly evident. This paper delves into the development of a physical training plan specifically designed for esports athletes, aiming to enhance their overall performance, health, and well-being.

The study begins by delving into an in-depth review of existing literature on esports training practices, identifying common physical and mental health challenges faced by esports athletes. Drawing on cognitive and physical interaction theories, we establish a theoretical framework that underscores the interdependence of physical fitness and cognitive function in high-performance gaming.

Our study employs a mixed-methods approach to design and evaluate a comprehensive physical training program. The intervention includes a variety of exercises targeting cardiovascular fitness, strength, flexibility, and posture, implemented over a 12 week period. Participants will be selected based on voluntary engagement and will take part in pre and post-intervention assessments, including physical fitness tests, cognitive performance evaluations, and psychological well-being surveys.

Results are expected to indicate that the physical training program significantly improves physical health markers, cognitive performance metrics, and in-game success rates. Additionally, participants report reduced stress and improved mental health. These findings will aim to highlight the critical role of physical training in optimizing esports performance and suggest practical applications for integrating such programs into routine esports training.

This study not only aims to contributes to the evolving field of esports training but also offers a foundation for future research and the development of best practices in the physical conditioning of esports athletes

Expert video game domain knowledge and decision-making: Applying the Critical Decision Method to esport players

Charlie Smith, Peter Howell, Martina Navarro and Brett Stevens

Expertise and factors facilitating it are of interest to both esports researchers and practitioners. While there is a substantial range of factors that can contribute towards expert performance, there is limited understanding on how expert players leverage and structure information from the game itself during decision-making processes. This study explored the perceptions of expert players on decision-making and the role of contextual game knowledge within high-level video game play. Six expert players in the video game Team Fortress 2 were interviewed using the Critical Decision Method (CDM); a semi-structured retrospective interview technique designed for eliciting expert knowledge. Participant interviews were transcribed and subject to a reflexive thematic analysis with an inductive approach. From this analysis, multiple types of decisions were found to sit within various levels of play; from second-to-second moments, from second-to-second moments to discrete segments of play, to match-wide and/or multiple-match strategies. These levels are defined as the Microgame, Macrogame, and Metagame respectively. While most in-game factors were situated within one of these levels, some were situated across more than one, demonstrating that video game players shift their focus from one level to another during play, from high-level strategic thinking towards reflexive responses to adjustments in the game state. The use of CDM presents some methodological contributions for esports and games research domains, given its scarcity within these areas; it is recommended that further work investigates applications for CDM and similar interdisciplinary methods. For instance, whether experience with the selected game is necessary when conducting research into expert decision-making and knowledge elicitation in esports. Finally, methods such as CDM are useful for esport practitioners such as coaches by providing a structured approach to understanding why a player made a specific decision during a match.

Leadership verbs in competitive digital teams

Sean Carton

This practitioner presentation will examine the use of leadership tools and vocabulary embedded in competitive play in the lane-pushing / MOBA genre. It will outline the history of leadership verbs found in esport titles, the evolution of language used by players, and the innovation of new leadership verbs in the upcoming game 'Causeway'. Of particular interest is how the introduction of these verbs can support long-term sustainability for an esport, through expanding the demographic and the potential impact of these verbs on fostering a more inclusive community and welcoming experience in teams.

Diversity, equality and inclusion: The effects on minority attainment and play within video games

Kieron Farley

With the increasing popularity of Esports and their subsequent games, there is a noticeable lack of academic discussion regarding the limited representation of many groups of people at the highest levels of play. This paper aims to help fill that gap with new research on why underrepresented groups are unable or choose not to compete at the highest levels of play.

Esports itself is considered a global game where anyone can play and yet there are many groups of people which are still considerably underrepresented in the scene. Although papers from the likes of Dietrich (2013), Kondrat (2015) and Kosciesza (2023) have been critical of how games have represented groups in the past, they rarely examine the lack of diversity within the player base especially at the professional level.

Research will be conducted using primary research through a widely distributed survey and then compared with secondary research from multiple disciplines to see if findings align with previous academic literature on the subject.

Esport studies in higher education: A content analysis of validated course curricula in the United Kingdom

Michael Scott, Carina de Assuncao, Mark Lestrange and Rory Summerley

There is considerable interest in the development of esport studies in the global higher education sector. As esports has grown in popularity, so too have university courses increased in number. Since Jenny, Gawrysiak, and Besombes (2021) reviewed international esports curricula, the United Kingdom (UK) has gone from five course providers to 24. Yet, there seems to be little consensus on what an esport degree entails due to their varying foci and interdisciplinary complexity. As such, this research questions: what are the trends in curriculum design for esport degrees in the UK? A content analysis is being conducted on validated course specification available for those programmes listed on the University and College Admission System (UCAS) for 2024/25 entry. These documents are being reviewed in correspondence with the hub-and-spokes model and career pathways presented in Scott et al (2021). They also explore the notion of 'graduateness' (Steur, Jansen, & Hofman, 2012) with attention to relevant benchmarking statements drawn from the Framework for Higher Education Qualifications (FHEQ), Sector-Recognised Standards (SRS), and relevant Professional, Statutory, and Regulatory Bodies (PSRBs). The initial findings reveal an intricate network of partnerships, particularly between awarding bodies and providers where there is scope for progression or articulation from earlier levels of study. They also seem to suggest that many courses remain general, that there is some consensus emerging on the shape of esport ecosystems, and that specialized courses which focus on particular career pathways are starting to emerge. These trends have implications for the revalidation of curriculum in forthcoming years, illustrate how providers can work with professional bodies to assure quality, and might also inform institutions interested in offering new awards for this industry. It is also hoped that these findings may stimulate discourse between industry and academia.

Organisational stigma of the United Kingdom esports industry from an external audience

Joshua Lindsey

The video game industry has long been stigmatised as addictive and violent. The industry also has stigmas regarding individual gamer stereotypes, such as toxicity, unhealthy lifestyles, and being a masculine activity. As the esports industry is intertwined with the video game industry due to intellectual property ownership, the stigmas of the video game industry are potentially problematic to the esports industry. Other potential stigmas, such as negative responses towards issues prevalent within esports, could impact the industry's social perception. The issues within esports that have been identified are match-fixing, doping, and the "esports winter". Using the theoretical framework of Organizational Stigma from Devers et al. (2009), this study will aim to answer the research question: "How do external audiences evaluate the organisational stigma of the esports industry in the United Kingdom?". The external audience sample will consist of the top news non-endemic media sources within the United Kingdom and will be evaluated using a qualitative thematic analysis. The data will cover three periods of esports history, "Fortnite Frenzy" (2018-2020), "COVID" (2020-2022), and "post-COVID" (2022-2024), determined by an earlier thematic review. This analysis also has led to determining the sample to be taken from social media posts through the years of 2018 – 2023, as consumer behaviour has shifted to consuming news media through social media. The study seeks to evaluate the stigmas affecting the esports industry within the United Kingdom from an external non-endemic population. Understanding the stigmatisation at the micro and meso levels can give an understanding of how to manage the current stigmas and help support the esports industry's further development and social acceptance through institutionalisation phases.

Making sense of bodies: Deconstructing the idealized body in esports toward inclusive and equitable practices

Tom Legierse

Various studies have shown the relevance of bodies in esports, highlighting the experiences of gendered and racialized players, as well as players with disabilities (Cullen 2018, Friman & Ruotsalainen 2022, Fletcher 2020, Riatti & Thiel 2023, Ripetta & Silvestri 2024). The current literature in esports hint at the existence of a very strong idealized physical, social and cultural body (e.g. Taylor 2021), but I argue that more work is needed in deconstructing this idealized body. Even though we know that inequalities in esports do not exist by chance but by design, we lack a thorough understanding of exactly how bodies become relevant and how this informs both the construction of identity and the construction of difference in esports spaces. Building on two months of ethnographic fieldwork with esports (semi-)professionals in Germany, to be conducted between July 2024 and September 2024, I will highlight on how people make sense of bodies in esports. The focus will be on esports (semi-)professionals who operate in both 'regular' competitive contexts and women and marginalized gender contexts. My methodology includes participant observation during (team) practice and competitive events, as well as in-depth interviews in which I elicit a thicker understanding of observational data. I will present preliminary findings (no full paper) that will deal with the contextual nature and plurality of gendered identity construction in esports. This includes an understanding of the processes in which people position themselves vis-a-vis others in various contexts, signifying and privileging some elements that they consider part of themselves over others. By highlighting how in different contexts bodies become relevant in different ways, I aim to deconstruct the idealized body within these esports contexts. Doing so will contribute to an understanding of the inequalities that fundamentally inform who can or cannot participate in competitive gaming contexts.

From circuit to franchise: A case study of the economic evolution of the North American League of Legends Championship Series

Parth Naidu, Peter Varga and Peter Varga

In the past decade, esports has experienced a monumental rise and a rapid decline, a turbulence comparable with investment cycles in other hot sectors. In this econometric case study analysis, we examine the financial progression of the competitive League of Legends scene in North America using both quantitative and qualitative data from key stakeholders in the ecosystem, including game developers, players, and esports organizations.

This case study draws inspiration from the Stages in the Bubble curve defined by Dr Jean-Paul Rodrigue. (Rodrigue, 2024) We analyze stakeholder revenues, organization valuations and player compensation details to illustrate how the evolution of the North American League of Legends Championship Series (NA LCS) shares many similarities across the 4 stages of a bubble (financial mania) - "stealth", "awareness", "mania", and "blow-off". We extend this analysis by investigating the effect of tournament viewership and sponsorship details as covariates of this curve as a way to discuss the deviation of valuation from the mean. Our sources include both publicly available data from financial databases and press releases, unstructured interview insights from key stakeholders including leadership from Riot Games and North American esports organizations, as well as notable professional players and player agencies.

The resemblance of the financial history of the NA LCS to Rodrigue's findings on economic mania suggests that the current challenges of the esports ecosystem ("esports winter") is a necessary correction following a period of excess investment. Based on the natural extension of the curve, it allows us to predict that once stabilized, esports as a whole will continue to grow in prominence driven by technological innovation and increasing societal acceptance over time. Our analysis and interpretation was conducted with the scope of providing a comprehensive economic understanding of the past, present, and future of esports, offering valuable insights for both industry stakeholders and scholars alike.

References

Rodrigue, J.-P. (2024). The Geography of Transport Systems (6th ed., Chapter 3). Routledge. https://doi.org/10.4324/9781003343196

Access & identification with esports by sex & gender identity

Kyle Nolla

Due to existing stereotypes of esports as masculine, esports players are likely to differ in their access to esports and their identification with esports based on their sex and gender identity. We used a mixed-methods approach to compare esports players (n = 192) by sex (nmale = 157, nfemale = 35), with exploratory analyses by gender identity; and, to compare esports players to a gamers who do not play esports (n = 157). Participants completed questionnaires and gave open-ended responses about (a) their social experiences surrounding gaming and (b) their identities.

Female esports players were less likely than male players to have access to and use a gaming console at home during childhood (access: $\chi^2(1, 161) = 4.8$, $R^2 = .04$, $p = .03$); use: ($\chi^2(1,161) = 12.5$, $R^2 = .09$, $p < .01$). Female participants were less likely to enter gaming through their friends (OR = 0.29 [0.11-0.67], $p < .01$). Female esports players were more likely to mention sexism (74% vs. 20%; $t(147) = -5.8$, $p < .01$) and active avoidance of multiplayer gaming due to toxicity (22% vs 3%; $t(147) = -3.6$, $p < .01$); male players were more likely to mention salt ($t(147) = 2.5$, $p = .01$). Female esports players had lower identification with their gender group than female non-esports gamers ($t(126) = -3.2$, $p < .01$). Male and female esports players did not differ in how strongly they identified as "a gamer", but female players were less likely to identify as an "esports competitor" ($F(1,191) = 7.1$, $p < .01$, $R^2 = .04$). Generally, gender identity was more predictive than sex of attitudes/identity, but not social experiences. Female esports players report less access to esports and higher disengagement due to perceived toxicity. Female esports competitors may experience identity conflict due to hyper-masculinity in esports.

The scope of relational frame theory in understanding performance behaviour

Tanuj Kohli

Relational Frame Theory (RFT), rooted in behaviour psychology, has the potential to explain performance behaviour through behavioural rather than cognitive processes (Hayes & Grundt, 1997; Leeming, 2016). The scope of RFT in performance psychology has not been previously explored, therefore, the objectives of the scoping review were to: 1) explore RFT processes underpinning performance behaviour 2) highlight gaps in third wave performance psychology research that RFT based research can help bridge; 3) understand methodological incompatibility with underlying philosophy is third wave psychology research and; 4) formulate a meaningful RFT based research question. A reflective thematic analysis on secondary data that included empirical and theoretical studies related to RFT, research into performance psychology and third wave approaches across domains, was conducted inductively (Braun, & Clarke, 2021). The scoping review identified seven themes: 1) scope for theoretical integration, 2) RFT based measurement tools, 3) RFT processes for performance, 4) directives for RFT research, 5) philosophically compatible research designs, 6) gaps in research that RFT can bridge and 7) understanding of RFT incompatible approaches. The findings highlighted that RFT processes of derived relational responding, reinforcement and rule governance can explain performance behaviour and that internal experiences are associated symptoms (Palm Reed et al., 2018; Smith et al., 2019). It can be posited that third wave performance psychology research has made little progress in understanding processes of change as hypothesis testing based on incompatible cognitive theories remain (Birrer et al., 2021). The key recommendations are to test RFT principles for performance behaviour and then test the efficacy of processes within third interventions and importantly the retention effects. This can provide detailed insight into the mediating processes of change for performance behaviour and a direction for future RFT studies in the performance domain.

Greening the game: A survey of environmental sustainability initiatives in esports and gaming

Julia Hiltscher

This presentation abstract outlines the forthcoming paper investigating the landscape of environmental sustainability within the esports and gaming industry.

The research aims to identify companies and alliances committed to mitigating climate change and explore the nature of their actions.

Notable examples include EA and Giants Gaming's practice of repurposing used furniture and Microsoft's Sustainable Development Kit. Additionally, attention will be given to initiatives like the Playing for the Planet alliance, spearheaded by the UNEP, which aims to unite game publishers in reducing their environmental footprint.

The methodology involves analyzing CSR reports, annual reports, and relevant literature to provide a comprehensive overview of current efforts. Specific attention will be paid to events such as GDC and Gamescom, where environmental sustainability practices are being increasingly integrated. The paper also seeks to identify existing clubs and alliances within the esports and gaming community that actively promote environmental sustainability.

Overall, this research aims to shed light on the status quo of environmental sustainability ambitions in esports and gaming, providing insights into current practices, challenges, and potential avenues for future improvement.

The qualification of professional esports players under the national labour law: The Japanese example

Tsubasa Shinohara and Daisuke Kobayashi

Professional esports players are often categorised as 'independent contractors.' They have faced unjust working conditions, including unpaid wages by their esports teams and organisations. In Europe, their legal status has been changed and gradually recognised as "employees". If they are qualified as "employees", esports teams hesitate to conclude a player contract with them because they must pay extra fees, such as social security fee. This potential consequence will be problematic for esports players because esports players cannot earn their livings through esports if they cannot obtain the contract. In this situation, the purpose of this article is to consider whether professional esports players should be qualified as 'employees' under the national labour law as a means to rectify the unfair and unethical working conditions. Furthermore, it will also examine whether the application of national labour law to esports players imposes a disproportionate effort or burden on esports teams and organisations to conclude the players' contract with professional esports players. To answer these questions, this article will provide a brief overview of some examples in France, Switzerland and the United States. On this basis, it will mainly consider the application of the Japanese labour law to esports players because Japan has not yet recognised professional esports players as 'employees' under the Japanese labour law. Through this consideration, this research will contribute to a clearer understanding of their legal status in Japan.

Effectiveness in esports: An integrative multilevel review

Christian Staedter and Sebastian Raetze

Esports have evolved from unorganized activities into hyper-competitive and professionalized settings. Esports share similarities with professional sports where individuals and teams strive for optimal performance. The purpose of our paper is to systematically review and integrate the fast-growing research on individual and team effectiveness in gaming and esports. To the best of our knowledge, we provide the first systematic review of research on gaming and esports effectiveness.

What are the individual, team, and organizational/environmental factors that are associated with effectiveness in gaming and esports?

Methodology: We leveraged a systematic literature review approach and conducted a structured keyword search in Web of Science, Google Scholar, and EBSCO. The sample was completed using forward-backward tracking. The resulting sample consists of 180 articles after full-text screening.

Within our full paper we will leverage the input-mediator-outcome-input (IMOI) model to synthesize the existing findings on the multilevel factors that shape individual and team effectiveness in gaming and esports. In doing so, we will integrate previous findings from across the individual, team, and organizational/environmental levels into outcomes (e.g., win/loss ratio and prize money winnings), mediators (e.g., team cohesion and communication), and inputs (e.g., individual athlete skills, team compositional variables). Building on our integration, we will discuss blind spots and contradicting findings within this model, and outline an agenda for future research.

Scholars can leverage our work by systematically targeting the identified blind spots and contradicting findings that exist within the literature. Practitioners will find value in focusing on factors shown to positively impact effectiveness within this setting.

Bridging esports and professional dynamics: Insights from the metaframe framework

Tobias M. Scholz, Pia Büßecker, Matthias Ruhland and Gian Luca Vitale

More and more people are playing video games, therefore, it becomes evident that there is a potential to utilize gaming and esports for the working world. Esports as a form of hybrid professional working environment offers a novel lens for examining talent dynamics across digital and traditional platforms. This paper presents and explains the metaframe framework, a unique model developed to integrate gaming and work personalities to enhance both individual and organizational performances. The research question central to this study is how can esports insights be transposed to professional settings to optimize personal and team performance? Our methodology encompassed a thorough review of existing personality frameworks, integration of esports competencies, and a meta-analysis of how these skills are valued in both gaming and professional contexts. We have applied this framework in diverse settings, iterating through case studies utilizing esports-based assessment centers.

Results reveal that esports players exhibit advanced strategic thinking, real-time decision-making, and teamwork, skills that are equally vital in professional environments. The metaframe framework categorizes these skills into two primary dimensions: Personal Mastery and Team Synergy. Personal Mastery refers to the continuous development of personal competencies crucial in navigating professional complexities. Team Synergy involves the amalgamation of individual skills to create a cohesive and effective team unit.

Implications of this research are multifaceted. For one, businesses can leverage this model to uncover hidden talents and foster a work environment that mirrors the dynamic and interactive nature of esports. Secondly, this integration aids in the development of training programs that enhance both individual and team performance. Finally, it offers a structured approach to understanding and utilizing the latent potential in the professional landscape, inspired by the competitive and strategic world of esports, thereby, highlighting the interdisciplinarity between esports and working world.

Relationship between esports performance and physical activity intervention

Oliver Szabella, Lili Kassay and Attila Szabo

Esports are associated with sedentary lifestyle, with the most influential factors in performance being the cognitive functions (Leis and Lautenbach, 2020; Ding et al., 2018). and time spent in game (Sanz-Matesanz és mtsai., 2023). There are also skill factors influencing perfomrance in game, like keyboard and mouse using skills, visual memory etc. (Sharpe és mtsai., 2023). Cognitive functions can be measured with an EEG device (Shou and Ding, 2013; Shen et al., 2008; Trejo et al., 2015; Chai et al., 2016) and can be affected with physical activity (American College of Sports Medicine, 2022). This experiment looked for the answer to whether physical activity intervention can prevent the deterioration of mechanical skills used through esports activity.

A group of 12 volunteer, nationally and internationally actuve male esports competitors of three esport titles participated in a multi-step study. We assessed their absolute VO2max capacity with Cosmed Omnia software and treadmill, Garmin HR monitor and "esport_test" protocol. After at least 1 hour of rest, fresh air, walking and eating, we performed a specific esport performance test. Throughout the test, the players had an EEG monitor on their head, which measured Alpha, Beta, Gamma, Theta and Delta brain waves with a response time of 1ms. The esport performance test consisted of skill assessments and a ranked game in the choosen esport title. They did the test 4 times each time with a different break protocol inbetween. Before the last we made the participants do 15 minutes of HIIT. All the data were recorded and then analysed.

The results of the measurement show that the physical activity intervention had a positive impact on the esport perfomance skills, not only did it stop the deterioration, but the result were better most of the time than right before the HIIT.

Based on the results of the series of tests carried out on a small sample, we assume that physical activity has effects on the mechanical skills needed in the game and on the brain wave graphs generated by the EEG, especially the low-spectrum (alpha, delta and theta) waves. We plan to repeat the research on a larger international sample of at least 100 people, with the same design as the current one.

Financial sustainability in esports through regulation:
Lessons from football

Cem Abanazir

Despite rapid and sustained growth in the last ten years, the esports industry entered an era where the financial health of esports organisers and teams is less than guaranteed. To address these concerns, Riot Games announced the introduction of regulations concerning team spending in LEC, the League of Legends league covering Europe, the Middle East, and Africa. The LEC Sporting Financial Regulations aim "[to] improve the long term (sic) economic and financial sustainability of the League and Teams in the LEC" and "[to] promote better competitive balance of the Teams in the LEC". Following the 2008-2009

Global Economic Crisis, UEFA–the quasi-monopolistic continental football federation in Europe–introduced its financial fair play regulations, which later evolved into financial sustainability norms. UEFA desired to protect clubs from bankruptcy by introducing strict norms. The regulations guide not only the clubs' spending but also their structure and governance. Member associations, such as the FA, introduced and implemented similar rules. The paper will explore the similarities between Riot Games and UEFA and the FA's approaches to financial sustainability. It will also underline the successes and failures of the latter two's regulation and adjudication of financial sustainability. The inconsistent application of rules, sparing some clubs but punishing others, has drawn criticism from the stakeholders and the public. The paper will argue that whereas the precarious position of esports within society requires some kind of regulation in its finances, without due consideration and care, the problems indicated above may appear in esports. The paper will conclude that financial sustainability regulations must be consistent and predictable. The paper will also conclude that even if Riot Games reach these goals, the fractured nature of esports governance and regulation means other competition organisers will have to go through the same path.

"It's not the be-all and end-all of life": An interview study on stressors and coping strategies among esport coaches

Oliver Leis, Michael G. Trotter, Dylan R. Poulus and Laura D. Swettenham

Coaches play a pivotal role in the development and retention of athletes, with sport psychology literature exploring the stressors and coping experiences of coaches. Yet, research focused on coaches experiences in esports is limited, hindering evidence-based practices and future research. Therefore, this study aims to explore stressors and coping strategies among esports coaches.

Adopting a critical realist perspective, semi-structured interviews were conducted with 15 coaches from diverse backgrounds (e.g., esports, experience, performance level). Beginning with a definition of stressors and coping, the interviews explore stressors ("In your role as a coach, what are the stressors you commonly encounter?") and coping strategies ("How do you try to deal with stress in your coaching role?") relating to coaching in esports. Data was analysed by two researchers using reflective thematic analysis, with another researcher acting as a critical friend and person to resolve potential disagreements.

Preliminary results from the analysis of transcriptions of interviews with 10 esports coaches demonstrate various stressors relating to performance (e.g., achievement pressure), team (e.g., negative player ego), organisation (e.g., multiple coaching roles), and personal life (e.g., balancing life commitments). When managing these stressors, coaches predominantly employed mastery coping (e.g., player communication, task delegation) and internal regulation (e.g., taking breaks, networking), and goal withdrawal strategies (e.g., behavioural disengagement).

To support coaches managing identified stressors, future interventions might involve improving communication skills and utilising mastery coping strategies. Regarding coaches' environment, interventions could focus on providing a better understanding of organizational and team dynamics, along with establishing support systems, particularly due to reported organizational stressors. Future research should adopt broader perspectives, such as stressor frequency, intensity and controllability, and coping effectiveness. Additionally, research could investigate the relationships between these factors and performance and wellbeing, while also accounting for interpersonal dynamics (e.g., communal coping).

A systematic review on stressors and coping strategies among esport players

Oliver Leis, Benjamin T. Sharpe, Vincent Pelikan, Julian Fritsch, Adam R. Nicholls and

Dylan R. Poulus

The expanding body of literature explores stressors and coping in esports that has utilised diverse methodologies (e.g., participant samples, data collection methods, and stressor/coping descriptions) poses a challenge for making meaningful comparisons and conclusions across studies. Acknowledging this heterogeneity, this synthesis offers an overview that a) captures the diversity of stressors and coping strategies, b) serves as a resource to guide, and c) informs future research and applied practice. Guided by the PRISMA guidelines and employing the SPIDER framework, this review synthesizes findings from 19 studies.

Performance stressors such as defeat and performance pressure were the most predominantly observed, followed by team, organizational, and personal stressors. Coping strategies, aligned with Nicholls et al. (2016), demonstrate internal regulation as the most frequently reported, followed by mastery coping, while goal withdrawal strategies. While this review demonstrates the association between stressors and other psychological constructs

(e.g., anger, sadness, sleep quality, burnout), and coping strategies with psychological factors (e.g., mental toughness, personality traits), there remains limited depth in understanding mediating and moderating factors.

Comparing esports to traditional sports highlights the role of stressors such as social media and equipment challenges in esports. However, personal stressors remain relatively unexplored. The review also identifies research gaps in stressor appraisal and communal coping strategies. Future research could delve into personal stressors, considering a wide array of psychological factors, and employing dynamic methodologies. Practical implications revolve around tailored interventions, promoting open communication, mastery coping techniques, and holistic well-being strategies. Overall, this review provides a broader understanding of esports stressors and coping strategies, offering a starting point for targeted interventions aimed at enhancing performance and well-being in esports.

Identification of legal risks within the video games and esports industry under international law

Tsubasa Shinohara

The video games and esports industry has been recognised as one of the major economic markets globally. For instance, the United States, China, Japan, and South Korea have cultivated gaming culture, leading to the establishment of several giant gaming companies such as Nintendo, Konami, Riot Games, Tencent and Epic Games. However, there has been insufficient legal study on the video games and esports industry to date. This research has recently begun and has accelerated due to the emergence of the esports industry, which organises competitive video game events.

In this context, the main purpose of this article is to explore how international law can help identify legal risks within the video games and esports industry through the application of international treaties and customary international law. This is because the video games and esports industry is global and multinational in nature and should therefore be regulated by a common standard applicable to the international community.

Furthermore, this industry principally deals with international trade in goods and services.

In this regard, international economic law, such as the General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS), can apply to this industry.

To achieve the main purpose, this article will address the following research questions: (1) What is the "video games and esports industry"?; (2) Which international law can apply to the video games and esports industry?; and (3) What legal risks can international law help mitigate or solve within the video games and esports industry? This research will serve to identify legal risks for the promotion of the video games and esports industry and to promote its sustainable development by mitigating or addressing these legal risks.

Harnessing commitment: The social dynamics of team-based esports

Tobias M. Scholz, Christopher Grieben and Nepomuk Nothelfer

The discourse surrounding video games often centers on their potential for addiction, a simplistic explanation for a complex phenomenon. However, it becomes evident that certain video games, particularly team-based esports titles, possess a unique ability to engage players more deeply than others and even surpass engagement levels in fields like corporate environments, education, and health.

In esports, especially within team-based titles, we observe that player commitment extends beyond individual engagement to encompass a strong bond with teammates. The substantial investments players make in these games are visible through their profiles, levels, points, items, skins, and most importantly, their standing in the community. This investment signifies a form of lock-in within the esports ecosystem, driven not only by the game's design but also by the social structures it fosters.

This presentation aims to analyze the commitment to specific games, communities, and teams, challenging the notion that games are merely more engaging due to immediate feedback mechanisms. While superior game design plays a role, additional factors warrant investigation.

These factors contribute to a social glue that binds players to the esports ecosystem.

By understanding these dynamics, we can explore how the principles applied in esports can be translated into other fields, such as health promotion, education, and corporate culture. The objective is to move beyond the perspective that video games are inherently addictive and instead focus on the strategies these games employ to create enduring social connections. These insights can be leveraged to enhance employee retention, educational engagement, and health maintenance in various sectors.

Ultimately, this research highlights how the social aspects of team-based esports can inform and inspire practices in non-gaming fields, fostering a deeper sense of community and commitment.

Where esports collides with the Olympic Movement: History, globalization, governance, and future trajectories

Seth E. Jenny and Nicolas Besombes

The transition from traditional to virtual sports is not just a passing trend but is the reflection of our modern digitized society. Esports, once a niche community, now commands a vast global audience and is often debated in terms of its recognition as a "sport" (Jenny et al., 2017). The discussion surrounding esports' inclusion within the Olympic Games continues to be a heated debate, which is often tied to the legitimacy of esports within society at-large (Miah, 2021; Parry, 2021). Furthermore, as video gaming becomes more ubiquitous, since 2018 the Olympic Movement has been presented with the opportunity and accompanying challenges of integrating video gaming, virtual sports, and esports (Lefebvre et al., 2024). Concurrently, many traditional sports are increasingly being augmented with digital and gaming simulations. Yet, as we proceed into the era of platformization, where digital platforms play an essential role in social structure, we must confront whether sports are meant to facilitate social cohesion and human development or simply a means for earning profit.

The purpose of this presentation, authored by one presenter from the United States and one from France, will explore the past, present, and future of esports' inclusion within the Olympic Movement. Specific topics to be addressed are:

- Defining and describing the varying terms the International Olympic Committee (IOC) has used in relation to video gaming, virtual sports, and esports.
- Presenting a timeline of significant events of esports' inclusion within the Olympic Movement.
- Analyzing the barriers to esports adoption in the Olympic Games
- Evaluating the benefits of adopting esports and virtual sports in the Olympic Movement for both the esports industry and the IOC.
- Making predictions for the future of esports within the Olympic Movement.

Overall, this presentation will highlight several conference themes, including globalization, interculturality, governance, and the evolution of esports. Attendees will understand the historical developments and key issues surrounding esports in the Olympic Games.

References

Jenny, S. E., Manning, R. D., Keiper, M. C., & Olrich, T. W. (2017). Virtual(ly) athletes: Where eSports fit within the definition of "sport". *Quest*, *69*(1), 1-18. https://doi.org/10.1080/00336297.2016.1144517

Lefebvre, F., Besombes, N., & Chanavat, N. (2024). Analysis of the interactions among core stakeholders of the Olympic media ecosystem: conditions for a value creation proposition of the Olympic Virtual Series. *Journal of Media Business Studies*, 1–24. https://doi.org/10.1080/16522354.2024.2335710

Miah, A. (2021). The esports question for the Olympic Movement. *Journal of Olympic Studies*. https://olympicstudies.org/the-esports-question

Parry, J. (2021, January 9). Esports will not be at the Olympics. *Journal of Olympic Studies*. https://olympicstudies.org/esports-will-not-be-at-the-olympics

Chatlog analyst: Leveraging LLMs for preliminary big data analysis in esports environments

Tony Bergholtz, Alan Akandzhi and Tobias M. Scholz

The burgeoning field of big data analysis often encounters the challenge of identifying preliminary insights efficiently, particularly in dynamically evolving domains such as esports. This paper introduces the "Chatlog Analyst," an innovative approach utilizing a large language model (LLM) like ChatGPT for the pre-analysis of vast datasets to unearth potential correlations and interactions swiftly. The research question investigates whether a LLM can serve as an effective tool for the initial exploration of big data, providing a quicker alternative to traditional methods for identifying relevant insights.

Our methodology integrates the use of ChatGPT, tailored as an esports-specific LLM, to perform a rapid, preliminary analysis of a Twitch chat dataset from the Blast Major in Paris 2023. The model's design incorporates specialized training on esports terminology and contextual understanding to enhance its relevance and accuracy. By analyzing chat logs, the Chatlog Analyst aims to pinpoint areas of interest and potential research questions without the depth of a full statistical analysis.

First results indicate that the LLM can successfully identify key themes and potential correlations within the data, acting as a heuristic tool to guide further detailed investigations.

This approach significantly reduces the time and resources required to sift through large datasets by focusing subsequent analyses on the most promising leads.

Implications of this study are significant for big data analytics in esports and other fields requiring rapid data assessment. By integrating LLMs like ChatGPT early in the analytical process, researchers and analysts can prioritize their efforts more effectively, ensuring that comprehensive statistical analyses are reserved for the most impactful insights. Additionally, this method proposes a study design where the Chatlog Analyst serves as a pre-test mechanism, enhancing the efficiency of traditional data analysis workflows.

Homemade: Gaming houses as prosuming hubs inside the esports ecosystem

Alessandro Franzó

In our "ludic century" (Zimmerman & Chaplin, 2013) the boundaries between play and production are becoming more and more porous (Johnson & Woodcock, 2021). If the sportification of competitive gaming (Heere, 2018; Pargman & Svensson, 2019) opened for gamers new career prospects, either as professionals or content producers; it also took to extremes the "prosuming" perspective already creeping within the gaming ecosystem (Abend et al., 2019; Ritzer & Jurgenson, 2010). This full paper will aim to tackle such a concoction of work and play by analysing one of the most peculiar spaces behind esports' "produsages" (Bruns, 2008), i.e., gaming houses. These structures, where professional players gather to live and play together, materially anchor competitive gaming to a place and constitute an adaptable model able to respond to different needs, thus representing the local and material backbone of the global esports ecosystem.

Based on a rich archive of qualitative data gathered through "quick and dirt" ethnographic methods (Hughes et al., 1995; Pink & Morgan, 2013), this paper will unpack how these prosuming hubs are composed, administered, and lived by their inhabitants. Firsthand observations and informal interviews will highlight how the households' digital, material, and social elements concur in generating a unique environment that allegedly composes the inescapable breeding ground for esports professionalisation.

Then, the entanglement of gaming houses' socio-material assemblage with their produsing strategies, playbour practices, and users' engagement will be analysed by comparing with digital platforms functioning (Nieborg & Poell, 2018; Poell et al., 2019), as gaming houses shape gamers' identities and productive practices through encoding, aggregating, and computing processes (Alaimo et al., 2020).

Gaming houses shuffle up the work-play divide by relying on a shapeshifting assemblage of digital technologies, architectures, and social structures. In so doing, they also abruptly revolutionise how we understand work and production.

References

Abend, P., Fizek, S., Fuchs, M., & Wenz, K. (2019). Introduction: The Boundaries of Play. Digital Culture & Society, 5(2), 5–12. https://doi.org/10.14361/dcs-2019-0202

Alaimo, C., Kallinikos, J., & Valderrama, E. (2020). Platforms as service ecosystems: Lessons from social media. Journal of Information Technology, 35(1), 25–48. https://doi.org/10.1177/0268396219881462

Bruns, A. (2008). Blogs, Wikipedia, Second Life, and Beyond: From Production to Produsage. Peter Lang.

Heere, B. (2018). Embracing the sportification of society: Defining e-sports through a poly-morphic view on sport. Sport Management Review, 21(1), 21–24. https://doi.org/10.1016/j.smr.2017.07.002

Hughes, J., King, V., Rodden, T., & Andersen, H. (1995). The role of ethnography in interactive systems design. Interactions, 2(2), 56–65. https://doi.org/10.1145/205350.205358

Johnson, M. R., & Woodcock, J. (2021). Work, play, and precariousness: An overview of the labour ecosystem of esports. Media, Culture & Society, 43(8), 1449–1465. https://doi.org/10.1177/01634437211011555

Nieborg, D., & Poell, T. (2018). The platformization of cultural production: Theorizing the contingent cultural commodity. New Media & Society, 20(11), 4275–4292. https://doi.org/10.1177/1461444818769694

Pargman, D., & Svensson, D. (2019). Play as Work: On the Sportification of Computer Games. Digital Culture & Society, 5(2), 15–40. https://doi.org/10.14361/dcs-2019-0203

Pink, S., & Morgan, J. (2013). Short-Term Ethnography: Intense Routes to Knowing. Symbolic Interaction, 36(3), 351–361. https://doi.org/10.1002/symb.66

Poell, T., Nieborg, D., & van Dijck, J. (2019). Platformisation. Internet Policy Review, 8(4), 1–13. https://doi.org/10.14763/2019.4.1425

Ritzer, G., & Jurgenson, N. (2010). Production, Consumption, Prosumption: The nature of cap-italism in the age of the digital 'prosumer'. Journal of Consumer Culture, 10(1), 13–36. https://doi.org/10.1177/1469540509354673

Zimmerman, E., & Chaplin, H. (2013, September 9). Manifesto: The 21st Century Will Be Defined By Games. Kotaku. https://kotaku.com/manifesto-the-21st-century-will-bedefined-by-games-1275355204

Updating playbour: A look into blurred work/play practices and why they matter

Arianna Boldi and Alessandro Franzó

The recent pandemic spurred a "Great Resignation" (Gulati, 2022) from traditional jobs and, at the same time, pushed entertainment industries like gaming to skyrocket (e.g., Fakazli, 2020). Although the relationship between mass dismissals and video games may seem incidental, we will explore how these phenomena may both hint at playbour as the rising paradigm for finding one's purpose in life.

Thanks to an extensive analysis of 30 semi-structured interviews, our work will dissect the relationship between play and labour for those involved in professional(ised) gaming. The qualitative analysis of the data, conducted following the IPA approach (Eatough & Smith, 2017), allowed us to critically appraise the rich insiders' experiences to update the concept of playbour (Kücklich, 2005) and describe gaming's prosuming practices (Fuchs, 2014; Ritzer & Jurgenson, 2010).

Albeit taunted by the ghost of post-capitalistic (self-)exploitation (McCutcheon & Hitchens, 2020; Terranova, 2012; Woodcock & Johnson, 2018), professional gaming practices reveal a craving for purpose, chased through pleasure-oriented and aspirational activities (Duffy, 2017; Johnson & Woodcock, 2021). Esports playbourers seem caught in a clash of meanings, finding it difficult to orient themselves between the older notions of play and work and their need for social recognition and personal satisfaction.

Transcending both the "playful work" happening in contemporary gamified workplaces and the "laborious play" taking place inside gaming workified environments (Abend et al., 2019, 2021), this work takes the insiders' point of view as the main guiding light in interpreting the data. In so doing, we frame esports and professional gaming as practices that stand at the forefront of a broader movement aimed at disrupting the standard view of work (Frayne, 2015), pushing for a hybrid "work-life gameplay" that restores agency and purpose to the "alienated' gamers inhabiting our global gamespace (Wark, 2007; Woodcock, 2019).

References

Abend, P., Fizek, S., Fuchs, M., & Wenz, K. (2019). Introduction: The Boundaries of Play. Digital Culture & Society, 5(2), 5–12. https://doi.org/10.14361/dcs-2019-0202

Abend, P., Fuchs, M., & Wenz, K. (2021). Introduction: Playful Work. Digital Culture & Society, 7(1), 5–14. https://doi.org/10.14361/dcs-2021-0102

Duffy, B. E. (2017). (Not) Getting Paid to Do What You Love (Hardcover). Yale University Press. https://yalebooks.yale.edu/9780300264753/not-getting-paid-to-do-what-youlove

Eatough, V., & Smith, J. A. (2017). Interpretative Phenomenological Analysis. In The SAGE Handbook of Qualitative Research in Psychology. Sage Publications.

Fakazli, A. E. (2020). The Effect of Covid-19 Pandemic on Digital Games and eSports. International Journal of Sport Culture and Science, 8(4), Article 4. https://dergipark.org.tr/en/pub/intjscs/issue/58211/771381

Frayne, D. (2015). The Refusal of Work: The Theory and Practice of Resistance to Work. Bloomsbury Publishing.

Fuchs, C. (2014). Digital prosumption labour on social media in the context of the capitalist regime of time. Time & Society, 23(1), 97–123. https://doi.org/10.1177/0961463X13502117

Gulati, R. (2022, March 22). The Great Resignation or the Great Rethink? Harvard Business Review. https://hbr.org/2022/03/the-great-resignation-or-the-great-rethink

Johnson, M. R., & Woodcock, J. (2021). Work, play, and precariousness: An overview of the labour ecosystem of esports. Media, Culture & Society, 43(8), 1449–1465. https://doi.org/10.1177/01634437211011555

Kücklich, J. (2005). Precarious Playbour: Modders and the Digital Games Industry. The Fibreculture Journal, 5. https://five.fibreculturejournal.org/fcj-025-precariousplaybour-modders-and-the-digital-games-industry/

McCutcheon, C., & Hitchens, M. (2020). eSport and the exploitation of digital labour. Journal of Fandom Studies, The, 8(1), 65–81. https://doi.org/10.1386/jfs_00010_1

Ritzer, G., & Jurgenson, N. (2010). Production, Consumption, Prosumption: The nature of capitalism in the age of the digital 'prosumer'. Journal of Consumer Culture, 10(1), 13–36. https://doi.org/10.1177/1469540509354673

Terranova, T. (2012). Free Labor. In Digital Labor: The Internet as Playground and Factory. Routledge.

Wark, M. (2007). Gamer theory. Harvard University Press.

Woodcock, J. (2019). Marx at the Arcade: Consoles, Controllers, and Class Struggle. Haymarket Books.

Woodcock, J., & Johnson, M. R. (2018). Gamification: What it is, and how to fight it. The Sociological Review, 66(3), 542–558. https://doi.org/10.1177/0038026117728620

Esports in a cultural collision: Examining the rise of esports organizations in the MENA region

Mohammed Mohammed, Mikko Merilainen and Lobna Hassan

This study contributes to the under-explored field of esports in the Middle East and North Africa (MENA) region by examining esports within the unique cultural context of MENA and exploring how the esports world differs from other regions. Ra'ad, a prominent Egyptian esports organization, serves as a case study to delve into the strategic decision-making and operational practices that contribute to a team's sustainability and growth. The research question guiding this study is: What are the key factors that contribute to the success of an esports team in the MENA region?

A qualitative research methodology will be employed, involving semi-structured interviews with key stakeholders within Ra'ad, including team management, coaches, and players. Thematic analysis will be conducted on the interview data to identify recurring themes and patterns associated with Ra'ad's success. Additionally, secondary data from industry reports and news articles will be used to contextualize the findings within the broader MENA esports landscape. This research goes beyond offering practical recommendations for establishing and managing a thriving esports team in the MENA region. While a full paper will delve into these practical recommendations, the core objective lies in significantly expanding the limited body of research on esports in the MENA region. By examining the case of Ra'ad, this analysis will shed light on how esports organizations navigate this complex cultural landscape, where the world of esports in this region collides with traditional views of gaming as a waste of time or leisure activity and establishes a new path for successful businesses like Ra'ad. Ultimately, this research will contribute valuable insights to the growing body of esports, informing future studies on the global landscape of esports.

Sitting for success: A randomized controlled study comparing chair design on video gamer muscle stiffness and performance

Joanne DiFrancisco-Donoghue, Hallie Zwibel and William G Werner

This study evaluated the effects of an Aeron office chair and a commercial gaming chair (GC) on muscle stiffness (MS), performance, and perceptions during a 2-hour gaming session among esports gamers. Conducted as a mixed-methods, randomized, controlled trial in a collegiate esports arena, the study involved thirty-three esports gamers (age 23±4.9) who met the inclusion criteria of being 18 years or older and regular players of League of Legends, without any current musculoskeletal injuries. Participants played in two separate 2-hour sessions, with MS measured via oscillation frequency. The study recorded subjective evaluations, in-game statistics, and player perceptions. Results indicated a significant reduction in MS in the upper trapezius on the left side in the GC group compared to the Aeron chair (P=.03). However, no significant differences were observed in the right-side measurements across four muscles. Notably, the GC was associated with lower MS in the thoracic and lumbar regions and was preferred by 58% of the participants. Performance improved in the GC, with players winning 25% more games and achieving 15% more kills. The findings suggest that the GC may offer superior benefits regarding reduced muscle stiffness and enhanced gaming performance.

How could they win? Redefining win prediction for esport narratives

Alan Pedrassoli Chitayat

Win prediction in esports is a well understood topic that has been explored in Machine Learning (ML) literature (Semenov et al., 2017; Makarov et al. 2018) and implemented directly into games, as depicted in Figure 1.

Figure 1a: Dota Plus win probability graph in the in-game client

Figure 1b: Example of 3rd party as available in commercialised win prediction graph (Weavr companion app)

Figure 1: Examples of win prediction graphs available for Dota 2 - a popular esport title.

However, the output of such models offer limiting insights to more experienced users (Wang 2023), such as expert commentators. This could be due to the way in which such models are designed. As they are often continuously updated to reflect the current state of the game, the prediction outlines the current team that is ahead, without knowledge of future game events that may happen. This, consequently can lead to sharp shifts in the graph, as demonstrated in Figure 1a, which could have an impact in user trust (Hodge et al. 2019).

Furthermore, such models typically have hidden inner workings, which forces ad-hoc interpretations to build narratives. However, predictions may not always match user expectation, which can lead to a jarring and limiting utilisation (Yang et al. 2022). This talk (not accompanied by a full paper) proposes a new way to approach win prediction, by inverting traditional predictions and instead focusing on existing broadcasting narratives. Firstly, a set of narrative features were extracted through Content Analysis from existing esport broadcasts. These reflect how commentators express expectations for match outcomes, and are used to train a ML Win Condition system.

While a traditional win prediction system uses the game state to predict the winner, the win condition system uses the winner to predict the game state. This is made possible through an

exploration system designed to match broadcaster needs to enhance existing narratives and facilitate storytelling. The system provides opportunities for broadcasters to explore (and answer) "what if" questions prior to the game start, and defines "How could they win?" rather than who will win.

References

Hodge, V. J., Devlin, S., Sephton, N., Block, F., Cowling, P. I., & Drachen, A. (2019). Win prediction in multiplayer esports: Live professional match prediction. IEEE Transactions on Games, 13(4), 368-379.

Makarov, I., Savostyanov, D., Litvyakov, B., & Ignatov, D. I. (2018). Predicting winning team and probabilistic ratings in "Dota 2" and "Counter-Strike: Global Offensive" video games. In Analysis of Images, Social Networks and Texts: 6th International Conference, AIST 2017, Moscow, Russia, July 27–29, 2017, Revised Selected Papers 6 (pp. 183-196). Springer International Publishing.

Semenov, A., Romov, P., Korolev, S., Yashkov, D., & Neklyudov, K. (2017). Performance of machine learning algorithms in predicting game outcome from drafts in dota 2. In Analysis of

Images, Social Networks and Texts: 5th International Conference, AIST 2016, Yekaterinburg, Russia, April 7-9, 2016, Revised Selected Papers 5 (pp. 26-37). Springer International Publishing.

Wang, M. (2023). The Communication Effectiveness of AI Win Prediction Applied in Esports Live Streaming: A Pilot Study. In International Conference on Computer-Human Interaction Research and Applications (pp. 315-325). Cham: Springer Nature Switzerland.

Yang, Z., Pan, Z., Wang, Y., Cai, D., Shi, S., Huang, S. L., ... & Liu, X. (2022). Interpretable real-time win prediction for honor of kings—a popular mobile MOBA esport. IEEE Transactions on Games, 14(4), 589-597.

Knowledge agenda esports: Performance enhancement (The Netherlands)

Dion Bulkens and Willem-Paul Wiertz

Esports, (semi-)professional competitive gaming, requires top performance [1]. Although esports has not been recognised as an elite sport in the Netherlands [2], the niche is evolving into a professional sports environment. Knowledge helps coaches and staff make well-considered choices to influence esports performance. There is lacking scientific evidence in almost all esports performance indicators. There is a need by researchers and esports coaches and staff for a Knowledge Agenda as a starting point for knowledge exchange about esports performance.

The Knowledge Agenda is created in four steps. The first step was to determine the relevance of a Knowledge Agenda Esports by suggesting it to stakeholders in science and practice. The second step was to determine what the most important themes relating to esports performance are. Topsport Topics (Dutch scientific traditionals sports performance specialists) made an overview of the most important performance indicators in traditional elite sports. These indicators were sent to 25 esports coaches and 5 scientists for consultation in focus group sessions and a survey. In the third step the coaches added their questions and prioritized the indicators. The last step was looking into the scientific evidence of these five indicators.

Based on the coaches' insights, the respondents selected the top-five indicators on which the Knowledge Agenda Esports: Performance Enhancement is based: coaching styles, training programmes and methods, talent recognition and development, performing under pressure, and sleep/wake cycle and recovery. Every indicator contains the most important questions from esports coaches.

Discussion/ImplicationsThis Knowledge Agenda contains questions, structured and translated for science, providing the latter with practical insights for relevant research. This gives researchers a starting point for their research and an overview of the most important questions from esportscoaches. Above all, this agenda provided a connection between Dutch esports coaches itself and structural knowledge exchange with scientists.

References

Hoyng J, Steenbergen J, IJzerman H & Bulkens D. Ebook esports: een introductie voor beleid, onderzoek en praktijk. Kenniscentrum Sport & Bewegen; 2022.

NOC*NSF. Lijst Topsport- en Internationale wedstrijdsport disciplines 2021 - 2024; 2021.

Esport and the play-game-sport continuum: Updating the model

Chris McCutcheon, Michael Hitchens and Mitchell McEwan

Esports are an emerging topic of study and interest both to the academy and the wider world given the rapid growth in both interest and funding of esports competitions and teams that has been seen over the past few years. There are many definitional approaches proposed for esports, however these tend to be essentialistic and do not properly account for the differences esports and traditional sport, and how esports participants engage with and interact with esports, and the degree of interaction.

This paper examines categories of esports engagement and introduces an updated and reimagined version of the play-games-sport continuum using play, leisure and work as nonbinary or non-opposed factors. This updated play-leisure-work model, expands the X axis to include five foundations divided into two categories; actions/entities (consisting of games and sport) and attitudes/states (consisting of play, leisure and work). In doing so the new play-leisure-work model bypasses the strictures of a stipulated and essentialistic definitional approach to sport and assists in the understanding of how those who participate in esports do so, from a non-essentialistic point of view.

B|Orders in Motion

Thorsten Zippan

The real world, a system which was not created by Unity or Unreal Engine, and the esports world, often created by these tools, used to have lots of borders in the past. Where these systems collided, interesting phenomena took place, and borders became in motion. The border between the 'real world' and the esports world used to be durable and became more and more permeable. Current and future developments show an overlapping area, where borders between esports and 'real world' do not strictly separate the two spaces (liminality). They furthermore create a new world, which could be seen as a real metaverse. Esports presents a tangible use case for the metaverse, and therefore, it is crucial that we pay attention to its developments and implications.

Borders are typically seen in a territorial-legal context. Schiffauer et al. (2018) worked out, that borders should be defined and conceptualized as an interdisciplinary subject that is located on geographical, temporal, social, and cultural levels with three different states: durability, permeability and liminality.

In my presentation I examine the process of the Walt Disney company investing 1.5 billion US-Dollars into EPIC Games, the developer of Fortnite, in order to create a new kind of authentic Disney World in the esports competition-based world of Fortnite with the Unreal Engine. I will put these empirics in the context of the intersections from Schiffauer et al. (2018) to show that borders must be seen as an interdisciplinary context with different states. Although still a work in progress, it is important to highlight that Fortnite has successfully demonstrated elements of the metaverse by actively dissolving the borders of digital and real-world (permeability) and creating a new one (liminality): The implementation of Star Wars in the Fortnite Universe in the beginning of May let the players actively fight against Darth Vader, play songs together with cantina band or unlock Anakin's Podracer Decal by solving May the Fourth Quests.

References:

Schiffauer, W., Koch, J., Reckwitz, A., Schoor, K., & Krämer, H. (2018). Borders in Motion: Durabilität, Permeabilität, Liminalität. In Working Paper Series B/ORDERS IN MOTION (Nr. 1). Viadrina. https://opus4.kobv.de/opus4euv/frontdoor/deliver/index/docId/311/file/Working-Paper-B-ORDERS-1.pdf

Predictive analytics for League of Legends: A deep learning approach for identifying critical in-game performance metrics

Fazilat Hojaji, Adam J. Toth, Mark J. Campbell

The rapid growth of esports has led to an increasing demand for data-driven insights to enhance player and team performance. Among the various analytical tools available, Deep Neural Networks (DNNs) have emerged as a crucial component in esports analysis. These models provide the capability to process vast amounts of data, identify complex patterns, and make accurate predictions. The popular Multiplayer Online Battle Arena (MOBA) game League of Legends (LoL) is an ideal candidate for deep learning analysis due to the availability of an online repository containing data from millions of matches. The purpose of this study was to use DNNs to identify in-match metrics predicting match outcomes and in-game player metrics accurately forecasting player ranks in LoL.

By leveraging the Riot API, which provides access to extensive in-game data, we have compiled a comprehensive dataset from 150,100 LoL matches involving match statistics and player actions from five different ranks. DNN models were developed to identify performance and rank indicators, along with the SHAP (SHapley Additive exPlanations) method to interpret and explain model predictions.

The study demonstrates the superior prediction performance of deep learning models, with accuracy rates exceeding 90%. We found champExperience difference, damageDealtToObjectives, damageDealtToTurrets, and totalHeal to be the most important ingame metrics. Furthermore, the analysis reveals that totalTimeCCDealt, totalMinionsKilled, KDA and visionScore are among the most influential performance indicators in determining the success of a player.

The findings of this study have the potential to enhance decision-making processes, improve gameplay strategies, and ultimately improve the competitive performance of players and teams in League of Legends. The culmination of this effort promises valuable insights into the gaming environment, paving the way for its widespread adoption and further exploration in the realm of competitive gaming and esports analytics.

A multidisciplinary approach of esports performance in professional LoL players

Clément Thillier, Nicolas Besombes, Nounagnon Frutueux, Agbangla and Damien Vitiello

In the context of esports, performance can be described as a complex combination of physiological, neurocognitive, and psychosocial factors.

Cognitive functions such as task switching, information processing, selective attention, memory and inhibition have been identified as integral parts of esports performance (Toth et al., 2020). Similarly, physical and mental preparation (Pedraza-Ramirez et al., 2020) and lifestyle management (Trotter et al., 2020) are now recognized as essential elements in enhancing performance. While some studies have examined the effects of physical training on amateur esports players, none have investigated the combined effects of physical and cognitive training on professional players, nor have considered the social repercussions of such training.

The study aims at examining and comparing the effects of chronic High Intensity Interval Training (HIIT) and cognitive-motor training on esports professional players' performance. To achieve this objective, a holistic approach, evaluates the participants' cognition, physical, and motor ability, in addition to social factors and the repercussions on competitive performance.

Five professional esports players participated in the study. All players were engaged in international competitive League of Legends (LoL) game. The subjects were divided into 2 groups and underwent cognitive, physical, and motor tests. Players were subjected to a chronic HIIT and cognitive-motor training protocol conducted in a single-case experimental design (SCED). The chronic HIIT intervention involved 20-minute circuit training sessions twice a week, while the chronic cognitive-motor intervention consisted of six 3-minute dual-task exercises. Social aspects were evaluated through the subjects' self-reported pleasure after each session and through semi-structured interviews in which the subjects were asked about their perceptions of their performance and the impact of the training on their performance.

Initial analyses indicate that physical training had an impact on cardiovascular function in relation to specific cognitive functions. It is anticipated that chronic training will improve cognitive capacity. Furthermore, the successive combination of HIIT and cognitive-motor training is expected to result in a more significant improvement in performance.

References

De Las Heras, B., Li, O., Rodrigues, L., Nepveu, J.-F., & Roig, M. (2020). Exercise Improves Video Game Performance—A Win–Win Situation. Medicine & Science in Sports & Exercise, 52(7), 1595-1602. https://doi.org/10.1249/MSS.0000000000002277

Demirakca, T., Cardinale, V., Dehn, S., Ruf, M., & Ende, G. (2016). The Exercising Brain : Changes in Functional Connectivity Induced by an Integrated Multimodal Cognitive and Whole-Body Coordination Training. Neural Plasticity, 2016. https://doi.org/10.1155/2016/8240894

Lauenroth, A., Ioannidis, A. E., & Teichmann, B. (2016). Influence of combined physical and cognitive training on cognition : A systematic review. BMC Geriatrics, 16, 141. https://doi.org/10.1186/s12877-016-0315-1

Pedraza-Ramirez, I., Musculus, L., Raab, M., & Laborde, S. (2020). Setting the scientific stage for esports psychology: A systematic review. International Review of Sport and Exercise Psychology, 13(1), 319–352. https://doi.org/10.1080/1750984X.2020.1723122

Toth, A. J., Ramsbottom, N., Kowal, M., & Campbell, M. J. (2020). Converging Evidence Supporting the Cognitive Link between Exercise and Esport Performance : A Dual Systematic Review. Brain Sciences, 10(11). https://doi.org/10.3390/brainsci10110859

Trotter, M.G., Coulter, T.J., Davis, P.A., Poulus, D.R., & Polman, R. (2020). The association between esports participation, health and physical activity behaviour. International Journal of Environmental Research and Public Health, 17(19), Article 7329. https://doi.org/10. 3390/ijerph17197329

Esports towns in China: Business strategy analysis

Zhengyang Li, Qi Peng and Nicolas Scelles

Since 2016, seven esports towns have been completed by local governments in China, with differing levels of success. Business strategy could be a determining success or failure factor. Hence, this study aims to explore the influence of business ecological strategies on the sustainable development of esports towns in China, focusing on two extreme cases, Hangzhou and Zhongxian. The objectives are twofold: (1) to delineate the business ecological strategies for esports town development in Hangzhou and Zhongxian, and (2) to evaluate the impact of different business strategies on the sustainable growth of esports towns.

Hangzhou and Zhongxian serve as two extreme cases. Qualitative data on the business strategies of esports towns in these locations were gathered via semi-structured interviews with 20 experts, including policymakers, entrepreneurs, investors, and executives.

Subsequently, thematic analysis was employed to analyze the data.

Hangzhou's esports town adopted a dominator strategy, whereas Zhongxian opted for a keystone strategy. The keystone strategy proves more advantageous than the dominator strategy. Firstly, Zhongxian's keystone strategy establishes a reliable platform at the core, promoting stability for other ecosystem participants. Secondly, this strategy enhances the ecosystem's resilience during crises by fostering both direct and indirect changes. Conversely, Hangzhou's dominator strategy diminishes the diversity of its esports town's business ecosystem, rendering it less adaptable to change and therefore more prone to instability.

This study suggest that keystone strategies may be more advantageous than dominator strategies in China's esports towns. Keystone strategies foster long-term innovation and niche creation within the ecosystem, offering a more effective and sustainable approach for leading organizations. While dominator strategies may yield exceptional short-term returns, they risk eventual ecosystem collapse. Notably, this study represents the first comprehensive analysis of esports towns' sustainability in China from a business strategy perspective, offering valuable insights for policymakers and executives.

Mind the gap: Exploring wellbeing, mental techniques and relationships in esports vs. sports coaching

Joanna Znosko, Zuzanna Hejduk-Mostowy and Dominika Wilczyńska

Applying mental techniques, similar to those in traditional sports, correlates with improved performance and well-being in esports (Poulus et al., 2020; Poulus et al., 2021) suggesting a valuable transfer of practices from traditional sports to esports, especially given the crucial role of coaches and often limited staffing resources in esports.Therefore the aim of the study was to compare the utilization of mental techniques, levels of well-being, and coach-athlete relationship between esports and sports coaches.

The study included 15 professional esports coaches and 15 sports coaches (representing individual and team sports). Online questionnaires were used to assess psychological well-being (Flourishing Scale), mental technique utilization (SMTQ), and coach-athlete relationships (PICART-Q – Coach).

The results indicate several significant differences in the aspects of psychological well-being, selected mental techniques such as imaginations and self-talk as well as dimensions of coach-athlete relationship such as closeness, commitment and complementarity.

The findings underscore the necessity of mental technique integration in esports coaching and coaches development related to psychological aspects of performance. Furthermore, enhancing coach well-being and skill sets can optimize esports coaching effectiveness and performance, along with protecting coaches and athletes from affective disorders and burnout.

References:

Poulus, D., Coulter, T. J., Trotter, M. G., & Polman, R. (2020). Stress and coping in esports and the influence of mental toughness. Frontiers in Psychology, 11, 628.

Poulus, D., Coulter, T., Trotter, M., & Polman, R. (2021). A qualitative analysis of the perceived determinants of success in professional esports athletes. Frontiers in Psychology, 11, 628.

The psychophysiological outcomes of elite League of Legends players during practice and competition

Craig McNulty, Mitchell Nicholson, Dylan Poulus, Remco Polman and Vincent Kelly

Recent calls by esports researchers and practitioners urge the development of practices to ensure industry sustainability, addressing concerns about regulation, safeguarding, and e'athlete health. Notably, e'athlete burnout, injury, and early retirement are prevalent, highlighting the need to understand the physiological and psychological impacts of elite-level esports. This study aimed to investigate these impacts in elite League of Legends players.

Participants were male and female e'athletes aged 17 or older from the League of Legends Circuit Oceania (LCO) and the Australian intervarsity League. Exclusion criteria included known cardiovascular or respiratory diseases or medications affecting cardiovascular or autonomic functions. Physiological measures included heart rate, heart rate variability (RMSSD, pNN50, LF, LF/HF), and ventilation (minute ventilation, breathing rate). Psychological measures assessed mental toughness, stress, perceived exertion, resilience, and burnout. Participants were randomly assigned to two groups: one group played a practice scrim followed by a competition match on separate days, while the other group did the opposite. The order of conditions was counterbalanced. Participants wore the Hexoskin vest, which monitors physiological parameters including heart rate and ventilation. Rest measures were taken at least two days before any play, involving 30 minutes of data collection in a temperature-controlled room. On practice or competition days, baseline data were collected during 20 minutes of sitting, followed by continuous data collection from the start of the match to 10 minutes post-game.

Results: Data collection is currently ongoing (March 2024 – November 2024). It is expected that data collection will be completed, or near-completed ready for ERN2024. All collected data by October 2024 will be processed and analysed for presentation of results during the conference.

Results may provide insights into the physiological and psychological demands on e'athletes during practice and competition, informing training structures, competition schedules, and intervention plans to enhance e'athlete health and career longevity.

More than a game changer: Artificial intelligence in esports

Lidija T. Petrović, Siniša Jasnić and Gerald Fritz

The esports is strengthening its position as a major sport in the digital era with augmenting viewership, considerable financial resources from sponsorships and media rights, and a growing presence in many countries throughout the world. According to a number of estimations of different consulting companies doing business in the sport business area, esports is the booming market with revenues that are expected to reach $1.87 billion in 2025. Among the many technological innovations that contribute to eSports, Artificial Intelligence (hereinafter AI) is widely seen as having the potential to bring about significant revenue opportunities in the ongoing decade.

The authors have conducted qualitative contextual research to identify and better understand how the eSports industry continues to encounter transformation through the exploration of AI in practical applications and the streamlining of processes. In the online esports space, according to the authors' research, the impacts of AI in eSports can be seen twofold, as: (i) the current impacts of AI in eSports (revolutionising the player experience, improving gameplay analysis - gameplay optimisation, tournament organisation and player engagement, provide valuable insights for sponsors, streamline betting and wagering processes, be used for player performance evaluation, for AI-generated content to increase fan engagement, ingame assistance, detect cheating, gameplay simulations, etc.) and (ii) the future impacts of AI in esports (blockchain, cloud-based gaming, generative AI, etc.)

This technology will continue to improve in the realm of competitive gaming. In any sport, the ability to analyse performance and use that insight to predict the outcome is very valuable. Esports is different from traditional sports in that everything about it is digital. These digital landscapes generate a huge amount of data, in a way that no other sport can. This gives AI a huge advantage for analysis and prediction. AI's ability to automate repetitive tasks, make smart decisions, and analyse large amounts of data faster than humans, makes it a valuable tool for gaming and esports. From non-player characters to game guidance and immersive experiences, the future of AI and gaming is bright, with the eSports industry jumping on the bandwagon.

Development of a framework for multigaming organizations to optimise esport player performance, with specific reference to Counter-Strike: Global Offensive

Leon van der Linde, Pieter Blignaut and Pieter Potgieter

Introduction eSports is competitive video gaming, coordinated by different leagues and tournaments. Professional eSports players belong to teams or clubs, known as multigaming organizations (MGOs), that various business organizations sponsor.

A popular eSport title, Counter-Strike: Global Offensive (CSGO), allows players to set up their hardware and in-game settings when competing. Customization options are not limited to the game itself but include hardware settings for the monitor, mouse, and other peripherals. The study sought to create a framework to predict the combination of personality types, hardware settings, and in-game settings that will provide the best performance for CSGO players.

An online questionnaire was provided to South African CSGO players to indicate the most utilized hardware and in-game settings. Interested participants completed the Big Five (BF) personality test to identify their personality type.

Baseline performance was established by recording gameplay statistics of the "deathmatch" mode versus artificial intelligence using their preferred settings. Participants tested the same three most used variances for different settings (from the questionnaire) to determine which variance provided the best performance. Best-performing variances of each setting were included in the framework.

Participants used specific settings from the framework according to their personality and experience level and had their performance re-evaluated.

Comparing baseline and post-framework results indicated significant increases in performance for most participants regarding the number of kills, deaths, kill/death ratio, accuracy percentage, and headshot percentage measured.

The combination of personality types, hardware settings, and in-game settings identified by the framework yielded positive results. The implication for MGOs is that the framework can provide a guideline for current/prospective professional players to tweak their existing hardware and in-game settings to optimize their performance when competing in CSGO.

Difference in health belief for exercise between gamers and non-gamers: Implications for amateur esports development

Xiaobo Ke and Christian Wagner

Amateur esports represents a distinct form of esports designed for mass gamer participation as the player, non-professional but still competitive and serious in its pursuit. The evolution of esports has recognized the significance of fostering amateur esports as a critical strategy to address the paradox of a wide yet minimally monetized audience in the current landscape. As amateur esports continues to rise in popularity, concerns have emerged regarding the health risks of mass gamers, including chronic diseases and discomforts stemming from prolonged sedentary behaviour and insufficient physical activity. However, existing amateur esports research focuses mainly on motivational aspects and promotional strategies for its development, largely neglecting the potential health implications for its widespread participant base—mass gamers. To bridge this research gap, with the recognition of the significant role of health belief in decision-making related to health promotion, this study performs an exploratory investigation to discern the potential differences in health belief between mass gamers and non-gamers and the subsequent impacts on developing effective health promotion strategies within the amateur esports community. Specifically, this study conducts an online questionnaire-based survey using Health Belief Model Scale for Exercise among mass gamers (with or without exercise habits) and non-gamers (with or without exercise habits). With the sample recruited from Prolific (N=~400), independent samples ttest and fuzzy-set qualitative comparative analysis will be employed to (1) uncover the health belief difference between mass gamers and non-gamers at various conditions and dimensions and (2) illustrate how the health belief dimensions result in physical activity engagement. Expected findings offer preliminary insights into how gaming may affect decision-making regarding physical activity engagement, particularly through variations in specific dimensions of health belief. Furthermore, these insights lay the groundwork for discussing the broader implications for (amateur) esports research and practice, particularly concerning health risk awareness and health promotion strategies.

Unveiling the cognitive dynamics: Assessing reaction times of elite FPS players through pre-recorded game footage

Yu Fang

Current research on the reaction times of first shooting game elite players often relies on simple image or color change stimuli, which do not accurately represent in-game scenarios where characters emerge progressively from cover. This study proposes a hypothesis based on the inbattle techniques used by players, such as peeking, re-peeking, pre-firing, and pre-aiming. It suggests that elite players respond to any visual differences at the edge of enemy cover with 'simple reaction time' while novice players require 'choice reaction time,' needing to identify and process the visual stimulus before reacting. The experiment employs pre-recorded game footage to assess participants' reaction times when game character models appear, thereby testing the hypothesis. This approach allows for the measurement of reaction times in a controlled setting that closely simulates actual gameplay conditions. The findings aim to unveil the unique reaction patterns of high-level esports athletes. These insights are not only valuable for player training and game design but also contribute to advancing academic discussions in cognitive science and esports. By enhancing our understanding of human cognitive responses in high-intensity environments, this research offers significant implications for both practical applications and theoretical exploration in these fields.

A narrative analysis of pursuing an esports coaching career: What have we learnt about professional growth?

Laura Swettenham, Jonathan Brain, Matthew Watson and Alessandro Quartiroli

With the growth of esports, esports coaches (ECs) have become a prominent feature of the esports landscape and there are numerous high-profile coaches working across esports titles. However, ECs have had to find their way without a codified development pathway or contextspecific evidence base (Watson et al., 2022). With esports coaching in the infancy of its professionalisation, it is important to understand the lived experience of ECs to support the sustainable growth of esports coaching practice and research.

The purpose of this research is therefore to explore the experience of working as an EC and pursuing an esports coaching career, creating composite vignettes illustrating different aspects characterising the stories of active esports coaches. 11 participants (1 female) took part and ranged in age from 21 – 33 years of age. Participants were from seven different nationalities and four different esports titles. Participants were actively working as esports coaches at the time of the study (Tier S to Tier B teams). Participants took part in one narrative interview (M = 1 hour 5 minutes). Interviews were transcribed and analysed using reflexive thematic analysis (Braun & Clarke, 2012) before the researchers took the role of storytellers to create composite vignettes to tell the coaches' stories (Shinke et al., 2017).

Six themes were generated (e.g., entry into esports, coaching demands, career progression and developmental experiences) before three composite vignettes were written. By sharing these stories with the esports community and academic sphere, we hope to shed light on Abstract presentation (not full paper submission)

challenges and opportunities throughout an esports coaching career. Further, we will discuss how these stories can help to inform future coach education and development in esports in order to su:pport the professional growth of esports coaches.

References

Braun, V., & Clarke, V. (2012). Thematic analysis. American Psychological Association.

Watson, M., Smith, D., Fenton, J., Pedraza-Ramirez, I., Laborde, S., & Cronin, C. (2022). Introducing esports coaching to sport coaching (not as sport coaching). Sports Coaching Review, 1-20. https://doi.org/10.1080/21640629.2022.2123960

Schinke, R. J., Blodgett, A. T., McGannon, K. R., Ge, Y., Oghene, O., & Seanor, M. (2017). Adjusting to the receiving country outside the sport environment: A composite vignette of Canadian immigrant amateur elite athlete acculturation. Journal of Applied Sport Psychology, 29(3), 270-284. https://doi.org/10.1080/10413200.2016.1243593

Modern controls: An autoethnography of motor impairment, controls, and fighting game accessibility

Rory Summerley

Disability has long been a focus for studies examining it as a cultural and social 'other'. Only in the last decade or so has the discussion of disability and accessibility come to prominence in the sphere of esports through conversations and initiatives that aim to foreground it in (often controversial) public discourse about games and their development.

This paper discusses the journey of the author to overcome a debilitating bilateral hand injury, coinciding with the beginning of the first UK COVID-19 lockdown in 2020. As a result of the injury, the author was left disabled and functionally unable to play most games but, through a long period of testing different rehabilitation treatments and accessibility solutions, worked back up to playing fighting games (a favourite genre) only in mid 20232024. This autoethnography charts their, often frustrated, journey through rehabilitation and its intersection with the prevalence of control schemes and in-game options for players of fighting games in recent years, specifically those geared towards approachability and accessibility. This account helps to communicate first-hand insight into personal experience with disability, game design, and accessibility options through direct personal narratives tempered by an academic perspective.

This account moves towards discussion of a case study: the implementation of 'Classic' and simplified 'Modern' controls in Street Fighter 6 and the first year of the game's life cycle. Alongside this the discourse around control scheme in the fighting game community and the plurality of ergonomic controllers emerging in the fighting game scene as alternatives to traditional 'arcade sticks' and 'console gamepads' (first beginning in 2010 with the first 'hitbox' controllers) is also covered.

Thus, a narrative of the personal and communal response to these changes is presented in parallel to help foreground the 'other' and open up discussion about how motor accessibility concerns intersect with a highly input-dense game genre, its design, and its community (including its competitive esports scene).

Diversity, equity and inclusion in esports: Supporting strategies and best practices

Authors: Luca Viola, Domenico Filosa, Simona Ceretta

For some time now, diversity and inclusion (D&I) issues have been the focus of attention in every sector, and regulations on the subject have been introduced with great rapidity. Gaming, both professional and amateur, is not exempt from such influences, and D&I development policies are as much on the agenda as ever among the goals of industry players. The analysis of regulations at a European and non-European level, which is provided here in a timely manner, provides a starting point for analyzing possible corrections and improvements that could be made to them. Similarly, an examination of the current strategies on the market to foster inclusion and break down barriers, be they gender-based or related to discriminatory factors such as disabilities, religious beliefs, ethnicity, socio-economic background (by way of example only), can contribute to the identification of possible strategies to improve diversity and inclusion (D&I) practices. In this context, our analysis of the current D&I-related devices and projects present at European and non-European levels aims to provide input for the identification of further tools that can widen the possibility of approaching gaming for every enthusiast, regardless of their personal condition.

Reconfiguring gaming masculinities through the esports jersey: An object-based analysis

David Cumming

Esports kit, the team uniforms worn by professional esports players and replicas sold to fans, are the subject of little scholarly discourse despite their prominence across esports broadcasting, marketing, and merchandising. As a fashion object the kit jersey has traditionally acted as a constructor of team identity and symbol of sporting authenticity (Nuhrat, 2019). Drawing on these sporting ideals, the esports jersey has become an important leisurewear garment of a renewed gamer aesthetic which bridges jock and geek masculinities (Voorhees and Orlando, 2018).

An object-based methodology, the critical analysis of a garment's material attributes including fabric, construction, decoration, and fit, can be used to evaluate and interpret the cultural expression inherent in all clothing (Steele, 1998). The esports jersey can therefore act as a lens to examine the ongoing reinvention of gamer identities.

Applying this approach, the esports jersey presents a slim, athletic fit which privileges a body distant from those of historic gamer stereotypes, portraying a reimagined aesthetic ideal. Additionally, sportive attributes of traditional team sports kit have been appropriated and adopted in the esports jersey. While largely superfluous to the needs of the typical esports professional, they exchange functional value for symbolic; sweat-wicking technical fabrics and player numbers which embellished on the backs of jerseys are seldom seen when players are sat at chairs. Through these symbolic sportive identifiers, a link between the material culture of esports and the cultural hegemony of traditional sports is established (Stride et al., 2020). Ultimately, the esports jersey exists as an aspirational garment which ties into broader discourses surrounding the reinvention of neoliberal masculine gamer identities, where the act of play is serious, legitimate, and admired, and where gamers seek monetary and social success through their grinds both in and out of game (Brock and Crawford, 2024).

References

Brock, T., Crawford, G. (2024). The Esports Experience Economy: how gaming fashion, entertainment, and products shape consumer identity. [Conference presentation]. The In-Betweeness of Play DiGRA Brazil/British DiGRA Joint Hybrid Conference.

Nuhrat, Y. (2020). Bodies, football jerseys, and multiple male aesthetics through football in Turkey. Fashion Theory, 24(5), 679-696.

Steele, V. (1998). A museum of fashion is more than a clothes-bag. Fashion Theory, 2(4), 327-335.

Stride, C., Catley, N., & Headland, J. (2020). Shirt tales: how adults adopted the replica football kit. Sport in History, 40(1), 106-146.

Voorhees, G., & Orlando, A. (2018). Performing neoliberal masculinity: Reconfiguring hegemonic masculinity in professional gaming. Masculinities in Play, 211-227.

Esports for the common good – Examining German esports fundings and their stakeholders

Jana Möglich

This study, titled "Esports for the Common Good – Examining German Esports Fundings and their Stakeholders", aims to explore the socio-economic potentials and challenges of esports funding in Germany. The research focuses on three state-level esports funding programs in North Rhine-Westphalia, Saxony-Anhalt, and Schleswig-Holstein.

The primary research question investigates the socio-economic aspects of these esports fundings (a.o. Ministry of the Interior, Municipalities, Housing and Sport Schleswig-Holstein, 2023, n.p.) and the funding's stakeholders.

The research process includes a literature review and an analysis of the examined funding programs and their stakeholders. This involves content analysis of the selected esports funding programs and a discourse analysis according to esports (funding). This approach allows for the triangulation of data, enhancing the validity and reliability of the findings.

Preliminary findings indicate that esports funding programs in Germany have significant socio-economic relevance. For instance, the Esports Hub in Saxony-Anhalt collaborates with educational institutions to enhance digital literacy and promote positive public perception of esports (Esports Hub Saxony-Anhalt, 2023, n.p.). The discourse analysis reveals diverse interests, opinions, and goals of the funding's stakeholders, ranging from economic benefits to community building.

The study highlights the need for a strategic approach to esports funding, emphasizing the creation of public value. The findings have implications for policymakers, educators, and industry leaders, providing a framework for leveraging esports for the common good.

In conclusion, this research underscores the potential of esports funding to contribute positively to society. By examining the German context, the study offers valuable insights into the broader implications of esports as a tool for social and economic development.

Future research should continue to explore the evolving landscape of esports and its impact on various societal dimensions.

References

Esports Hub Saxony-Anhalt [German: E-Sport Hub Sachsen-Anhalt] (2023). Esports Hub Saxony-Anhalt – Homepage [German: E-Sport Hub Sachsen-Anhalt]. https://e-sporthub.de/ [May 20, 2024].

Ministry of the Interior, Municipalities, Housing and Sport Schleswig-Holstein [German: Ministerium für Inneres, Kommunen, Wohnen und Sport Schleswig-Holstein] (2023).

Esports Funding Guideline [German: Richtlinie über die Förderung des E-Sport in Schleswig-Holstein]. https://www.schleswigholstein.de/DE/fachinhalte/S/sport/Downloads/rili_eSport.pdf?_blob=publicationFile &v=5 [May 20, 2024].

Reporting esports samples: A scoping review

Christian Staedter, Kyle Bennett, Dylan Poulus, Oliver Leis, Benjamin T. Sharpe and Mitchell Nicholson

The growth of gaming and esports has spurred increased academic interest and research across various disciplines. However, the relative novelty of this field means that best practices are not yet established, leading to inconsistent and inadequate sample information. This paper systematically reviews the existing literature, examining how researchers report esports samples, and addresses gaps identified in previous reviews, such as Mendoza et al. (2023). What descriptive information is provided when reporting esports samples? What categories have been adopted to date when addressing such samples?

We leveraged a scoping review approach following PRISMA-ScR guidelines. We conduct a structured keyword search in databases (Web of Science, EBSCOhost, Google Scholar, and Science Direct) across multiple disciplines in Mai 2024, using the PICO model. In our review, only peer-reviewed, primary, empirical, English studies will be included.

The search provided an initial sample consisting of 8,536 articles before screening. Within our full paper we will, we will report main study outcomes, characteristics of all relevant literature, and highlight emerging trends.

We will discuss key outcomes such as quality and quantity of information as well as terms used by researchers based on the literature. Furthermore, strengths and limitations, as well as current practices and lack thereof will be highlighted. Lastly, we will suggest guidance for future research regarding esports sampling.

Teaching football tactics with EA FC

Enrico Strock

Tactical training in football is a fundamental aspect of player development and team performance. Coaches employ various strategies and methodologies to enhance players' tactical understanding and decision-making on the field. (Aguiar et al. (2012) Arcos et al., 2015). Furthermore, the integration of multimedia tools in football training has been recognized as a valuable approach to improve players' mental and skill aspects (Radhouane & Abdelkadir, 2022). Therefore, the research question is: Can see the video game EA Sports FC 24 be seen as an educational game for football tactics?

Educational games or game-based Learning have been recognized as a valuable tool in enhancing learning outcomes and student engagement across various educational domains. Research indicates that the integration of digital games in education positively impacts cognitive, affective, and psychomotor skills of learners, actively engaging them in the learning process Bigdeli & Kaufman (2017). Moreover, educational video games have been shown to boost students' motivation and improve learning outcomes across different levels of education and disciplines (Gordillo et al., 2021). Studies have highlighted that educational games can enhance students' attitudes towards learning, with cooperative goal structures significantly improving the effects of computer games on subjects like mathematics (Ke, 2008). Furthermore, the use of educational games as learning media has been found to encourage users to discover and construct their knowledge, contributing to increased enjoyment and acceptance of gamebased learning (Patmanthara et al., 2019; Li et al., 2021).

The target of this research is to transfer this theoretical construct into a real life experiment. By experimenting with two almost identical groups, one taught with classical methodologies based on PowerPoint and one taught with EA Sports FC 24. It should be checked whether the learning success has been enhanced by using the video game as an educational game.

References

Arcos, A., Vázquez, J., Martín, J., Lerga, J., Sanchez, F., Villagra, F., … & Zulueta, J. (2015). Effects of small-sided games vs. interval training in aerobic fitness and physical enjoyment in young elite soccer players. Plos One, 10(9), e0137224. https://doi.org/10.1371/journal.pone.0137224

Barcellos, A., Teoldo, I., & Machado, G. (2022). The influence of 25 training sessions on the decision-making skill of u-12 soccer players. Psicologia Teoria E Pesquisa, 38. https://doi.org/10.1590/0102.3772e38211.en

Bigdeli, S. and Kaufman, D. (2017). Digital games in health professions education: advantages, disadvantages, and game engagement factors. Medical Journal of the Islamic Republic of Iran, 31(1), 780-785. https://doi.org/10.14196/mjiri.31.117

Gordillo, A., Barra, E., & Quemada, J. (2021). Sgame: an authoring tool to easily create educational video games by integrating scorm-compliant learning objects. Ieee Access, 9, 126414-126430. https://doi.org/10.1109/access.2021.3111513

Ke, F. (2008). Computer games application within alternative classroom goal structures: cognitive, metacognitive, and affective evaluation. Educational Technology Research and Development, 56(5-6), 539-556. https://doi.org/10.1007/s11423-008-9086-5

Li, M., Zhang, Q., & Yu, Z. (2021). Integrating educational games into college english learning. Education Research International, 2021, 1-9. https://doi.org/10.1155/2021/6403034

Patmanthara, S., Yuliana, O., Dwiyanto, F., & Wibawa, A. (2019). The use of ladder snake games to improve learning outcomes in computer networking. International Journal of Emerging Technologies in Learning (Ijet), 14(21), 243. https://doi.org/10.3991/ijet.v14i21.10953

Radhoune, L. & Abdelkadir, B. (2022). The efficiency of visual-spatial abilities (memory processes) training through multimedia simulation for soccer strikers. The Eurasia Proceedings of Educational and Social Sciences, 28, 54-61. https://doi.org/10.55549/epess.1223256

Using Generative AI to increase coaching accessibility in rural high schools rationale

Michael Cassens

High school esports have experienced a significant surge over the last several years (Gifford, 2024), leading to increased student engagement and school participation. Access to computer labs, software, and advisors poses a considerable challenge in rural areas. For example, most schools in Montana face budgetary challenges, and school bonds and other taxes do not cover the expenditures. However, the recent approval of esports as an emerging sport by the Montana High School Association has established a consensus that more student opportunities in this space should exist. With this new classification, there is an expectation that more schools will join next year. Generative A.I. coaching could enhance student participation by providing personalized feedback, making the learning experience more interactive and enjoyable.

One specific challenge of any esports program is coaching. Often, the advisor is a gaming enthusiast or technology support specialist in the school but cannot coach multiple titles. Students must coach themselves, or the advisors learn the games the students want to play, yet they feel unprepared to coach appropriately. The introduction of Generative A.I. coaching could potentially revolutionize this landscape, offering a promising solution to these challenges.

Structure:

This 50-minute panel will focus on a Generative A.I. tool, OmnicAI, and how it affects coaching. This session will initially report on the feedback from collegiate athletes using OmnicAI regarding gameplay knowledge, recognition of player tendencies, comparison to professional athletes, and interaction with real-time chat. Depending on the results, OmnicAI will be offered to high schools throughout Montana. This strategic use of technology will increase accessibility to high-quality coaching options and provide more students with opportunities to progress in their titles.

Champion or cheater? Where worlds collide in competitive game play

Zephaniah N. Ansah and Michele R. King

According to Shavin (2023), the first reported incident of cheating in a sporting event occurred "in 388 B.C., during the 98th Olympics, [by] a boxer named Eupolus of Thessaly [who] bribed three of his opponents to let him win" (n.p.). Since "deception at the games is as old as the competition itself," the esports ecosystem is not immune to deception as seen in the infamous match-fixing incident of the 2012 League of Legends World Championship to the most recent League of Legends Champions Korea (LCK) incident of 2024 (Phippen, 2016). This paper investigates the motivations behind cheating (Sotula, et al., 2023), ways players gain an unfair advantage, impacts on the gaming community, and potential solutions.

From game developers implementing anti-cheat measures to players facing the psychological allure of cheating, the authors explore the ethical considerations of esports integrity. This paper identifies dishonest player behaviors to include lobby crashing, drop hacking, DDoSing, and scripting; explores economical, psychological, and social impacts on the gaming community; and analyzes potential solutions for maintaining a fair and competitive gaming environment such as addressing bugs, assessing Riot Games's Vanguard anti-cheat mechanism, and Epic Games's Easy Anti-Cheat (EAC) service. Using a mixed-methodological approach, the authors seek to answer research questions within a multifaceted scope of users. RQ1: What considerations do game developers explore to maintain integrity of their game design? RQ2: Based on EAC's "Five Categories of Cheaters," to what extent are players motivated to gain an unfair advantage through third-party programs? and RQ3: In what ways does cheating affect user experience?

With technological advancements, cheating can infiltrate all aspects of game play. Collaboration from producers, pentesters, and players has the potential to maintain a level playing field.

References

Phippen, J.W. (2016, August 19). A brief history of cheating at the Olympics. The Atlantic.

Shavin, N. (2023, August 3). The ancient history of cheating in the olympics. Smithsonian.

Sotula, A.; Dunn, C.; & Rosen, D. (2023, September 3). Inside the minds of gaming's dirtiest cheaters [YouTube]. theScore esports.

An even playing field: Retheorizing the collision of esports and universities

Maxwell Foxman, Brandon C. Harris, Andrew J. Wilson, Amanda C. Cote

As esports spreads into novel terrains, from collegiate tournaments to military recruitment, competitive gaming can struggle in articulating its legitimacy and value in collision with other professions. Therefore, this paper theoretically situates esports as a contested "field" to illuminate where institutions and players compete over social hierarchies. While related to the broader game industry (Keogh, 2023), esports is also an autonomous field with its own cultural and symbolic capital, along with actors who demarcate acceptable boundaries (Bourdieu, 2018). University-level esports are a poignant site to see how esports establishes itself with other fields, as schools determine how to coexist with tournament organizers, in what units programs are placed, and which policies apply to gaming. In other words, overlapping fields inside universities create tension among players, administrators, athletes, and stakeholders. To illustrate these conflicts further, our work analyzes varsity and "dorm room" informal play as a case where field boundaries blur.

This paper draws on in-depth interviews with various actors (e.g., student players, administrators, industry professionals) from 9 US universities regarding their "boundary work" (e.g., Gieryn, 1983) in establishing collegiate esports. Transcribed interviews are coded using a grounded theory approach (Glaser & Strauss, 1999), which generates theories through an iterative cycle of observing patterns in data, sorting them into representative themes, and testing themes with internal memos and discussions. Specifically, interviewee's discussion of differences between formal and informal competitive gaming led us to theorize collegiate esports through "field theory" (e.g., Bourdieu & Passeron, 1990).

Initial interviewees described informal competitions as the "lifeblood" of college esports, providing players significant cultural capital. However, university administrators performed boundary work to maintain their social hierarchy over "legitimate" esports, creating symbolic capital through jerseys, facility access, and team admittance. Ultimately, these differences highlight critical areas of value generation and conflict when it comes to collegiate esports, but also illustrate how different fields, ranging from colleges to nations, exert influence over competitive gaming to maintain their own cultural, social and economic viability.

References

Bourdieu, P. (2018). The forms of capital. In The sociology of economic life (pp. 78–92). Routledge.

Bourdieu, P., & Passeron, J.-C. (1990). Reproduction in Education, Society and Culture. SAGE.

Gieryn, T. F. (1983). Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists. American Sociological Review, 48(6), 781–795.

Glaser, B., & Strauss, A. (1999). The Discovery of Grounded Theory: Strategies for Qualitative Research. Aldine Transaction.

Keogh, B. (2023). The videogame industry does not exist the videogame industry does not exist: Why we should think beyond commercial game production. MIT Press.

Shut up and take my money: Is esports spectating associated with spending on gambling and gambling-like activities?

Joseph Macey and Topias Mattinen

Esports is a phenomenon that truly embodies the logics of media convergence, emerging from the technological advances of the late 20th century to provide a venue for new economic, social, and cultural practices centred on the consumption of digital media. It extends across a range of media formats, blurring the lines between players and spectators and creating value through the communities and cultures that have grown both around and alongside it.

A particular manifestation of these practices in esports is the convergence of video gaming and gambling, an area in which academic interest has grown over the last decade. Gambling, and gambling-like experiences, have become increasingly common in many esports titles, whether through player-led practices, or as part of monetisation strategies adopted by developers and publishers. Esports adds a further dimension, facilitating formal betting on the outcome of competitive activities while also acting as a vehicle for promotion of gambling via sponsorship and marketing.

The intersection of gaming and gambling so prevalent in the esports ecosystem has given rise to debate concerning the nature of these practices and their potential consequences; some have argued that they are simply a means of providing additional value to consumers, while others fear that they may be encouraging more problematic consumption behaviours.

Method: This work uses statistical analysis to examine data collected via an online survey of video game players (n = 587). Specifically, a non-parametric test of variance (Kruksall-Wallis) is employed to examine levels of participation in a range of gambling activities according to frequency of esports spectating.

Implications: It is expected that results will be of interest to multiple stakeholders, providing evidence as to whether increased consumption of esports (spectating) is associated with increased participation in gambling or not, and to highlight potential activities which may be associated with problematic consumption.

"Four Asians and one American" – Import player discourse in North American Professional League of Legends

Tina Sang

The project investigates broadcast and community narratives surrounding "import players" in the North American League of Legends ecosystem. Specifically, this projects explores how such narratives reflect American exceptionalism and xenophobia.

Content and discourse analysis was conducted on the broadcast content and responses from Twitter during the LCS 2024 Spring Split and the Mid-Season Invitational. In particular, this project compares coverage surrounding Team Liquid Honda, with three players native to Korea, to FlyQuest, with three European players.

The analysis revealed much of the concern around foreign players in the LCS focuses on the language barrier, with the expectation that communication is completed in English. Notably, the presence of imports is demonstrative of the failure of LCS infrastructure, and team owners believe that foreign players have better work ethics or are implied to be more innately talented. This regional distinction is especially prominent during inter-regional events, where foreign players are represented as both so unrelatable that North American fans can't cheer for these teams and as "not worth" their paycheques when these players are unable to find competitive success.

The esport industry often seeks to depict itself as politically neutral, distinct from the discourses regarding race or nationality as found in traditional sports. However, Western esports in particular continues to reinforce dynamics of White centrality and xenophobia. The discourse surrounding import players, within official broadcasts and online communities, poses important questions about globalised labour mobility and nationalism, paralleled in traditional sports.

Given the historical domination of Asian rosters, the anxiety of Western inferiority manifests as a fear of prioritising foreigners over native talent and the physical invasion of immigrant bodies in the United States. This anxiety also manifests on the inter-regional stage, especially when North American teams fail to perform.

The gambling gateway: Can esports titles onboard players to gambling behavior?

Topias Mattinen, Joseph Macey and Juho Hamari

In the past decade, esports has been through a rapid evolution, growing from a niche hobby into a global phenomenon, drawing millions of viewers and generating significant revenue through sponsorships, advertising, and merchandise sales. With professional leagues, high-stakes tournaments, and star players, esports has begun to mirror traditional sports in many ways. Resemblances can also be found in other areas beyond the game itself, as betting on esports matches has been made increasingly more available through online gambling sites and houses, and has been growing in popularity. And though gambling has always been a part of sports culture, taking part in sports activities, such as playing a game of football can be done without participation in any form of gambling whatsoever. But can the same be said about popular esports titles? As many esports titles today still fund their free-to-play economies through purchase of loot boxes and other randomized content, can simply playing the game inevitably introduce the player to gambling mechanics and behavior?

This research, through analysis of the Steam platform marketplace and excerpts from semi-structured interviews with video game players, takes a deeper look into the connecting tissue between esports gameplay, and participation in gambling activities. It aims to discover perceptions related to the integration of gambling mechanics into esports titles, and how a platform such as Steam can function as a mediator between gaming and gambling activities.

This study and its impacts will raise important questions about the still ongoing integration of in-game gambling mechanics, such as purchasable and sellable loot boxes on gaming communities, especially in relation to user experiences and potential problematic behaviors these mechanics can nurture. In the end, this research will add to the growing body of research on esports' relationship to gambling, and tackle these issues by providing actual solutions.

Esport and spectacularisation: How does the mediatised practice of video games fit into the logic of production? Case study of Rainbow Six Siege

Anna Rivière

During the 2017 League of Legends World's Championship opening ceremony, one of the most iconic objectives of the game, known as The Elder Dragon, spread its wings and made its entrance in Beijing's National Stadium. Visible only to online spectators on the Twitch live stream, this 3D creation came in addition to an already spectacular opening ceremony, featuring the League of Legends official World's anthem specifically composed for this event. This spectacularisation (Besombes, 2016) emanates from the practice of esport and involves not only a tremendous work on the scenic layout (Mora & Heas, 2003) (choice of colours, decor, lighting, sound atmosphere, animation) but also an effort to modify the gameplay and game design (Taylor, 2012) of the game to adapt it to the practice of live competition. Spectacularisation refers to the "transformation of the player's ludic experience into a spectacle" (Barnabé, 2020). We will go even further and suggest that this spectacularisation, generated by the context of an esports competition, is also fuelled by the design of specific graphic elements and game mechanics. Because it is aimed at a dual audience (players and non-players) (Hamari & Sjöblom, 2017), the spectacularisation of video games also applies to the player himself, who becomes an object of spectacle. In the context of the production of a video game that is partly intended for the esports scene, we can therefore postulate that spectacularisation is directly involved in the logic of its production and influences gameplay and game design decisions. This is precisely what this paper sets out to study by taking the case of the game Rainbow Six Siege, produced and published by Ubisoft. To what extent is the spectacularisation generated by the practice of esports anticipated into the production chain of the game Rainbow Six Siege? To address this question, this paper will draw on semi-directive interviews conducted with ten people working on the game, in particular game designers, programmers, marketing and communication professionals. This presentation will provide a better understanding of how the video game industries deal with the different practices of video game audiences and how they adapt their games.

References

Barnabé, F. (2020). Entre jeu et spectacle : rhétorique du let's play. In D. Ablali & E. Bertin (Eds.), Sociabilités numériques (pp. pages if available). Editions Academia.

Besombes, N. (2015). Du streaming au mainstreaming : mécanismes de médiatisation du sport électronique. In A. Obœuf (Ed.), Sport et médias (pp. 179-189). Éditions du CNRS.

Hamari, J., & Sjöblom, M. (2017). What is eSports and why do people watch it? Internet Research, 27(2), 211-232.

Mora, P., & Heas, S. (2003). Du joueur de jeux vidéo à l'e-sportif: vers un professionnalisme florissant de l'élite? In La pratique du jeu vidéo: réalité ou virtualité (pp. 131-146).

Taylor, T. L. (2012). Raising the Stakes: E-Sports and the Professionalization of Computer Gaming. MIT Press.

The rise of mobile esports in Indonesia

Haryo Pambuko Jiwandono

As part of global participatory media ecologies, mobile games have emerged as significant cultural interfaces, and their uptake and impact on gaming cultures is often regionally specific depending on national interests and localised habitudes of mobile media and gameplay. This presentation focuses on the rise of mobile esports in Indonesia, suggesting that novel gaming cultures (Jiwandono & Purwandi, 2020) have formed in the region due to a unique constellation of influencing factors and sociopolitical agents. Over the past decade, the influence of China as a dominant mobile games producer saw the rapid expansion of mobile games into Southeast Asia (Zhao et al., 2023), and their utilizations as esports games in Indonesia which are unique in comparison to computers or console games esports in other regions.

This presentation is guided by two research questions: how do the specific affordances of mobile media interfaces and practices foster the establishment of mobile esports, and what role does social and participatory media play in distributing and amplifying mobile esports? Drawing from interviews conducted in 2023 with Indonesian e-athletes, amateur competitors, esports organisations and content creators, it applies a grounded theory approach (Charmaz, 2006) to explore some of the complex factors that have contributed to the remarkable success of mobile esports in the region, and its important role in Indonesia's media ecology.

The exploration considers how cheap prices of smartphones and free availability of mobile games attracted esports participation from Indonesians in the form of competitions, esports activity on social media, and national directives from the Indonesian government. Within this unique media ecology, mobile esports has emerged as prolific social activity and professional aspiration, one that is actively supported by government initiatives and sponsorship, organisations and associated infrastructure, and a considerable presence across popular and social media.

References

Charmaz, K. (2006). Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis. London and Thousand Oaks: SAGE Publications.

Jiwandono, H., P., Purwandi, E., R. (2020). "Liga Seluler: Pergeseran olahraga elektronik ke peranti seluler dalam kompetisi Mobile Legends Bang Bang di Indonesia." Jurnal Media dan Komunikasi Indonesia 1 (1). Pp. 4-18. DOI: http://doi.org/10.22146/jmki.51164.

Zhao, Y., et al. (2023). "Toward cultural and creative Industry: Chinese eSports through a business ecosystem lens." Journal of Cultural Economy 16(2). Pp. 260-276. DOI: https://doi.org/10.1080/17530350.2022.2159494 .

An analysis of program statements of U.S. collegiate esports

Sabrina Sonner, Vasil A. Arangelov, Cassie Cole, Maxwell Foxman and Amanda C. Cote

Esports development on college campuses is generally portrayed positively, emphasizing the benefits of integrating gaming into education (Steinkuehler and Squire 2023) and helping students develop life skills and job opportunities (Baltezarević, Baltezarević, and Baltezarević 2023; Brock 2023; Salo 2021). These optimistic goals led to a global boom in collegiate esports.

Simultaneously, however, university programs face challenges, including lack of resources (e.g, Brock 2023), gender inequity (Martin 2022), labor distribution (Harris et al. 2022), and health concerns (DiFrancisco-Donoghue et al. 2022). These issues speak to uncertainty in how collegiate esports are positioned and understood on campuses, as well as in program goals. To examine these tensions, this study examines how U.S.-based collegiate programs describe themselves and their goals.

This study draws on a dataset assessing the composition of U.S. collegiate esports, using the National Association of Collegiate Esports (NACE) to identify programs. We conducted both quantitative analysis of program attributes and a qualitative inductive thematic analysis (Braun and Clarke 2021) of public-facing descriptions from institutional websites. Here, we focus on the latter to determine how universities present their teams.

Overall, only 61 of 225 analyzed programs had program explanations, making it an uncommon practice. Among those 61 programs, most focused on two general themes. Many descriptions were game-oriented – referring to competition, success, and reputation. The other prevalent theme, however, focused on players' personal, non-game-related growth through qualities like skills development, community, and mental health.

The variety of game- and life-oriented goals within program descriptions suggests different scopes and audiences, reflecting a tension in the way that esports programs are viewed by institutions. Our findings suggest that the goals of collegiate esports are divided between competitive achievement and non-competitive goals like personal and professional growth, as well as education. A better understanding of these programs' offerings to their host schools and students is therefore needed to understand the future development of the field.

References

Baltezarević, Radoslav, Vesna Baltezarević, and Ivana Baltezarević. 2023. "The Role of Digital Marketing in the Esports Industry." Acta Ludologica 6 (1): 28–45.

Braun, Virginia, and Victoria Clarke. 2021. Thematic Analysis: A Practical Guide. SAGE.

Brock, Tom. 2023. "Ontology and Interdisciplinary Research in Esports." Sport, Ethics and Philosophy, 1–17.

DiFrancisco-Donoghue, Joanne, William G. Werner, Peter C. Douris, and Hallie Zwibel. 2022. "Esports Players, Got Muscle? Competitive Video Game Players' Physical Activity, Body Fat, Bone Mineral Content, and Muscle Mass in Comparison to Matched Controls." Journal of Sport and Health Science 11 (6): 725–30.

Harris, Brandon C., Jared Hansen, Onder Can, Md Waseq Ur Rahman, Maxwell Foxman, Amanda C. Cote, and Tara Fickle. 2022. "'Starting from Scratch to Looking Really Clean and Professional': How Students' Productive Labor Legitimizes Collegiate Esports." Critical Studies in Media Communication 39 (2): 141–53.

Martin, Adam. 2022. "Esports and Title IX: Addressing Scholarship Distribution Across Gender Lines in Collegiate Esports Programs." Brigham Young University Prelaw Review 36(1): 12.

Salo, Markus. 2021. "Career Transitions of ESports Athletes: A Proposal for a Research Framework." In Research Anthology on Business Strategies, Health Factors, and Ethical Implications in Sports and ESports, 478–90. IGI Global.

Steinkuehler, Constance, and Kurt Squire. 2023. "Gaming in Educational Contexts." In Handbook of Educational Psychology, 4th Edition, 674–95. Routledge.

Exploring the reliability of the KovaaK's aim trainer and the effects of caffeine on the shooting performance of first-person shooter esports players

Ethan J. Rogers, Neil King, Michael G. Trotter, Daniel Johnson, and Ben Desbrow

This investigation, preceded by a pilot study, explored the effects of caffeine on the shooting performance of first-person shooter (FPS) esports players. In the pilot study, ten participants completed two identical trials using the KovaaK's FPS aim trainer to evaluate its reliability. All performance variables demonstrated excellent (intraclass correlation coefficient [ICC] 95% confidence intervals [CIs] > 0.9) or good to excellent (ICC 95% CIs > 0.75) reliability. In the main study, twenty-four participants completed three experimental trials, consuming either a water control (CON), a 1 mg·kg-1 body mass (BM) caffeine dose (CAF1), or a 3 mg·kg-1 BM (CAF3) caffeine dose in capsule form. Performance was measured at four time points in each trial: pre-treatment (PRE), and 60 mins (POST1), 80 mins (POST2), and 100 mins (POST3) post-treatment. Shooting performance was assessed using a static clicking and reactive tracking style task on KovaaK's, assessing score, accuracy (%), hit rate (hits/sec), and shots fired. Results showed that caffeine, irrespective of dose, significantly improved static clicking score and hit rate, and reactive tracking accuracy compared to CON (all p's < .05). Significant time × treatment interactions were identified, with post hoc analyses showing that CAF1 significantly improved static clicking score at POST1 and POST3, hit rate at POST1, and reactive tracking accuracy at POST1, POST2, and POST3, compared to CON (all p's < .05). Post hoc analysis also showed that CAF3 significantly improved static clicking score and reactive tracking accuracy at all time points, in addition to static clicking hit rate at POST1 and POST3 compared to CON (all p's < .05). In summary, KovaaK's provides a reliable metrics platform for assessing shooting proficiency in esports, and caffeine supplementation enhances the shooting performance of FPS esports players.

Communicative appropriation of digital sports: An explorative analysis of chat communication in esports using the example of the Paris Major Blast 2023

Judith Ackermann, Lisa Triebe, Lara Zimmermann, Tobias M. Scholz

Using platforms like Twitch allows spectators to participate and communicate with others as well as with the producers and streamers. Research, currently, focuses on the streamer phenomenon in which one streamer is communicating directly with the audience. However, in esports tournaments, the spectator is not directly interacting with the players, but rather with themselves, like in traditional sports. Data collected from the Paris Major Blast 2023 chat activity shows significant engagement, with 1,452,230 messages from 168,682 unique chatters. The analysis reveals that emotes and spam are central to the communicative practices in these massive online environments.

Emotes serve as a primary mode of expression, allowing viewers to convey emotions such as laughter (e.g., KEKW, LUL) and excitement (e.g., PogChamp) and at the same time enabling a high degree of language economy. They create a shared, specialized language among participants, enhancing their collective viewing experience but also informing the formation of spam Spam patterns were identified, with 13,249 instances filtered as spam based on criteria such as message length and repetition. Characterized by repetitive messages and emote overuse, spam plays a crucial role in esport communication, including both affective spam, which overwhelms other communication with emotional content, and more general spam related to tournament events, teams, and popular culture. The study also highlights specific chat highlights, where spikes in activity corresponded to key moments in the tournament, both in-game and out-of-game. These highlights demonstrate how chat interactions can create significant events independent of the stream content, reflecting the community's active role in shaping the viewing experience.

The findings underscore the importance of understanding the role of emotes and spam in esports chats, suggesting that these elements contribute to the unique identity and dynamics of the esports spectator community.

Mapping the terrain of South Korean esports research:
A systematic review

Yaewon Jin and Matúš Adamkovič

This ongoing study conducts a systematic review of scientific outputs related to esports by researchers based in South Korea, focusing on regional characteristics and nuances. Although esports has often been described as "born global" (Scholz, 2019), there are challenges in understanding its regional differences. As an evolving phenomenon composed of 'technichuman ensembles influenced by diverse sociocultural, technical, and historical factors' (Jin, 2022), 'esports culture' and the term itself hold varied meanings within different sociocultural contexts. Consequently, research tendencies in esports may reflect these sociocultural contexts and biases, leading to the over- or under-representation of certain topics across cultures.

Thus, this study concentrates on the South Korean context, a region that has played a pivotal role in shaping modern esports since the late 1990s and continues to be a major force in the industry today. Nevertheless, academic discussions in this region have predominantly stayed confined within national borders due to language barriers.

As part of larger research (Jin & Adamkovič, 2023), initially, 86 articles were selected from a pool of 755 identified by March 2019, with more recent publications up to 2023 added for further analysis. This systematic review aims to provide a comprehensive overview of regional esports research, highlighting distinct tendencies compared to previous analyses of English-language studies. By mapping the terrain of South Korean esports research, this study seeks to uncover regional perspectives and contribute to a more inclusive, global understanding of esports.

References

Jin, Y. (2022). A Study of Postdigital Culture through the Analysis of Technicity of Esports (이스포츠의 기술성 분석을 통해 본 포스트디지털 문화 연구) [Yonsei University]. http://www.dcollection.net/handler/yonsei/000000543599

Jin, Y. & Adamkovič, M. (2023). Scoping Review of South Korean Esports Research and Comparison to the Stakeholder Perception Abstract Proceedings of DiGRA 2023 Conference: Limits and Margins of Games

Scholz, T. M. (2019). eSports is Business: Management in the World of Competitive Gaming. Springer International Publishing. https://doi.org/10.1007/978-3-030-11199-1

Trends in game behaviour between experts and novices in a survival game

Espen Sjoberg

What makes a player an expert in a survival video game? Answering this question is often unquantifiable, as one may become an expert at a video game in a variety of ways, not all involving pure mechanical skill or esports performance. We sought to investigate what in-game behaviours signify an expert in a survival game, in this case the winter survival game The Long Dark. The study recruited 16 Twitch streamers and challenged them to survive 10 days on the hardest difficulty. Eight of the streamers were experts, who averaged over 1.600 hours per players and only played on the hardest difficulty. The other eight were novices, who averaged 500 hours played and typically played on easy or medium difficulty. Upon completion of the survival run, numerous trends were observed, the first being that all experts survived the 10 days while two of the eight novices died. Compared to novices, experts visited more regions, travelled further, and spent more time outdoors exploring. All experts also secured weapon resources, while none of the novices achieved this. Regardless of experience, there were also certain gender differences: Compared to men, women travelled less, spent more time indoors, and discovered fewer locations. This data suggests that expertise in a survival game is defined by high risk/high reward behaviour: experts have a long-term plan and do risky behaviours in return for resources, while novices play slow and safe.

The early history of esports media: The contribution of user-made 'fragmovies'

Espen Sjoberg

Prior to the available streaming services for esports that exists today, such as Twitch or YouTube, it was almost impossible for esports enthusiasts to watch esports live. What filled this void was a series of user-generated videos called 'fragmovies', which were edited videos that highlighted key events from a team, player or tournament. This phenomenon, while still in existence today, really began in 2000 and reached its peak in 2003, after which it suffered a slow decline. The fragmovies existed primarily in the Counter-Strike community, but production was also high within the Quake and Unreal communities as well. The release of such videos involved sharing download links on community websites, as no streaming service existed at the time: success was measured in downloads, not views. For over half a decade, fragmovies were the only means of viewing highlights from esports and acted as a major contributor towards increasing esports interest and promoting teams and players. This paper outlines the history of these fragmovies and their historical contribution to esports mass media. The term itself has become largely outdated, as with the advent of Twitch and YouTube it became commonplace to create clip highlights. Thus, the term 'fragmovie' primarily refers to highlight videos made prior to YouTube's existence, from a time when such videos had a sense of rarity and uniqueness to them, and were not mass produced like today.

Lessons learned by a middle-aged noob on the interdisciplinary value of playing esports

Brian McCauley

This ongoing study represents an auto-netnographic (Kozinets & Kedzior, 2009) exploration of the player/consumer journey (Huston et al. 2022) within esports. During the pandemic I began my journey as a PC gamer, first playing CS:GO and then Valorant. Between May 2020 and April 2023 every game and novel experience was documented over approx. 2800 hours. The final diaries total more than 500,000 words and several thousand screenshots of match results, purchases and in-game events. Engaging in esports play as an informed participant and long-term gamer allowed me a unique perspective to frame my experiences in terms of several areas of academic interest. For esports to be sustainable it requires both economic and social sustainability (Nyström et al., 2022). In terms of economic sustainability, this included insights as a consumer, platform and marketing aspects while from the social sustainability I developed an understanding of teamwork, skill development and the issues around toxicity and negative behaviors (e.g. McCauley, 2023). My experiences suggest that engaging in play can be viewed as beneficial to researchers interested in esports.

References

Huston, C., Gracia B Cruz, A., & Zoppos, E. (2022). Dimensionalizing esports consumption: Alternative journeys to professional play. Journal of Consumer Culture, 22(2), 456-475.

Kozinets, R.V., & Kedzior, R. (2009). I, Avatar: Auto-netnographic research in virtual worlds. In N.T. Wood & M.R. Solomon (Eds.), Virtual social identity and consumer behavior (pp. 3–19). Routledge.

McCauley, B. (2023). An Auto-netnographic Approach to Understanding Alternate Gaming Accounts: How Smurfing Impacts the Prosumer Experience in Counter-Strike: Global Offensive. Journal of Electronic Gaming and Esports, 1(1).

Nyström, A. G., McCauley, B., Macey, J., Scholz, T. M., Besombes, N., Cestino, J., ... & Törhönen, M. (2022). Current issues of sustainability in esports. International Journal of Esports.

Identifying the transmedia object of esports fandom

Josh Jarrett and Josh Wales-Ferguson

Identifying the object of an esports fan is a multifaceted task. In contrast to traditional team-based sports fandoms that are typically defined by a geographic place and long histories in a respective sport (Wann and James, 2019: 51), esports fans do not choose teams based on location, long sporting histories or even the game. For many esports teams, often called esports 'organisations', their brand will extend across games and increasingly include wider networks of games related content creators (Schube, 2022). Moreover, esports teams are increasingly adopting a variety of transmedia affiliations across popular culture, for example in Team Liquid's branded ranges with Marvel and Naruto (Daniels, 2021). Indeed, for some esports teams, their defining feature are transmedia affiliations, for example with Moist

Esports, founded by popular content creators 'MoistCr1tikal'/ 'Ludwig', or with Karmine Corp, founded by French streamer 'Kameto'. The line of address to audiences and fans of these teams is noteworthy as the games related content creators behind these teams often blur distinctions between professional and amateur or commercial and non-commercial to appeal to its audiences, similar to wider co-creative relations (Taylor, 2018). Crucially, these teams and their respective fandoms evidence a model of engagement that decentres the traditional appeals of sports fandom, representative of what Scholz (2020: 4) has called the 'postnetwork' origins of esports media.

This paper utilises the growing body of literature surrounding transmedia engagement (Evans, 2020; Ruotsalainen and Välisalo, 2021) and affective value (Hills, 2015; Jarrett, 2021) to analyse expressions of fandom associated with Karmine Corp and Moist Esports. Examples include social media posts created by the teams, fan banners or memes created by fans and real time responses from audiences in Twitch chats. Taken together, these expressions of fan identity exemplify what Evans (2020: 8) calls the paradigm of transmedia culture where audiences move between 'technological devices, distribution platforms and forms of content' with ease. Moreover though, this paper evidences the affective lines of address teams are adopting to both establish and expand their fandoms as esports decentres itself away from the traditional markers of sports fandom.

References

Daniels, T. (2021) 'Team Liquid unveils apparel collaboration with Naruto', Esports Insider, 8th February 2021. Available at: https://esportsinsider.com/2021/02/team-liquid-unveilsapparel-collaboration-with-naruto

Evans, E. (2020) Understanding Engagement in Transmedia Culture, Abingdon: Routledge.

Hills M (2015) Veronica mars, fandom and the 'affective economics' of crowdfunding poachers. New Media & Society 17(2): 183–197.

Jarrett, J. (2021). Gaming the gift: The affective economy of League of Legends 'fair' free-to-play model. Journal of Consumer Culture, 21(1), 102-119.

Ruotsalainen, M,. and Välisalo, T. (2021) "Esports Fandom in the Age of Transmedia: The Reception of the Overwatch League". Eracle. Journal of Sport and Social Sciences 4 (1), 11 - 35.

Scholz, T. M. (2020). Deciphering the World of eSports. International Journal on Media Management, 22(1), 1-12.

Shube, S. (2022) 'FaZe Clan's grand plans', GQ Magazine, 7th June, 2022. Available at: https://www.gq-magazine.co.uk/culture/article/faze-clan-interview

Taylor, T, L. (2018) Watch Me Play: Twitch and the Rise of Game Live Streaming. Oxford, UK: Princeton University Press.

Wann, D. L., and James, J. D. (2018). Sport fans: The Psychology and Social Impact of Fandom. Routledge.

Exploring the social factors Impacting top performance in Tier 1 Valorant players: An in depth (pilot) study

Youenn ROCABOY

This study delves into the elements that play a role in determining the peak performance of Valorant players competing at the highest level since 2021. We take an approach to investigating how socio-cultural factors may influence players' competitive excellence.

Step 1, identifying peak performance: We utilize VLR.gg, a known platform in the world of Valorant esports to define peak performance based on data analysis. By examining players Average Combat Score (ACS) which reflects their in-game impact we aim to pinpoint periods of peak performance throughout each player's career.

Step 2, age group analysis: Using Liquipedia, an esports wiki dedicated to Valorant, we will group players into age categories based on their birthdates. This categorization will enable us to explore any patterns in performance linked to age.

Step 3, exploring socio-cultural patterns: We will conduct structured interviews with 10 to 15 players, from each identified age group known for their peak performances. These interviews will explore how social factors can affect performance, such, as:

Hobbies: How players spend their time gaming and how these hobbies affect their focus and drive.

Family Relationships: We'll look into how family and friends life impacts a players mental health and support network.

Personal Motivations: Understanding what drives each player to compete and how these motivations change over time in their careers.

By combining the quantitative analysis of ACS data, the qualitative insights from age-based groupings, and information gleaned from player interviews, this study seeks to illuminate some of the socio-cultural factors that contribute to peak performance in Valorant's elite professional scene. The findings can inform critical decisions within esports organizations, potentially impacting player development programs, training regimens, and even future competitive rulings regarding age restrictions.

References

Angelo, D.L. et al. (2022) 'Basic Psychological-Need Satisfaction and Thwarting: A Study with Brazilian Professional Players of League of Legends,' Sustainability, 14(3), p. 1701. https://doi.org/10.3390/su14031701.

Brühlmann, F. et al. (2020) 'Motivational profiling of League of Legends players,' Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.01307.

Cantrell, W.A. et al. (2023) 'Esports,' in Elsevier eBooks, pp. 761–767. https://doi.org/10.1016/b978-0-323-99992-2.00030-x.

Hulaj, R. et al. (2020) 'A motivational model explaining performance in video games,' Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.01510

Klimmt, C. & Hartmann, Tilo. (2006). 'Effectance, self-efficacy, and the motivation to play video games.' Playing Video Games: Motives, Responses, and Consequences. 133-145.

Matuszewski, P., Dobrowolski, P. and Zawadzki, B. (2020) 'The association between personality traits and eSports performance,' Frontiers in Psychology, 11. https://doi.org/10.3389/fpsyg.2020.01490.

Poulus, D.R. et al. (2021) 'A qualitative analysis of the perceived determinants of success in elite esports athletes,' Journal of Sports Sciences, 40(7), pp. 742–753. https://doi.org/10.1080/02640414.2021.2015916.

Poulus, D.R. et al. (2024) 'Burnout, resilience, and coping among esports players: A network analysis approach,' Computers in Human Behavior, p. 108139. https://doi.org/10.1016/j.chb.2024.108139.

Sanz-Matesanz, M., Gea-García, G.M. and Martínez-Aranda, L.M. (2023) 'Physical and psychological factors related to player's health and performance in esports: A scoping review,' Computers in Human Behavior, 143, p. 107698. https://doi.org/10.1016/j.chb.2023.107698.

Trotter, M.G. et al. (2021) 'Social support, Self-Regulation, and psychological skill use in E-Athletes,' Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.722030.

Where playing collides with neoliberalism

Rômulo Dantas Alves and Rubens Venditti Junior

Esport is a global phenomenon that reaches many sectors of society and reproduces the practice of playing. With that, video games and esports are unified fields where we can observe how playing can be reified in game design, introducing some aspects of society such as individualism; meritocracy, gambling, game as a product, streamability and reinforcing neoliberal logics of thinking (Falcão et al., 2020). The aim of this study is to understand how participants of esports recognize these factors.

Therefore, this study investigated how these players relate their experience in esports and how that could reinforce the neoliberal logic and influence the perspective of players, community and workers in the esports and video game industries. The data collected was from a master's degree research about sportification in video games and virtualization of sport from semi-structured interviews with Brazilian players, coach staff, casters, managers (Marconi & Lakatos, 2017). Data analysis methodology was a conceptual qualitative description from categories mentioned by participants and connected by authors (Gomes, 2001).

Thus, according to the participants, such categories were: Visibility; there is a perception that esports have near contact with the community through social media, reinforcing their necessity to be engaged in this kind of system. Spectacularization; social media provokes the perception that esport is an entertainment like modern sports and that it should be exciting. Esport industry; notion that the esports ecosystem is entirely controlled by the publisher and this is dangerous because it must be profitable for the industry and draw the attention of a broad following (Alves, 2021).

There is pressure within the whole ecosystem regarding culture, playing and neoliberalism, therefore, these study's implications are essential for understanding the ways the industry shapes experiences of playing and competing, linking these experiences to values that can legitimize neoliberal logic (Falcão et al., 2020; Woodcock, 2020).

References

Alves, R. D. (2021). Esportivização dos jogos eletrônicos e a virtualização do esporte: Mídia, Novas Tecnologias e Educação Física [Dissertação, Universidade Estadual Paulista]. https://repositorio.unesp.br/handle/11449/216015

Falcão, T., Marques, D., Mussa, I., & Macedo, T. (2020). At the Edge of Utopia. Esports, Ne-oliberalism and the Gamer Culture's Descent into Madness. Gamevironments. https://doi.org/10.26092/elib/411

Gomes, R. (2001). A análise de dados em pesquisa qualitativa. In M. C. de S. Minayo (Ed.), Pesquisa Social. Teoria, método e criatividade (18 ed). Vozes.

Marconi, M. de A., & Lakatos, E. M. (2017). Fundamentos de Metodologia Científica (8 ed). Atlas.

Woodcock, J. (2020). Marx no fliperama: Videogames e luta de classes. Autonomia Literária.

Esports in the urban imaginary: London's place in the political economy of the League of Legends World Finals

Josh Jarrett and David Murphy

On November 19th 2023, Riot Games announced that the 2024 League of Legends (LoL) World Finals would be played in London's O2 Arena. It is the first time that the finals will be hosted in the UK, prompting London mayor Sadiq Khan to refer to the city as a 'leading destination for esports' and the event as a chance to globally showcase the UK 'capital's cutting-edge gaming industry' (Stubbs, 2023). This paper will provide a critical analysis of the discourses surrounding the event, arguing that esports tournaments on this scale provide megacities, such as London, an opportunity to reimagine themselves as existing at the centre of a global digital economy. In other words, world esports tournaments of this scale can be understood as symbolic events that negate political economic contradictions existing between cities, creative economies, and digital platforms.

The idea of a globally spanning sporting or cultural event taking on an industrial significance beyond its spectacle has a long history in urban policy in general and London in particular. In 1851 London played host to the 'Great Exhibition of the Works of Industry of All Nations': an early example of what came to be known as The World's Fair. According to Tom Gunning (1994: 423), this form of Universal Exposition 'explicitly recalled the image of an imperial city, as neo-classical architectural motifs expressed its universal ambitions in terms of world domination'. Recent research on the international significance of esports industries and events has noted related phenomena, such as in Yu's (2018) analysis of esports in China that is seen as a way to promote the region as an 'epicenter' of the global digital economy.

This paper will use critical discourse analysis to identify political economic contradictions present in press releases, media coverage, and promotional material leading up to the LoL World Finals, focusing specifically on tensions between municipal creative industries discourses (Durieux, 2023) and the transnational realities of esports ownership (Ahn et al, 2020). Contributing to current research on global and regional esports events (McCauley et al, 2020: Witkowski and Harkin, 2024), specifically by framing large-scale esports tournaments as symbolic events that negate political economic contradictions existing between transnational industries and regional gaming clusters.

References

Ahn, J., Collis, W., and Jenny, S. (2020). 'The One Billion Dollar Myth: Methods for Sizing the Massively Undervalued Esports Revenue Landscape, International Journal of Esports, 1(1). Available from https://www.ijesports.org/article/15/html

Durieux, M. (2023). London's Creative Industries –Sector deep dive. Available from: https://www.london.gov.uk/business-and-economy-publications/londons-creative-industriessector-deep-dive#download-the-full-report-193767-title

Gunning, T. (1994). The World as Object Lesson: Cinema Audiences, Visual Culture and the St. Louis World's Fair, 1904. Film History, 6(4), 422-444.

McCauley, B., Tierney, K., & Tokbaeva, D. (2020). Shaping a regional offline eSports market: Understanding how Jönköping, the 'City of DreamHack', takes URL to IRL. International Journal on Media Management, 22(1), 30-48.

Stubbs, M. (2023) 'London's O2 Will Host The 'League Of Legends' Worlds Final In 2024', Forbes, 20th November 2023. Available from:

https://www.forbes.com/sites/mikestubbs/2023/11/19/londons-o2-will-host-the-league-oflegends-worlds-final-in-2024/

Witkowski, E., & Harkin, S. (2024). Esports under sports mega-event conventions: associational values, inclusivity, and national representation at the Commonwealth Games. Sport in Society, 1-21.

Yu, H. (2018). Game on: The rise of the esports middle Kingdom. Media Industries Journal, 5(1).

Virtual as an element of the concept of sport

Rômulo Dantas Alves and Rubens Venditti Junior

One of the main research topics in the esports area is defining esports, literature has been producing useful discussions about it. On one hand there are those who analyze esports as organized competitive video game or a kind of sport mediated by human-computer interaction (Hamari & Sjöblom, 2017; Jenny et al., 2017). There are others that tried to fit esports in traditional conceptual models like Suit and Guttmann theory. (Rosell Llorens, 2017), and others that considered esports don't fit in the concept of sport, because they don't fill the concept elements (Parry, 2019).

In a theoretical pathway it makes sense to look at the concept of sport as social historical phenomena. Its comprehension has changed in space and time and knowledge about it emerges from a collective intentionality that gives the phenomenon meaning in its different stages. (Borge, 2020). It's a nonsensical perception to stick to a limited understanding that refers to only one of these stages of social historical development of sports. Nowadays, society is immersed in digital technology, and taking everything to cyberspace and virtuality (Lévy, 1999). Hence, the virtual domain is an element of our social historical time (Holt, 2016). Virtual is the main attribute that makes esports possible, it's the capability to update and take place from one state to another (Lévy, 2011). Therefore, esport and sport can share the same spectrum of knowledge following the development of the sport and esport industries and technologies, as well as recognize new forms of sports practice (Naraine, 2021).

After all, if the sportive concept and phenomenon are social historical and polysemic, it's necessary to look into society to find which aspect includes video games in sports. Esports occur in a technology mediated environment to close the gap between physical and virtual domains. Thus, virtual is an element that should be considered in sports theory. Because, in this case, the virtual could change all elements of the concept of sport. (Alves, 2021; Borge, 2020).

References

Alves, R. D. (2021). Esportivização dos jogos eletrônicos e a virtualização do esporte: Mídia, Novas Tecnologias e Educação Física [Dissertação, Universidade Estadual Paulista]. https://repositorio.unesp.br/handle/11449/216015

Borge, S. (2020). What Is Sport? Sport, Ethics and Philosophy, 0(0), Article 0.https://doi.org/10.1080/17511321.2020.1760922

Hamari, J., & Sjöblom, M. (2017). What is eSports and why do people watch it? Internet Research, 27(2), Article 2. https://doi.org/10.1108/IntR-04-2016-0085

Holt, J. (2016). Virtual domains for sports and games. Sport, Ethics and Philosophy, 10(1), Article 1. https://doi.org/10.1080/17511321.2016.1163729

Jenny, S. E., Manning, R. D., Keiper, M. C., & Olrich, T. W. (2017). Virtual(ly) Athletes: Where eSports Fit Within the Definition of "Sport." Quest (00336297), 69(1), Article 1.

Lévy, P. (1999). Cibercultura. Editora 34.

Lévy, P. (2011). O que é o virtual? Editora 34.

Naraine, M. L. (2021). Actually, Esports Is Sport: A Response to Parry's (2019) Misguided View. Sports Innovation Journal, 2, 33–44. https://doi.org/10.18060/24812

Parry, J. (2019). E-sports are Not Sports. Sport, Ethics and Philosophy, 13(1), Article 1. https://doi.org/10.1080/17511321.2018.1489419

Rosell Llorens, M. (2017). eSport Gaming: The Rise of a New Sports Practice. Sport, Ethics and Philosophy, 11(4), Article 4. https://doi.org/10.1080/17511321.2017.1318947

Toxicity in online games: The prevalence and efficacy of coping strategies

Julian Frommel and Regan L. Mandryk

Toxic behavior is pervasive in esports, exposing casual players and professionals to disruptive and harmful behaviors, and affecting community culture and inclusion [1, 2, 3]. Methods for combating toxicity have not solved the issue, which is challenging due to the prevalence of toxicity, its normalization in gaming and esports, and the subjectivity about what is acceptable. Because of this, it is no longer sufficient to expect that we can prevent toxicity completely. Instead, we need to consider how players deal with toxicity [3]. While coping has been studied in the context of stress in esports [4], there is limited knowledge about how players cope with toxicity, including which coping approaches are most effective and how in-game coping tools could best support individual player coping styles.

This presentation presents findings from a study about coping with toxicity in games [3]. We conducted a formative study to collect a comprehensive list of coping approaches from toxicity literature. Then, we used affinity mapping to identify overarching game-based coping strategies. We report findings from a survey ($n = 85$) on the players' experiences with toxicity, how they employ the identified coping strategies, how games support coping, and their general coping styles. Our paper contributes a framework for coping strategies to deal with game-based toxicity and provides insights into the prevalence of these strategies among players and factors that affect their usage and effectiveness.

These findings have several implications for esports research and practice. They highlight the importance of considering coping as part of a comprehensive set of toxicity countermeasures. They guide game makers in developing better in-game tools that help mitigate the harm caused by toxicity. Finally, they can help esports players, coaches, and support staff in guiding how players can deal with exposure to toxicity, potentially supporting mental health and performance.

References

Adinolf, S., & Turkay, S. (2018). Toxic Behaviors in Esports Games: Player Perceptions and Coping Strategies. In Proceedings of the 2018 Annual Symposium on Computer-Human Interaction in Play Companion Extended Abstracts (CHI PLAY '18 Extended Abstracts) (pp. 365–372). Association for Computing Machinery. https://doi.org/10.1145/3270316.3271545

Beres, N. A., Frommel, J., Reid, E., Mandryk, R. L., & Klarkowski, M. (2021). Don't You Know That You're Toxic: Normalization of Toxicity in Online Gaming. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21) (pp. 1–15). Association for Computing Machinery. https://doi.org/10.1145/3411764.3445157

Frommel, J., & Mandryk, R. L. (2024). Toxicity in Online Games: The Prevalence and Efficacy of Coping Strategies. In Proceedings of the CHI Conference on Human Factors in Computing Systems Esports Research Network Conference 2024 (CHI '24) (pp. 1–12). Association for Computing Machinery. https://doi.org/10.1145/3613904.3642523

Poulus, D. R., Coulter, T. J., Trotter, M. G., & Polman, R. (2022). Longitudinal analysis of stressors, stress, coping and coping effectiveness in elite esports athletes. Psychology of Sport and Exercise, 60, 102093.

From consoles to campuses: Understanding intergenerational perceptions of collegiate esports

Vasil A. Arangelov, Andrew J. Wilson, Amanda C. Cote and Maxwell Foxman

Esports have rapidly grown on college campuses, creating potential avenues for career advancement (Harris et al., 2022) and financial support through scholarships (Kauweloa & Winter, 2019). Collegiate esports can also be a place for healthy psychological development (Polman et al., 2018). Despite the positives, due to pre-existing stereotypes or lack of understanding, parents may resist supporting their children's esports interests (Hong & Connelly, 2022). Parental attitudes and social beliefs are determining factors in esports development (Svensson et al., 2024), while parental styles can influence esports involvement (Bakker, 2024). This paper explores how collegiate athletes experience support from and communicate with their families to better understand current intergenerational gaming patterns.

This paper draws on 37 in-depth interviews with various participants (e.g., studentathletes, administrators, media workers) from 9 US universities regarding their experiences in collegiate esports. Transcribed interviews were analyzed using a grounded theory approach (Glaser & Strauss, 1999), which generates theories inductively through a cycle of coding, observation, and thematic sorting. Specifically, some interviewees' discussion about parental acceptance (or journey toward support) of esports as a legitimate extracurricular activity led us to pursue this line of inquiry relative to collegiate esports' role as a site for community-building, socialization, and career development (Camputaro et al., 2022).

Expectations from parents and students about college life collide when it comes to esports. Initial findings suggest a mix of support and skepticism regarding participants' involvement in collegiate esports, especially compared to more established extracurricular activities like ball-and-stick sports or student life clubs. Although the university experience is commonly understood as a time for intellectual growth and career path experimentation, some families remain apprehensive about collegiate esports participation despite its growing popularity and recognition. Our data indicate that streaming platforms like Twitch are useful tools for explaining and legitimizing esports to family members; live streaming or watching recorded matches are commonly where participants bridge the recognition gap between esports and sports.

References

Bakker, A. (2024). The Influence of Parenting on FPS eSports involvement: A Comparison Between Europe and Asia [Bachelor]. https://frw.studenttheses.ub.rug.nl/4488/

Bányai, F., Griffiths, M. D., Király, O., & Demetrovics, Z. (2019). The Psychology of Esports: A Systematic Literature Review. Journal of Gambling Studies, 35(2), 351–365. https://doi.org/10.1007/s10899-018-9763-1

Camputaro, J., Whiton, T., Hansen, J., & Serafin, A. (2022). Community, career, and competition: The University of Washington and the future of esports program building. In Understanding Collegiate Esports (pp. 121-138). Routledge.

Glaser, B., & Strauss, A. (1999). The Discovery of Grounded Theory: Strategies for Qualitative Research. Aldine Transaction.

Harris, B. C., Hansen, J., Can, O., Rahman, M. W. U., Foxman, M., Cote, A. C., & Fickle, T. (2022). "Starting from scratch to looking really clean and professional": How students' productive labor legitimizes collegiate esports. Critical Studies in Media Communication, 39(2), 141–153. https://doi.org/10.1080/15295036.2022.2030484

Hong, H. J., & Connelly, J. (2022). High e-Performance: esports players' coping skills and strategies. International Journal of Esports, 1(1). Retrieved from https://www.ijesports.org/article/93/html

Kauweloa, N. S., & Winter, J. S. (2019). Taking College Esports Seriously. Loading: The Journal of the Canadian Game Studies Association, 12(20), 35–50. https://doi.org/10.7202/1065896ar

Polman, R., Trotter, M., Poulus, D., & Borkoles, E. (2018). eSport: Friend or Foe?: 4th Joint International Conference, JCSG 2018, Darmstadt, Germany, November 7-8, 2018, Proceedings (pp. 3–8). https://doi.org/10.1007/978-3-030-02762-9_1

Svensson, J., Leis, O., & Trotter, M. G. (2024). Parental support in esports through the lens of the theory of planned behaviour. Frontiers in Sports and Active Living, 6. https://doi.org/10.3389/fspor.2024.1366122

Exploring sedentary behaviour and wellbeing of esports communities: A cross-sectional study in Scottish colleges

Mark McCready, John J. Reilly, Adrienne Hughes and Katy Weston

Sedentary behaviour is defined as time spent sitting or lying down while awake (Bull et al., 2020). Screen time is one of the most common sedentary behaviours, associated with various adverse health outcomes, including poor mental and physical health, and behavioural issues affecting children and adolescents (Oswald et al., 2020). Esports is mostly deemed to be a sedentary activity with participants exceeding 5.3-7.7 hours of screen time each session (Gomes et al., 2021). A study in the United States (DiFrancisco-Donoghue et al., 2022) found that collegiate esports players' screen time, physical activity, body fat, muscle mass and bone mineral content were poorer compared to peers. The current study has a cross-sectional, mixed methods design, exploring sedentary behaviour of Scottish college students (n=40, aged 16-31 years). Sedentary time of esports participants (n=20) was objectively measured using activPAL 4 activity monitors against a comparison group (n=20). All participants completed three questionnaires to assess wellbeing, and an additional demographics sheet was completed recording participants' age, sex, home postcode (an estimate of socioeconomic status). Esports participants (n=6-8) were invited to online semi-structured interviews to understand their motivations and barriers to introducing a digital intervention in the future to change sedentary behaviour.

References

Bull, F., Willumsen, J., & World Health Organization. (2020). WHO guidelines on physical activity and sedentary behaviour [Guidelines]. https://iris.who.int/bitstream/handle/10665/336656/9789240015128eng.pdf?sequence=1

DiFrancisco-Donoghue, J., Werner, W. G., Douris, P. C., & Zwibel, H. (2022). Esports players, got muscle? Competitive video game players' physical activity, body fat, bone mineral content, and muscle mass in comparison to matched controls. Journal of Sport and Health Science/Journal of Sport and Health Science, 11(6), 725–730. https://doi.org/10.1016/j.jshs.2020.07.006

Gomes, M. A., Narciso, F. V., De Mello, M. T., & Esteves, A. M. (2021). Identifying electronic-sport athletes' sleep-wake cycle characteristics. Chronobiology International, 38(7), 1002–1009. https://doi.org/10.1080/07420528.2021.1903480

Oswald, T. K., Rumbold, A. R., Kedzior, S. G. E., & Moore, V. M. (2020). Psychological impacts of "screen time" and "green time" for children and adolescents: A systematic scoping review. PloS One, 15(9), e0237725. https://doi.org/10.1371/journal.pone.0237725

From courts to computers: Collegiate stakeholders' perceptions of fair play and competition in esports and traditional athletics

Sara Van Wickler, Alexander Engel, Sawyer Goodwin, Briana Romfo and Ethan P. Valentine

Once viewed as the realm of dark basements and rare gaming shop events, esports (competitive video gaming) have exploded in popularity in recent years. In the collegiate space alone, there are more than 700 programs as of 2024. This growth necessitates difficult discussions about the role of esports in collegiate institutions, perceptions of esports programs among collegiate stakeholders, and the regulations governing collegiate esports competitions. The present work explores perceptions of collegiate esports regarding three areas of discussion: the use of performance-enhancing drugs by competitors, esports competitors as athletes, and institutional funding for collegiate esports programs. A survey of collegiate stakeholders (students, faculty/staff, and administrators) at collegiate institutions in the United States was conducted to assess perceptions of fairness regarding the use of performance-enhancing drugs (PEDs) in both traditional athletics and esports, beliefs about esports competitors, and support for institutional funding of esports programs. Our findings include a significant difference in perceptions of fairness of PED use between these two contexts, as well as significant divisions in views of esports and esports competitors among stakeholders. Potential explanations for these findings, opportunities for future research, and implications for esports policy makers at the collegiate level and beyond will be discussed.

Early history of esports in Czechia and Slovakia

Martin Paučin and Michal Kabát

This paper explores the historical development of esports in Czechia and Slovakia, tracing its evolution from grassroots gaming communities to its current status as a recognized competitive sport. The research aims to answer the question: "How have historical, cultural, and socioeconomic factors influenced the growth and formalization of esports in Czechia and Slovakia" to understand its current position in Europe and World.

Methodologically, this study employs a qualitative approach. Historical analysis is conducted through archival research, examining primary sources such as old gaming magazines, tournament records, early online forums and existing research outputs. Additionally, semistructured interviews with key figures in the local esports scene, including players, organizers, and industry experts, will provide first-hand insights.

Preliminary assumptions suggest that the unique cultural and historical contexts of Czechia and Slovakia have significantly shaped the development of their esports scenes. Factors such as the post-communist transition, economic conditions, and technological advancements have all played pivotal roles. For instance, the early adoption of computer clubs in the 1990s and the influence of Western and Asian gaming culture were crucial in fostering initial interest and participation, yet it came much later than to other countries with already developed game market. Additionally, the study highlights the role of national tournaments and university programs in professionalizing esports and expanding its reach.

The implications of this research are twofold. Firstly, it contributes to the broader understanding of how regional histories impact the development of global esports. Secondly, it offers practical insights for policymakers, educators, and industry stakeholders in Czechia and Slovakia to further support and nurture the esports ecosystem. This comprehensive exploration of the historical trajectory of esports in these regions not only underscores the importance of localized cultural and socio-economic factors but also provides a blueprint for fostering a thriving esports community in other emerging markets.

The physical and virtual aspects of esport

Mike Griffiths

Parry (2019; 2021) argues that esports are not sports, and likens esports to other machine-dependent activities - namely the once-popular television series, Robot Wars - in implying that esports players are indirect competitors coddled in special armchairs, distance from the action. Parry's misguided conception of esport fails to meet his definition of Olympic sport, "institutionalised, rule-governed contest of human physical skill", which further derives from his six characteristics of Olympic sport: 1. Human (not animals); 2. Physical (not chess); 3. Skill (not jogging); 4. Contest (not mountaineering); 5. Rule-Governed (not field sports); and 6. Institutionalised (not hula-hooping). It is the second, the Physical criterion, that will be considered and critiqued for this discussion.

The presentation does not dispute Parry's definition of Olympic sport, nor his ambitious claim that "no-one denies that Olympic Sport is sport". However, it does dispute the notion that esports are inadequately physical to be considered viable Olympic disciplines. The discussion, in relation to traditional sport, suggests that our conception of sport remains heavily influenced by the value society places in the physical element of sport, despite this stemming from bygone eras and outdated practices. If sport is to remain relevant and accurately reflect modern values in an unprecedented digital society, it must accommodate not just overtly physical endeavours, but also minimally physical endeavours that rely on digital and electronic technologies, namely esports.

With the first-ever "Olympic Esports Week" occurring in Singapore in 2023, and in the wake of the International Olympic Committee recently alluding to the creation of an "Olympic Esports Games", it is pivotal that we gain a better understanding of, and place appropriately value in, physical and virtual entities; and more specifically, how we conceive virtual entities in physical ways.

The evolution of competitive gaming

Federico Winer

The "Mountain of Tomorrow" graph encapsulates the dynamic evolution of esports from its nascent stages before the 2000s to its expected position at the frontier of global entertainment by 2025. Initially marked by the emergence of the term "esports" in 1999 and the establishment of foundational tournaments like the Cyberathlete Professional League in 1997, the landscape has significantly expanded.

By the early 2000s, pivotal game releases like "Counter-Strike" and the founding of key esports associations in Russia and South Korea set the stage for rapid growth. The decade that followed saw an explosion of iconic titles like "DOTA" and "League of Legends," and the onset of landmark events such as the World Cyber Games and the International Esports Federation's inception.

By 2020, the sector is characterized by strategic initiatives like Amazon University Esports and a proliferation of national federations across the world, with an emphasis on regional growth and professionalization. The release of "Counter-Strike 2" in 2023 and anticipated events like the "Games of the Future" in 2024 signify the relentless innovation within esports.

Looking ahead to 2025, esports stands as a cultural phenomenon, underpinned by a robust phygital (physical + digital) community, signaling its cemented status as a leading form of 21st-century entertainment. The upcoming "Games of the Future" event in 2024 showcases the forward-looking trajectory of esports. The graph highlights the institutionalization and cultural penetration of gaming, positioning it as a cornerstone of modern entertainment.

Queering esports: Exploring how esports online communities foster diversity through a queer theory lens in video game narratives

Leonardo Castro, Yevhenii Lokhtin and Sameer Shukla

The study aims to uncover the ways in which video game narratives can challenge heteronormative structures, promote inclusivity, and empower marginalized voices in esports online communities. By examining the portrayal of queer identities, relationships, and storylines in esports games, this research seeks to shed light on the potential of video games to serve as platforms for social change and advocacy for LGBTQ+ rights. This abstract delves into the intersection of queer theory and diversity within esports, specifically examining how video game narratives can challenge heteronormative structures and promote LGBTQ+ representation. Building upon this exploration, the study will extend its analysis to the realm of esports online communities in three YouTube videos. The research questions that stand for this study are: How do video game narratives develop to foster diversity within esports online communities, and how can supportive strategies and best practices be implemented to foster a more inclusive environment for LGBTQ+ individuals? To answer these questions, we propose an analysis through the lens of queer theory perspectives. By employing videography as a methodology, this research analyzes the interactions, discourse, and representation of LGBTQ+ individuals within esports online communities. By applying queer theory to examine the dynamics of these communities, the study aims to uncover opportunities for enhancing inclusivity, challenging stereotypes, and amplifying marginalized voices within the esports space. The implications of this research are twofold: first, it seeks to contribute to the academic discourse on queer theory in digital spaces, particularly within the context of esports; second, it aims to provide practical insights for fostering supportive and inclusive environments for LGBTQ+ individuals within esports online communities. By shedding light on the experiences and challenges faced by LGBTQ+ gamers, this study aspires to pave the way for the implementation of effective strategies that promote diversity in esports online spaces.

Does biofeedback training improve the performance of esports players? Development of training methods based on gaze movements and cortical theta-alpha activity

Inhyeok Jeong, Naotsugu Kaneko, Donghyun Kim, Ryogo Takahashi, Seitaro Iwama, Mayu Dohata, Junichi Ushiba and Kimitaka Nakazawa

Reducing reaction time is crucial for improving the performance of esports players. Here, we aim to reduce reaction time in esports players through two biofeedback trainings using electroencephalogram (EEG) signals and gaze movement. In EEG-feedback training, participants were divided into sham- and biofeedback-training groups. The biofeedback-training group utilized a 3-channel EEG headset to receive audio feedback based on the theta and alpha power, which are associated with sustained attention. Before and after training, participants played three types of tasks created by AimLab. The results showed that EEG-feedback training reduced the reaction time (mean: 53.5 milliseconds ± 28 milliseconds) of the biofeedback-training group compared to the sham-training group. The gaze movement training provided feedback to help keep the gaze focused on the center of the screen, with a warning sound signaling when the gaze drifted off-center. Participants were divided into training and non-training groups. Before and after the gaze movement training, participants performed a reaction time task created using AimLab. According to the results, gaze movement training reduced the reaction time (mean: 40.2 milliseconds ± 37.1 milliseconds) of the training group, but not the non-training group. These results suggest that biofeedback training can reduce the reaction time in esports players.

Sim racer expertise affects attention allocation when racing

John M. Joyce, Mark J. Campbell, Fazilat Hojaji and Adam J. Toth

Simulated (sim) racing is a growing esport but is relatively under-researched in terms of expertise and performance. As sim racing lacks the vestibular feedback found in real-world racing, sim racers must rely more on visual feedback to navigate the virtual racetrack. Thus, we aimed to investigate whether high- and low-skilled sim racers differed in attention allocation.

In this study, 104 participants were tested, with 88 participants included in analysis following exclusions. Participants were required to drive 8 laps around Brands Hatch on Assetto Corsa Competizione. Gaze data were recorded using Tobii Pro Glasses 3. Areas of interest were created encompassing the track and heads-up display (HUD). Variables of interest included fixation count, average and total fixation duration.

Results indicate that there were significant differences in the relative length of overt attention allocation. Lower-skilled sim racers had significantly greater total fixation durations when normalised. High- and low-skilled sim racers differed in where they allocated attention during the task. High-skilled allocated significantly less attention to the track relative to the HUD.

High-skilled sim racers appear to need significantly less attention throughout a fast lap. Conversely, the greater length of attention allocation in low-skilled sim racers may suggest that they are taking longer to process on-track information. Moreover, lower-skilled sim racers may not have the attentional resources to fully utilise the HUD compared to high-skilled sim racers.

Esports pre-participation screening tool: An investigation of the health of esports players

Sam Di Nicola, Connaire Delaney McNulty, Andrea Marchesi, Alex Buoite Stella and Craig McNulty

With the exponential growth of esports, increasing attention is being directed towards the identification, management, and prevention of risks for esports athletes. This study aims to develop a simple tool for identifying potential risks faced by esports players. Additionally, the collected data was used to analyze the current status of esports athletes. A total of 210 esports players participated in a survey that gathered information on demographics, general gaming habits, physical health, gaming-related physical health, physical activity, well-being, sleep, and nutrition. The results indicated that 47.6% of participants reported poor well-being, suggesting a need for further investigation. Despite these findings, only 5.7% of the participants rated their current health condition as poor. Overall, while most esports athletes perceived their health to be good, their scores on various well-being scales were low. These results underscore the necessity for a straightforward tool to identify potential risks. In conclusion, we believe the survey is effective in highlighting potential risks among esports players, emphasizing the importance of continued attention to their health and well-being.

Play to exhaustion: Muscular fatigue and perceived physical exertion in esports

Chuck Tholl, Lasse Hansen and Ingo Froböse

Muscular fatigue is a critical factor influencing performance, safety, and health in daily activities and sports. Esports involves prolonged sitting and repetitive upper extremity movements, posing a risk of muscular fatigue. Continuous activity may decrease performance and increase exertion short-term, with potential long-term adverse health effects. Currently, there is a lack of biomechanical analysis in esports. This study aims to investigate the impact of esports activities on electromyography (EMG) parameters and perceived physical exertion, addressing this gap in the literature. Thirty-two healthy male esports athletes participated in two competitive video gaming sessions (90-120 minutes), with a 10-minute passive sitting break. Surface EMG data of upper trapezius muscles and wrist extensors were recorded, along with repeated measures of perceived physical exertion using the Borg Categorical Ratio-10 scale before and after each session. Muscular fatigue was quantified using the Joint Analysis of Spectrum and Amplitude (JASA). Friedman's test was used to analyze the Borg Scale.

The results showed a significant difference in the Borg scale ($p < 0.001$). Muscle fatigue is expected to differ between muscle groups and body sides. This study provides insights into muscular fatigue and perceived exertion in esports athletes, which could inform improved training routines and rest management.

E3: Enhancing the esports experience

Sven Charleer, Laura Herrewijn, Simone Kriglstein, Günter Wallner and Hans Cauwenbergh

E3 is an interdisciplinary exploration of the diverse field of esports and Human Computer Interaction (HCI) focusing on various stakeholders in the esports domain, including spectators, team players, managers, and broadcasters. The workshop accepts submissions from all disciplines, both ongoing research as well as future projects, proof of concepts, and industry applications, exploring topics such as design concepts aimed at enhancing spectator experience, team training and management, player/team analytics, esports environments and streaming platforms. E3 is organized by an international team of renowned researchers with expertise in video game data visualization, analytics, and user experience.

Next level edutainment: How holistic approaches to esports in education can impact current and future learners

Joey Gawrysiak, Seth E. Jenny, Nikita Bair and Danielle Rourke

The esports in education landscape continues to evolve with enhanced offerings to support learning in a number of different ways. As institutions understand how to leverage esports as an educational opportunity, it is important to know what the current structure looks like as well as see what the future holds in order to provide a unique and holistic esports experience at home institutions. Esports can be used as a center of student engagement and entertainment on campuses, but also as a means of professional development, scholarly undertaking, and career preparation in a way that no other discipline can be used to reach mass appeal. Come hear from a panel of experts across different aspects of esports in education as they explain the current trends they see across North America and where they think esports needs to go to impact learners and institutions through the lens of esports and gaming. The audience will learn about aspects related to competition, the facilities "arms race", curriculum in and around esports and gaming, student engagement and recreational experiences, and professional development. This panel will speak about their personal experiences and what they see as the next innovations for esports in education.

An open discussion with the editors, authors, and reviewers of the
Routledge Handbook of Esports

The Routledge Handbook of Esports offers the first fully comprehensive, interdisciplinary study of esports. Global in coverage, the book explores the most pressing issues defining the competitive video gaming landscape today. The 62 book chapters are structured around ten key themes: 1) Introduction to Esports, 2) Esports Research, 3) Esports Players, 4) Esports Business and Management, 5) Esports Media and Communication, 6) Esports Education, 7) Critical Concerns in Esports, 8) Global Esports Cultures, 9) Esports Future Directions, and 10) Key Terms Definitions.

Featuring the work of 93 leading esports academics and industry specialists from around the world, and rigorously peer-reviewed by 152 reviewers, this project is the culmination of many Esports Research Network (ERN) member's work. Led by the editors, the purpose of this open discussion is for anyone involved (i.e., editors, authors, reviewers, interviewees, etc.) to reflect on their positive experiences, learnings, and challenges regarding working on this project, as well as voice recommendations for future editions or ideas concerning other related research. While the session is open to anyone, authors and peer reviewers of the Routledge Handbook of Esports are strongly encouraged to attend. All attendees will gain a greater appreciation of the academic publishing process.

Presenters:

- Seth E. Jenny, Senior Editor, Department of Exercise Science, Slippery Rock University of Pennsylvania, USA

- Nicolas Besombes, Associate Editor, Department of Sport Sciences, Université Paris Cité, France

- Tom Brock, Associate Editor, Department of Sociology, Manchester Metropolitan University, UK

- Amanda C. Cote, Associate Editor, Department of Media and Information, Michigan State University, USA

- Tobias M. Scholz, Associate Editor, Department of Information and Communication Technology, University of Agder, Norway

- Simon Whitmore, Senior Publisher, Sport & Leisure, Routledge Books, UK

ERNC24 Committee Members

Conference Chairs

Tom Brock

Cameron Vanloo

Organising Committee

Russell Campion

Joshua Ferguson

Milena Rodriguez Guevara

Joshua Lindsey

Ivan Philips

Scientific Committee

Nico Besombes

Amanda Cote

Joanne Donoghue

Julia Hiltscher

Jaewon Jin

Seth Jenny

Oliver Leis

Brian McCauley

Tobias Scholz

Conference Venue

Staffordshire University London - Digital Institute, Here East, London, United Kingdom

Publication

Full papers from ERNC2024 may be submitted for consideration for a special issue of the *Journal of Electronic Gaming and Esports* (*JEGE*).