

**AN EXPLORATION INTO PSYCHOLOGICAL ATTRIBUTES AND MENTAL
TECHNIQUES UTILIZED IN PROFESSIONAL ESPORTS**

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ABSTRACT

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The purpose of this thesis was to explore the most important psychological attributes in esports and the types of mental techniques utilized by professionals and coaches. The research data was collected in spring 2023 through interviews. We interviewed four (4) players and two (2) coaches, all professionals in the field of esports. The interviews followed a semi-structured interview method. Five interviews were conducted remotely via video call using Zoom, and one was conducted at the premises of the University of Jyväskylä. The duration of the interviews ranged between 60 minutes and 91 minutes.

We chose qualitative data-driven content analysis as our method of analysis, and the philosophical foundation of our research was phenomenological-hermeneutic. The thesis delved into the essential psychological attributes and mental techniques in esports, as identified by professionals in the field. The collected data comprised 99 pages of transcribed interviews, formatted in 12-point font with 1.5 line spacing between paragraphs. Our findings, totaling 607 mentions, highlights the significance of team dynamics (n=154), psychological attributes (n=277), and mental techniques (n=176). These were organized into 30 upper classes and 3 main categories, illustrating the intricate interplay of performance psychology within professional esports.

This thesis investigated the psychological attributes and mental techniques essential for professional esports performance, categorizing them into three main classes: team dynamics, psychological attributes, and mental techniques. It highlights the importance of attributes such as awareness, confidence, and focus, along with techniques like self-regulation and imagery, for peak performance. Team dynamics, including cohesion and communication, were also identified as crucial for success. The study provides valuable insights into esports psychology and the potential implementation of mental training practices. It also highlights 'flow-state' as a promising area for future investigation, informed by the results obtained. By illustrating the interconnectedness of these elements, the thesis advocates for a holistic approach to enhancing esports performance, suggesting landscapes for further exploration in the interplay between psychological attributes, mental techniques, and team dynamics.

Keywords: esports, competitive gaming, sports psychology, psychological attributes, mental techniques

TIIVISTELMÄ

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Tämän opinnäytteen tarkoituksena oli perehtyä selvittämään, mitä psykologisia ominaisuuksia e-urheilussa koetaan tärkeimmiksi ja millaisia psyykkisiä tekniikoita ammattilaiset käyttävät. Tutkimusaineisto kerättiin keväällä 2023 haastatteluiden avulla. Haastattelimme neljää (4) pelaajaa ja kahta (2) valmentajaa, jotka ovat ammattilaisia e-urheilussa. Haastattelut noudattivat puolistrukturoidun ja teemahaastattelun menetelmiä. Viisi haastattelua toteutettiin etäyhteydellä videopuheluna Zoom – ohjelmalla ja yksi Jyväskylän yliopiston tiloissa. Haastattelujen kesto vaihteli 60min ja 91min välillä.

Analyysimenetelmäksi valitsimme laadullisen aineistolähtöisen sisällönanalyysin ja tutkimuksemme tieteenfilosofinen lähtökohta on fenomenologis-hermeneuttinen, sillä tutkimuksen tarkoituksena oli tutkia haastateltavien kokemuksia. Haastatteluaineistoa kertyi yhteensä 99 sivua 12 fontilla ja 1,5 rivivälillä. Sisällönanalyysin tulokset, yhteensä 607 mainintaa (n=), korostavat joukkuedynamiikan (n=154), psykologisten ominaisuuksien (n=277) ja psyykkisten tekniikoiden (n=176) merkitystä. Nämä jaettiin 30 yläluokkaan ja 3 pääluokkaan, kuvaten suorituskyvyn psykologian monimutkaista vuorovaikutusta ammattimaisessa e-urheilussa.

Tämä pro-gradu tutkielma tutkii psykologisia ominaisuuksia ja psyykkisiä tekniikoita, jotka ovat olennaisia huipputasen e-urheilussa, luokitellen ne kolmeen pääluokkaan: joukkuedynamiikka, psykologiset ominaisuudet ja psyykkiset tekniikat. Se korostaa tietoisuuden, luottamuksen ja keskittymisen kaltaisten ominaisuuksien sekä itsesäätelyn ja mielikuvaharjoittelun kaltaisten tekniikoiden merkitystä huippusuorituksen saavuttamisessa. Tutkimus tarjoaa arvokkaita näkemyksiä e-urheilun psykologiasta ja psyykkisten harjoitusmenetelmien mahdollisista valmennuskäytännöistä. Se myös korostaa 'flow-tilaa' lupaavana alueena tulevaisuuden tutkimukselle, tuloksissa saadun tiedon valossa. Myös joukkuedynamiikka, mukaan lukien ryhmän koheesio ja kommunikaatio, tunnustetaan menestyksen kannalta ratkaiseviksi. Osoittamalla näiden tekijöiden välisiä yhteyksiä tutkielmamme suosittelee kokonaisvaltaiseen lähestymistapaan e-urheilun suorituskyvyn parantamisessa. Näin ollen myös kannustamme tutkimaan psykologisten ominaisuuksien, psyykkisten tekniikoiden ja joukkuedynamiikan välisiä yhteyksiä ja vaikutuksia syvällisemmin.

Asiasanat: e-urheilu, kilpapelaaminen, urheilupsykologia, psykologiset ominaisuudet, psyykkiset tekniikat

Credit author statement.

Planting, Salomaa: Conceptualization, Methodology, Data curation, Writing, Original draft preparation, Validation, Reviewing, Editing, Visualization. Investigation.

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1 INTRODUCTION

Esports, also referred to as competitive gaming, has experienced rapid and substantial growth in popularity (Pedraza-Ramirez et al., 2020). This surge can be attributed to two primary factors: advancements in technology and a heightened level of competition (Heaven, 2014; Jenny et al., 2017). Esports is a new form of competition and entertainment for viewers, where individuals or teams play in front of a large audience (Pedraza-Ramirez et al., 2020; Railsback & Caporusso, 2019).

Situations in games unfold in milliseconds, and players experience high amount of pressure in front of large audiences. The situations are also highly complex, and players require a tremendous amount of mental toughness to prevent things from spiraling out of control. Polman (2018) states that high-level esports demand elevated levels of attention, quick and accurate responses to stimuli, and effective decision-making under pressure. In esports, similar to traditional sports, it is crucial to identify the key psychological skills required. This understanding enables the development of targeted training programs aimed at optimizing and enhancing player performance (Trotter et al., 2021). The similarities in psychology between these fields imply that the practices and techniques of sport psychology utilized in conventional sports could be applicable in esports (Polman et al., 2018). According to Garcia-Lanzo et al. (2020) gamers need psychological skills similar to those demanded of traditional athletes.

Our study employed a phenomenological-hermeneutic foundation to investigate the psychological attributes and mental techniques required in esports, as perceived by players and coaches. This philosophical approach emphasized the importance of individual experiences and their connections to others, culture, and the environment, thereby enabling a profound exploration of subjective meanings and communal aspects within esports (Finlay, 2012). The research methodology of this study was qualitative, chosen to facilitate a deeper understanding of the psychological factors deemed crucial by esports professionals. We conducted semi-structured interviews to delve into the experiences of both coaches and players. This format was particularly useful for its flexibility, allowing us to clarify misconceptions, refine expressions, and engage in open discussions, thus ensuring a comprehensive exploration of the participants' experiences (Tuomi & Sarajärvi, 2018). Additionally, we employed content analysis as our method of data examination. This approach was ideal for identifying similarities, differences, and patterns within the interview data.

In our literature review, we begin by exploring esports from different angles and examining the psychological traits associated with them. Our goal is to give the reader a comprehensive understanding of what esports involve. Following this, we delve into the specific attributes and characteristics that professionals in esports are required to possess. Additionally, it's crucial to note that many of the most popular esports are team-based games. Therefore, we also aim to analyze the dynamics related to teamwork within these contexts. Garcia-Lanzo et al. (2020) assert that a crucial psychological prerequisite for esports arises from its intrinsic social characteristics.

In recent years, esports has garnered attention and been integrated into the field of sport psychology (Pedraza-Ramirez et al., 2020). Concurrently, the number of mental coaches, performance coaches, and sports psychologists in esports has seen a significant increase (Garcia-Lanzo et al 2020; Polman et al., 2018; Trotter et al., 2021). Therefore, if specific data on these psychological attributes and mental techniques can be gathered in the future, it could prove immensely beneficial for refining coaching and performance strategies in esports.

2 ESPORTS

2.1 What is esports?

Esports, though increasingly recognized, faces varying definitions that reflect its complex nature and the ongoing debate about its classification as a sport. While some definitions emphasize its competitive elements similar to traditional sports, others highlight differences, particularly in physical exertion and commercial influences. For instance, Pedraza-Ramirez et al. (2020) note the lack of detailed definitions, while Ruvalcaba et al. (2018) characterize esports as competitive video gaming where players vie for prizes, emphasizing its competitive aspect akin to traditional sports. Similarly, the Korea Electronic Sports Association (KeSPA) as cited by Karhulahti (2017) describes esports as an online leisure activity marked by competition and skill, which aligns with traditional sports' characteristics of competition and skill requirements. However, Karhulahti points out that esports distinctively integrates commercial elements, being based on games developed by private companies, thus adding a layer of commercialization absent in many traditional sports.

The concept of physical activity further complicates the categorization of esports. According to the Council of Europe (2001), sports involve physical exertion aimed at improving physical fitness, mental well-being, and forming social relationships. Yet, esports' physical demands, as argued by Hamari & Sjöblom (2017), primarily involve human-computer interaction through user interfaces, which does not equate to the more intense physical activity seen in sports like football or tennis. This perspective is corroborated by various comparisons to activities like archery or chess, which, despite their recognition as sports by entities like the International Olympic Committee, share minimal physical exertion similar to esports (Pedraza-Ramirez et al., 2020).

Further complicating the issue, the International Olympic Committee recognizes the sportive nature of esports but notes its limitations in physical activity and organizational structure (Kemp et al., 2020). Definitions of physical activity by the World Health Organization (2017) and others typically emphasize movement and energy expenditure, leading to divergent views on whether esports can be classified alongside physically demanding sports.

The German Olympic Sports Federation's criteria for recognizing a sport, as discussed by Hallman & Giel (2018), include physical activity, ethical values, and organizational structure. By these standards, the physicality of esports, which relies heavily on fine motor skills rather than the gross motor skills predominant in traditional sports, presents a nuanced challenge. Nonetheless, the acceptance of chess by the same federation underscores the evolving nature of sports recognition, which can include activities with minimal physical exertion. Thus, while esports shares several foundational elements with traditional sports, including competition, skill, and ethical considerations, its classification as a sport remains subject to debate due to its distinct characteristics in physical engagement and commercial origins.

2.2 Esports history

There are many different views on the birth of e-sports. According to Bhatt (2021) the first esports event was in 1972 at Stanford University, where students competed by playing a video game called Spacewar. Another special event that comes up is the First National Space tournament held with 10,000 participants in New York in 1980. The tournament in question was shown as a live TV broadcast, with which esports following from the home sofa was born. (Bhatt 2021.) According to Karhulahti (2017), real-time strategy game StarCraft will be the first major e-sports video game. of recent years esports has become more and more well-known and its popularity has grown unprecedentedly way in the world of information technology and entertainment. Fans and live events are active components for growth. (Railsback & Caporusso 2019.)

Although the history of esports dates back to the beginning of the video game era, in recent years esports has grown rapidly has matured into a professional industry that has captivated a large and growing audience. In 2017, the most watched esports event reached a peak of 75.5 million viewers, while the same year a little over 20 million people watched the NBA finals. (Railsback & Caporusso 2019.) Competitive gaming, better known as esports, has grown in popularity by leaps and bounds at speed (Pedraza-Ramirez et al. 2020). Two main reasons for its growth are improved technology and an increase in the level of competition (Heaven 2014 Heaven 2014; Jenny et al. 2017). The competition is fierce, according to athletics event organizer Martin Wyatt, the performance is at elite level (Heaven 2014). Popularity and growth

play a very important role in defining esports for those for whom the field is still unknown (Railsback & Caporusso 2019).

Based on the history of video games, esports can be classified into two eras: arcade era and the internet era. During the early arcade era (1980s to the 1990s) popular esports games were NBA Jam and Virtual Racing. Other sports games gained popularity with the development of the Internet through local area networks (LAN). The development of the local network so to speak LAN technology, changed the way how esports was played against computer, to play against another person. (Griffiths, et al., 2003.) Later in the history of esports, the popularity of games played as a team has stepped into the spotlight by leaving solo games behind (Railsback & Caporusso, 2019).

One of the most popular esports games is League of Legends (LoL), which in 2013 had more than 70 million registered players. Thirty-two million of them were monthly active players. (Snider, 2013.) In October 2013, the LoL championships collected 8.5 million concurrent viewers online. The number of spectators in question corresponded to that of the game in the same year following the deciding game of the National Hockey League (NHL) Stanley Cup final the number of people. Globally, in 2014, more than 70 million people followed esports via the internet or television. (Wingfield, 2014.) According to Kemp et al., (2020) latest information, competitive gaming, or so-called esports is a rising phenomenon that already has 454 million fans around the world.

Compared to traditional sports in US, esports has already increased in audience numbers second in the USA, leaving behind leagues such as the National Basketball Association (NBA), National Hockey League (NHL) and Major League Soccer (MLS) . In the United States alone, the number of viewers of athletics is estimated to rise to 84 million by 2021. For the time being, however, the National Football League (NFL) dominates the audience numbers with 141 million by the viewer. (Kemp et al. 2020.)

Esports events not only attract the attention of fans and spectators they also attract huge revenues. As esports has developed, so have the prize pools. (Bhatt 2021; Railsback & Caporusso, 2019.) The prize of the 1972 Spacewar tournament was a free 12-month subscription to Rolling Stone magazine (Bhatt, 2021). In the year 1999 prize pools averaged less than \$100,000, while in 2015 it rose to over \$600,000 to USD per esports event (Railsback

& Caporusso, 2019). The biggest of 2019 prize money was \$15.6 million, which was distributed in The International of the Dota 2 game in the championship tournament in Shanghai (Bhatt, 2021). According to DotA 2 Prize pool tracker, (2024) in 2021 The International tournament prize pool rose to over \$40 million, of which the winning team received \$18.2 million.

Esports is moving towards a structured and profitable business model where the players are directed to professional leagues and tournaments. For example, from spring 2018, NALCS (North American League of Legends Challenger Series) changed the format of its league arrangement so that a league spot for each team in the series costs \$10 million. (Railsback & Caporusso 2019.) According to the National Association of Collegiate Esports, there are more than 170 in the world member schools that offer over \$16 million in esports scholarships. It is an exponential jump from the association's inception in July 2016, when only seven the college and university had varsity and esports programs. In addition, global sponsorship revenue alone in 2020 was nearly \$637 million. (Bhatt 2021.)

3 PERFORMANCE PSYCHOLOGY IN ESPORTS

The psychological landscape of esports performance is an area that warrants further exploration, especially with the rise of competitive gaming, now known as esports. Understanding the intricacies of performance factors in gaming is crucial (Pedraza-Ramirez et al., 2020). Esports psychology offers numerous unexplored research avenues, such as investigating stress and coping mechanisms and comprehending the psychological and cognitive demands across various esports disciplines (Leis et al., 2021).

The acknowledgment of psychological demands as crucial for success in esports parallels the importance attributed to these factors in traditional sports (Cottrell et al., 2018). Pedraza-Ramirez (2020) outlines esports as an optimal domain for sport psychology research, underscoring its integration into applied sport psychology. Esports players are required to demonstrate a combination of psychological skills, such as decision-making, communication, and attention, along with in-game skills like hand-eye coordination and game knowledge, to effectively meet the demands of their profession. Additionally, Cottrell et al. (2018) emphasize that motivation, emotional regulation, and team cohesion as additional psychological demands integral to esports performance.

Despite these recognitions, the distinctive psychological demands inherent in various esports disciplines lack a comprehensive understanding, highlighting the need for an improved performance evaluation that goes beyond measurable outcomes and statistics (Pedraza-Ramirez, 2020). The existing literature in esports psychology is evolving, but there is still a notable gap in understanding the nuanced psychological and cognitive factors crucial for high-level esports performance. Further research in this specialized area is imperative for building a robust foundation and enhancing the effectiveness of sport psychology interventions tailored to the unique demands of esports.

Addressing these gaps requires further research in esports psychology to establish a comprehensive framework, serving as a guide for coaches, sport psychologists, and players. A framework like this can facilitate holistic professional development within the esports realm. While esports present ample opportunities for the application of sport psychology, the limited number of professional teams still restricts these opportunities (Cottrell et al., 2018).

3.1 Team psychology

In this chapter, we explore the concept of team psychology within traditional sports to understand its fundamental principles and applications. The focus on traditional sports is pivotal because it provides a well-established foundation of research and practices that are relevant across various team-oriented activities, including esports. By examining how team psychology is addressed in traditional sports, we can appreciate the intricate dynamics of group behavior, the importance of cohesion, and the psychological strategies that enhance team performance. This exploration is crucial as it lays the groundwork for understanding team interactions and the collective mindset, which are essential components for success in any team-based endeavor, particularly in the esports setting.

The sport psychology literature highlights a notable constraint in much of its research, which primarily focuses on individuals rather than specific groups such as teams (Cotterill, 2012; Woodman & Hardy, 2003). Although there is an increasing number of sport psychology textbooks available, only a few exclusively address the team/group performance of sports teams. While many of these textbooks feature a chapter or two on the subject, often centered around team cohesion, they tend to offer only surface-level discussions on team-related psychology. This superficial treatment is largely attributed to a general lack of emphasis on the specific practices employed by practitioners when working with teams (Cotterill, 2012).

According to Wilfred Bion (1979), a group is defined as a gathering of people who share a common goal or objective. Kurt Lewin (1947), in turn, describes that a group is not a collection of individuals, but rather a set of relationships among its members. A well-functioning group appears to be a strongly influential element in an individual's developmental quality. Within the group, a person's self-awareness evolves in relation to others, providing an excellent opportunity for individuals to learn about themselves (Laine, 2005). In every group, there is a certain degree of cohesion and belongingness experienced. Group cohesion is indeed a significant characteristic of small groups, which may seem like an easy concept to grasp, but it is not entirely straightforward (Carron et al., 2012, pp. 259–271).

A sports team can be defined as a group comprising two or more members who share a common factor, goal, and task, and who share the same experiences. They engage in ongoing interaction and share perspectives on the group while being interdependent. Working within a team

provides diverse social situations to practice interpersonal skills (Lumpkin, 2010). According to Evans & Dion (2012) as well as Aoyagi et al., (2008), group cohesion and performance correlate positively with each other.

Group cohesion is composed of four fundamental characteristics (Carron et al., 2012, pp. 259–271). Firstly, it exhibits multidimensionality, influenced by various factors specific to each group. Despite lacking close friendships, a group can still perform well in training and games. Secondly, cohesion within a group is dynamic, constantly evolving over time. Initial factors that unite members may differ in more established groups, and success or failure affects this cohesion (Rovio, 2009, pp. 156–158). Thirdly, task cohesion centers around the common purpose or goal that unites the group, serving as a primary factor in its cohesion. Finally, social cohesion is based on positive emotional relationships among members, which often develop and strengthen over the group's lifespan. These characteristics collectively contribute to the overall cohesion and functioning of a group. (Rovio, 2009, pp. 156–158).

Cohesion and group performance are mutually related. Group performance enhances cohesion, and cohesion enhances group performance. Task and social cohesion also affect group performance, so promoting both characteristics is justified (Rovio, 2020, pp. 322–324).

Recognizing the influence of psychological factors on the entire team is essential for optimizing performance. Even seemingly individual factors like rest and recovery must also be addressed collectively at the team level (Cotterill, 2012). Cotterill (2012) has assembled various psychological factors that hold considerable sway over team performance. These factors span a spectrum of elements, including group dynamics, emotions, momentum, preparation and planning, the team environment, leadership, and psychological recovery.

3.2 Psychology of esports athletes

While scientific research on the psychology of esports remains limited, a review article by Banyai (2018) has identified three key topics that have been investigated: the path to becoming an esports player, the characteristics of esports players, and the motivational aspects of watching esports. Notably, the author concludes that the journey and motivations for becoming an esports player may closely resemble those of traditional athletes.

Banyai (2018) also delves into the motivators for becoming an esports player, focusing on psychological needs. The article identifies three primary psychological needs fulfilled by esports: competition, challenge, and escapism, with escapism recognized as a general motivator for video gaming. Additionally, player satisfaction and fulfilment of life goals were identified as motivators, varying individually among players. Understanding these motivators not only contributes to the thesis's background but also enhances comprehension of the primary driving forces behind players' involvement in esports. This review article significantly contributes to establishing a robust foundation and overview of psychological research in esports, which proves valuable for the thesis by aiding in the development of a comprehensive profile of an esports player, a crucial aspect for the study.

In the exploration of the psychology of esports athletes, a qualitative analysis (Poulus, 2020) focused on perceived determinants of success revealed some significant insights. The study resulted in 401 codes, which were categorized into 12 lower-order themes and grouped into three higher-order themes. These themes offer valuable insights into the psychology of professional esports athletes.

One prominent theme was the "Performance Mindset," encompassing elements like flow, focus, and confidence. Notably, participants exhibited an "unshakable confidence," fostering a steadfast belief in their ability to secure victory. Mental performance strategies emerged as another crucial aspect, involving self-regulating strategies, emotional regulation, and maintaining mindfulness. Athletes actively sought to calm themselves down and achieve a mental reset during critical moments. (Poulus, 2020) Other mental skills crucial for success in esports have also been identified, including attributes such as hyperfocus, increased confidence, and effective stress and anxiety management. These skills have been suggested to be essential for achieving peak mental performance in esports. (Daubert, 2021)

Exploring performance behaviors, various techniques were identified, including breathing exercises utilized before, during, and after games. Tactical breaks, such as standing up, walking, and staying hydrated, were also integral components. Identified stressors encompassed breakdowns in teammate communication, ineffective performance strategies, overcommunication, negative emotions, and experiences of tilt, characterized by anger, frustration, and annoyance. (Poulus, 2020)

The training environment played a pivotal role, emphasizing the importance of reviewing both personal and professional games beyond mere gameplay. Participants dedicated up to six hours per day to playing the game, maintaining an intensity level ranging from 60% to 90%. Addressing the challenges faced by esports teams, the study highlighted the utilization of team-building exercises to foster cohesion and prevent interpersonal breakdowns, identified as one of the major stressors in the esports domain. (Poulus, 2020)

Himmelstein and colleagues (2017) acknowledged that video game players across various age groups exhibit enhanced attentional skills. Notably, these players demonstrate increased information processing speed compared to their casual counterparts. The significance of effective communication, encompassing both verbal and non-verbal aspects, is underscored in team-centered games within the eSports realm. Recognizing the importance of mental fortitude, eSports teams have increasingly turned to hiring sport psychologists. The proposed psychological skills for optimal performance span a range of attributes, including attitude, motivation, goals and commitment, people skills, self-talk, mental imagery, effective anxiety management, coping with emotions, and sustaining concentration.

Professional esports athletes also grapple with several barriers, with psychological challenges being prominent. The short duration of player careers induces stressors and potential negative impacts. Burnout is a common phenomenon, linked to rigorous practice requirements. Furthermore, early career onsets and short career spans often leave players without proper education, adversely affecting their post-professional prospects (Leis et al., 2021). All these factors also demand more resources to combat.

The results from these studies provide valuable insights for our thesis. The psychological aspects studied, and the yielded results closely align with the research questions posed in this thesis. These studies establish a solid foundation of knowledge on the topic, against which this thesis results can be compared.

3.3 Sport and exercise psychology in esports

Polman et al. (2018) highlight that some research has explored the similarities and differences between traditional sports and esports. Specifically, the psychological parallels between these disciplines suggest that sport psychology practices and techniques used in traditional sports may find application in esports. Beyond this, there are additional reasons to consider the relevance of traditional sport and exercise psychology in an esports context. The longstanding connection between physical and cognitive development and performance is well-established, (Hernández-Mendo et al., 2019) and Polman et al. (2018) assert that psychology indicates that a well-rounded development of a healthy body can improve the growth and performance of the mind. While more research is necessary to validate the claim that high-performance in esports is linked to being healthy and fit, it is not unreasonable to hypothesize that exercise psychology could positively impact game performance.

Himmelstein et al., (2017) proposed that esports share psychological factors and needs similar to those in traditional sports. This observation opens up opportunities for the application of sport psychology principles in esports. However, there are acknowledged barriers that warrant consideration. Garcia-Lanzo et al., (2020) outlined some of these barriers, highlighting challenges such as adapting to the online environment in which many teams and players operate, navigating the new and evolving landscape of esports within the field of sport psychology, and the shortage of professionals with extensive experience in this domain.

The authors concur with the identified barriers and emphasize the necessity for adaptation to the esports environment as a crucial factor for the successful application of sport psychology in esports. This implies that sports psychologists seeking involvement in esports need to enhance their skills related to online work and the utilization of new technologies, as well as a greater understanding of the psychological demands inherent to esports performance. Special attention should be given to tools specifically relevant to electronic sports. In essence, a proactive approach in honing skills aligned with the unique aspects of esports will enhance the effectiveness of sport psychology interventions in this dynamic and evolving field. (Garcia-Lanzo et al., 2020)

3.4 Esport performance

To investigate the factors influencing game performance among high-level League of Legends players, it is essential to establish a clear understanding of what constitutes performance. The term "high-performance" has become ubiquitous across various contexts, such as work, career, and sports, referring to behaviors and actions aimed at achieving success or goals (Pedraza-Ramirez et al., 2020). While there is no universally agreed-upon definition of esports performance, literature offers diverse descriptions. Pedraza-Ramirez et al., (2020) employs cognitive and in-game performance measures, while Himmelstein et al., (2017) delineate characteristics essential for successful esports players.

Building on these insights, a reasonable definition of esports performance, particularly in the context of League of Legends, Dota 2, and Counter-Strike: Global Offensive (CS:GO), can be formulated as follows: "Behaviors and psychological processes encompassing a range of mechanical, cognitive, emotional, and strategic elements, employed to achieve diverse goals and attain success, applicable in both training and competitive settings." This definition encompasses the multifaceted aspects outlined by researchers, encompassing mechanical skills, psychological processes, cognitive measures, strategic thinking, decision-making, motivation, focus, adaptability, growth mindset, and the importance of preparation. (Himmelstein et al., 2017)

There appears to be a consensus that achieving high-level esports performance requires a significant blend of skills and abilities, prominently featuring psychological aspects. According to Garcia-Lanzo et al. (2020), one of the key psychological prerequisites for esports stems from its inherently social nature. Given the team-oriented structure with a shared goal, team cohesion, communication, and anxiety management play pivotal roles in determining a team's success. Poleman (2018) further emphasizes that high-level esports demand elevated levels of attention, quick and accurate responses to stimuli, and effective decision-making under pressure.

Drawing from the insights presented by Garcia-Lanzo et al. (2020), meeting the performance demands of high-level esports necessitates targeted training and development. This includes cognitive capabilities like mental agility, spatial memory, and decision-making, as well as psychological aspects such as self-regulation, self-efficacy, and concentration. Physical capabilities like aerobic endurance and reaction time, along with technical and tactical expertise like game knowledge and strategy, contribute to the holistic skill set. Coordination capabilities, exemplified by hand-eye coordination, and traditional values like individual effort, teamwork,

and resilience are integral components as well. Himmelstein et al. (2017) emphasized the need for physicality and kinesthetic prowess in esports as well. As we delve into the intricate relationship between esports and traditional sports, it becomes evident that esports, like traditional sports, requires a substantial level of physical and kinesthetic abilities.

Pedraza-Ramirez et al. (2020) highlighted a scarcity of meta-analyses that have examined the effects of video games on cognition. Among these analyses, conflicting results emerged; one study reported a positive correlation between playing video games and cognition related to working memory, inhibitory control, spatial cognition, and top-down attention (Bediou et al., 2018), while two other meta-analyses did not identify a significant correlation between playing video games and cognition. Nevertheless, the evidence from these meta-analyses holds promise for gaining insights into the fundamental cognitive processes and requirements associated with video games.

A comprehensive assessment of these performance requirements, as outlined in the studies, will greatly benefit the thesis. Such an assessment will facilitate the refinement and focus on the specific psychological processes pertinent to high-level game performance, thereby minimizing the inclusion of unnecessary and irrelevant information.

Despite the growing interest in esports performance psychology, there is still a notable deficiency in literature and scientific understanding regarding the psychological and cognitive factors intrinsic to high-level esports performance (Pedraza-Ramirez et al., 2020). Specific research focused on esports or esports psychology is lacking, highlighting the need for dedicated exploration in this area. In summary, the understanding of the role of psychological factors in high-level esports is currently limited. As the scientific literature in esports psychology expands, new research and interest will contribute to a better understanding of the psychological processes and demands involved in professional esports—something this thesis aims to contribute to. With this newfound comprehension, coaches and sports psychologists can tailor interventions and strategies to optimize performance, foster resilience, and cultivate a mental environment conducive to individual and team success.

3.5 Performance barriers in esports

In this study, Himmelstein et al., (2017), emphasizes the various barriers that esports players may encounter on their path to achieving optimal performance. These barriers encompass a range of challenges, including "confidence issues, ineffective coping strategies for anxiety, the impact of past achievements and mistakes, experiences of harassment, deficiencies in self and team development (such as knowledge about the game, team dynamics, team communication, and individual skills), and challenges in effectively separating life from gaming."

Moritz (2023) investigated potential performance barriers in esports, highlighting the significant pressure that esports athletes encounter in their field. These individuals must maintain emotional stability while executing tasks rapidly, accurately, and precisely within a high-stress environment. Similar to traditional athletes, esports players also grapple with challenges such as disappointment, performance anxiety, and fear of failure within their competitive realm.

Nagorsky & Wiemayer (2020) identified some concrete performance barriers that esports players have to face, these include: ineffective attentional control, negative consequences of mistakes, going on tilt and being harassed, limited ability to regulate emotions, dwelling on past performance, trouble performing under pressure, inadequate physical and mental preparation, and a lack of confidence.

In addition, Shearer (2015) identified several organizational and competitive challenges that confront esports athletes. These encompass performance pressures, such as meeting public expectations; environmental issues, including accommodations in hotels; personal concerns, such as separation from family and friends; leadership matters, such as relationships with coaching staff; and team-related issues, including dynamics with fellow teammates.

Recognizing these potential barriers to optimal game performance provides a valuable foundation for constructing relevant interview questions for the thesis. It may be beneficial to develop a hierarchical list of these barriers to guide the formulation of focused and targeted interview inquiries. This approach will enable a more systematic exploration of the factors that can either facilitate or impede optimal performance in esports players.

4 PSYCHOLOGICAL ATTRIBUTES

One of this study's main objectives was to investigate the psychological attributes necessary for high-performance in esports. While psychological attributes may seem abstract and challenging to articulate, providing a clear definition is crucial for understanding this chapter and the study's overarching purpose. Our definition of psychological attributes aligns with the American Psychological Association's (2024) definition of attributes as qualities or properties of a person and performance as any activity or collection of responses that leads to a result or has an effect on the environment. In essence, within this paper's context, psychological attributes are regarded as positive qualities that contribute to attaining specific desired outcomes.

In athletic or sporting performance, motor skills are widely recognized as a fundamental aspect for achieving optimal results. However, it is crucial to note that these skills alone are insufficient for reaching peak performance; psychological factors also play a paramount role. Extensive research in performance and sport psychology underscores the vital importance of psychological training in enhancing athletes' attributes that contribute to athletic success. Notably, top performers in the sporting world have long incorporated psychological training as an integral component of their preparation. Some of the key psychological attributes honed by professional athletes encompass motivation, confidence, anxiety management, psychological preparation, concentration, goal-setting, imagination, and mental toughness. (Gümüřdađ & İlhan, 2022)

Considerable research has delved into the psychological attributes exhibited by elite athletes. Williams & Krane (2001) outlined various psychological attributes found in highly successful athletes, these attributes encompassed self-regulation of arousal, high confidence, improved concentration and focus, an attitude of "in control but not forcing it," positive imagery and self-talk, as well as elevated determination and commitment. Similarly, Orlick & Partington (1988) identified specific psychological attributes and behaviors associated with favorable performance outcomes in athletes. These included the ability to focus attention, control performance imagery, a wholehearted commitment to excellence, setting practice goals, engaging in competition simulation, mental preparation (including detailed competition plans), and having distraction management plans.

In the realm of esports, there has been some research exploring the psychological attributes displayed by professional players, as detailed in chapter 2 and 3 for additional context. Not surprisingly, many psychological attributes exhibited by top performers in traditional sports also correlate with those displayed by elite performers in esports. These shared attributes include confidence, attention control, and self-regulation. Building on the insights presented earlier and in preceding chapters, this section will provide a more detailed examination of specific psychological attributes, namely confidence and self-efficacy, attention, emotional intelligence, and decision-making. (Garcia-Lanzo et al., 2020)

4.1 Confidence and self-efficacy

Confidence is the belief that one can succeed and thrive in what they are about to embark on or have already begun (Arajärvi & Thesleff, 2020; Shrauger & Schohn, 1995). Without doubt confidence is one of the most important psychological skills to effect performance in sport, both at the individual and team levels (Feltz et al., 2008; Vealey, 2009). Elite level athletes have identified it as the most critical skill defining mental toughness (Vealey, 2009). Teams with higher levels of team confidence demonstrate enhanced team functionality, increased cohesion, set higher and more challenging goals, can more effectively handle setbacks and obstacles and continue despite experiencing failure, and ultimately, they apply greater effort and perform better (Feltz et al., 2008; Fransen et al., 2017).

The examination of confidence in sports predominantly relies on Bandura's (1997) social cognitive theory. Due to the strong theoretical foundation it provides, researchers often utilize the term "efficacy" in studies, while "confidence" is more commonly employed in practical contexts. Athletes tend to be more familiar with discussing their confidence rather than their level of efficacy. Bandura made a clear distinction between efficacy and confidence by defining efficacy within the framework of goal pursuit (unlike confidence, which can encompass situations where one may be confident of failing). Nevertheless, these terms are frequently used interchangeably (Bandura 1997).

The concept of self-efficacy, in turn, is based on the research of Albert Bandura (1997; 2012), which has widely understood and explained human behavior and performance in various situations. It literally refers to a person's experience of being capable and able to perform the

task or situation at hand (Bandura 1997; 2012). According to Bandura's (1997) theory, experiences of efficacy are influenced by previous successes, the successful achievements of others, as well as support and encouragement. Efficacy is experienced when mental images, arousal levels, and emotions are supportive of success (Bandura 1997: 2012). Research has shown that the experience of efficacy is also linked to higher levels of performance. Accordingly, researchers have sought to determine how reliably feelings of efficacy can predict future successes. (Sitzmann & Yeo, 2013).

There are two distinct types of confidence within a team, as noted by Fransen et al. (2017): process confidence and outcome confidence. Process confidence pertains to athletes' convictions regarding their team's capabilities necessary to achieve a specific objective. This includes the team's adeptness in handling setbacks, fostering encouragement among teammates during the game, displaying enthusiasm when scoring a point, and so forth. On the other hand, outcome confidence relates to athletes' belief in the team's capacity to attain a particular result, such as winning the game or securing a position in the top three of the rankings (Moritz, 2023).

A lack of confidence was one of the Nagorsky's and Wiemeyer's (2020) listed barriers to optimal performance in esports. Dealing with disappointment, performance pressure and fear of failure are part of the esports experience (Moritz, 2023). According to Vealey (2009) athletes have identified that managing nervousness, bouncing back from mistakes and overcoming obstacles and setback are part of the important type of confidence in sports. We can therefore state that confidence has a big role in these psychologically challenging situations encountered in esports.

4.2 Attention

The impact of attention, or concentration, on sports performance has been extensively researched and well-documented. Presently, there is a general consensus among researchers, coaches, and athletes that the capacity to focus all attention on the task at hand plays a pivotal role in achieving success in specific sports performance (Moran, 1996).

The terms "attention" and "concentration" are often used interchangeably, as pointed out by Weinberg & Gold (2023). They highlight the tendency of researchers to use the term

"attention," while practitioners more commonly employ "concentration." However, both terms essentially refer to an individual's ability to dedicate their attention to a specific task at will (Tod et al., 2024). Attention can be divided into two distinctive processes: selective attention and divided attention (Woods, 1990). Selective attention refers to the ability to prioritize specific information over others; for instance, a tennis player can disregard irrelevant sources of information and concentrate solely on tracking the trajectory of the ball. Divided attention is the ability for an athlete to focus on multiple elements simultaneously. For example, a football player needs to concentrate on the ball while also assessing possible passing opportunities.

The attention skills of athletes significantly impact their sport performances, leading to extensive research on enhancing these skills. Several well-known psychological interventions have demonstrated effectiveness in improving attention control among athletes. These interventions include goal-setting, pre-performance routines, imagery, and self-talk (Ted et al., 2024).

Goal-setting, particularly the establishment of performance goals in athletic training, has been linked to positive effects on attention control (Kyllo & Landers, 1995). Pre-performance routines, observable in many athletes, contribute to shifting attention resources to the task at hand. For example, an archer's pre-performance routine, such as the quiet eye technique, has demonstrated beneficial effects (Cotterill, 2010). Imagery plays a significant role in pre-performance routines and can also serve as a standalone method to help athletes enhance their attentional skills (Milley & Ouellette, 2021).

Self-talk emerges as another valuable tool, especially when employing specific "trigger" words that redirect an athlete's attention to a designated task (Galanis et al., 2021). These psychological interventions collectively contribute to the ongoing efforts in sports psychology to improve athletes' attention skills and, consequently, their overall performance.

In the context of attention skills within the esports environment, notable studies and trends have emerged. Hagiwara et al., (2020) discovered that esports athletes engaged in "rhythmic" games as part of their preparation for practice and competitions. Beyond mental preparation, these rhythmic games were identified as contributors to the enhancement of selective attention skills among esports athletes. Additionally, the act of playing video games, in general, has consistently demonstrated an improvement in players' attentional skills (Hagiwara et al., 2020).

The engagement in video games has been associated with an increase in selective attention capability, suggesting that video games might serve as a potential method for enhancing certain psychological skills. These findings shed light on the unique ways in which esports athletes develop and leverage attentional skills in their gaming environment.

4.3 Decision-making

Any voluntary action requires both a certain level of motor skill for efficient execution and, by definition, the decision to perform the action. In simpler cases, this decision might be straightforward, based on a binary choice of yes or no. However, in more complex situations, individuals may not only need to decide whether to act but also choose from among various courses of action (Gréhaigne et al., 2001).

Among the many activities humans engage in, sports offer a unique context. Whether pursued for leisure or as a profession, individuals compete either against themselves or against others with the goal of winning. In individual sports, decisions are made to enhance speed, jumping ability, or throwing power. These decisions are often planned in advance, and when it's time to perform, actions are executed accordingly. Team sports present an even greater challenge, as they involve more complex decision-making situations. In team sports, achieving excellence requires players to choose the right action at the right time and execute it effectively and consistently throughout the game while taking your teammates into account. (Gréhaigne et al., 2001) Gréhaigne & Godbout (1995) have stated that in a competitive setting, both teams need to coordinate their actions to retrieve, retain, and advance the ball towards the scoring area in order to score effectively (Gréhaigne et al., 2001).

In sports, expertise is closely tied to the capacity for making precise decisions. Within this framework, decision-making becomes notably intricate, given the abundance of significant cues and interactions, as well as the presence of numerous non-linear cause-and-effect relationships and intense time pressure (Afonso et al., 2012). Research on decision-making in sports shows that experts tend to make more accurate decisions by utilizing early information. However, they prioritize speed over accuracy, particularly when it comes to making context-specific decisions (Gréhaigne et al., 2001).

Afonso et al. (2012) identified three fundamental components that underpin decision-making: attention, anticipation, and memory. Examining the literature emphasizes that, in sports, attention should primarily focus on goals, be selective, and have a broad external scope. Anticipation plays a vital role in reaching elite-level performance, but it must not increase errors and should adapt to opponents' counter-communication tactics. In certain situations, players opt for waiting strategies, especially when anticipation carries a risk that reduces effectiveness. Memory forms a strong basis for attention and anticipation, and it supports both intuitive and strategic thinking processes (Afonso et al., 2012).

In esports, players must engage in a continuous process of decision-making during gameplay. (Pedraza-Ramirez et al., 2020; Valls-Serrano et al., 2022) This requires quick analysis of the risks associated with each action, all while under pressure. Top-down attention control inhibition, visual-spatial skills, and decision-making are also theorized to be crucial components in video games (Valls-Serrano et al., 2022). Pedraza-Ramirez and colleagues (2020) emphasize the importance of comprehending the specific requirements and characteristics of each esports. For example, shooting games demand higher levels of reaction time and attention, while strategy games place more emphasis on tasks like extracting information, planning, and decision-making.

Research on decision-making in the field of esports is scarce. For instance, only one study has examined how decision-making processes affect game performance in League of Legends, one of the most popular esports games. (Valls-Serrano et al., 2022). Valls-Serrano and colleagues (2022) found that cognitive flexibility and decision-making were the primary cognitive factors that predicted performance in League of Legends (LoL).

4.4 Emotional intelligence

Emotional Intelligence (EI) has frequently been conceptualized as trait or attribute. EI refers to the ability to recognize, understand, and effectively manage both one's own and others' emotions. It includes recognizing and managing one's own emotional state, empathy towards others, delicate management of relationships, and effective navigation of social situations (Emmadi, 2017; Laborde et al., 2016). EI is also described as the ability to understand,

recognize, use, and manage one's own emotions in a positive manner to alleviate stress, ability to communicate effectively, ability to show empathy towards others, and ability to overcome challenges and resolve conflicts (Laborde et al., 2016).

In the sports environment, emotional intelligence is associated with emotions, physiological stress responses, successful utilization of psychological skills, and enhanced performance in sports. Sport is an environment where individuals must motivate themselves to achieve long-term goals through rigorous training. Additionally, athletes must constantly manage the stress induced by intense training and competition, which involves understanding and regulating their own emotions as well as those of others (such as teammates, opponents, coaches, referees, and spectators) (Laborde et al., 2016).

Emotional intelligence is associated with athletes' performance throughout the season. Studies have shown a positive correlation between EI and athletic performance, particularly regarding managing stress from competition and assessing coping strategies. Athletes perceive competitive situations as challenges rather than threats, and emotional intelligence provides them with more effective tools to manage competition-related stress. It enhances their ability to confront and handle stressful situations, resulting in improved resilience to pressure. This principle holds true not only for individuals but also at the team level (Laborde et al., 2016).

Emotional intelligence in team has been found to be positively correlated with sports success. A team with high EI communicates more effectively within the team. Emotional intelligence within the team facilitates goal achievement. Conflicts occurring within teams during practices or games can be resolved more effectively with high-level emotional intelligence, which also positively affects team cohesion and leads to better performance. (Campo et al., 2016; Crombie et al., 2009; Laborde et al., 2016). As an explanatory factor for the relationship between emotional intelligence and athletic success, the observation of players from a team with high emotional intelligence during the game (existential domain) and the understanding and management of the game (strategic domain) are more effective specifically through mental skills/emotional control abilities (Crombie et al., 2009).

Research on coaches' emotional intelligence (EI) in sports is limited (Laborde 2016), but outside of the sports context, studies have indicated that emotionally intelligent leaders evaluate their capacity to perceive, comprehend, and regulate both their own emotions and those of

others (Emmadi, 2017). Outside the sporting domain, it has been also observed that emotional intelligence enhances a group's problem-solving abilities (Zeidner et al., 2004) and is associated with better mental and physical health. (Emmadi, 2017). Additionally, the success of the organization largely depends on the leader's emotional intelligence (Emmadi, 2017).

Emotional intelligence fosters a grounded self-confidence when confronting challenges, leading individuals to grow and enhance both the quality and quantity of their performance (Khokhar & Kush, 2009; Laborde et al., 2016). It correlates with elevated levels of life satisfaction and self-esteem, while reducing feelings of insecurity and depression. Moreover, it is inversely associated with making unhealthy choices and engaging in detrimental behaviors (Emmadi, 2017)."

Nagorsky & Wiemeyer (2020) delineated various barriers to optimal performance in esports, encompassing ineffective attentional control, negative consequences of mistakes, susceptibility to going on tilt and encountering harassment, limited ability to regulate emotions, fixation on past performance, difficulty performing under pressure, inadequate physical and mental preparation, and a lack of confidence. Developing emotional intelligence presents a promising avenue to mitigate many of these challenges.

5 MENTAL TECHNIQUES

Mental techniques, employed by athletes to enhance their psychological and overall athletic performance, are widely utilized in traditional sports. Coaches, athletes, and sport psychologists employ these techniques as integral components of sports psychology, a field dedicated to helping athletes leverage diverse mental strategies for athletic success and improved quality of life. (Lochbaum et al., 2022) Similarly, in the realm of esports, where athletes face unique challenges, mental techniques play a crucial role in optimizing performance and overall well-being. Although there is limited research on mental techniques in esports, this thesis aims to contribute valuable insights to the existing literature.

Emotional regulation, imagery, and mindfulness are among the well-known mental techniques employed in both traditional sports and esports. These techniques assist athletes in managing stress, maintaining optimal intensity levels, visualizing performance in a controlled environment, and fostering mindfulness throughout the various processes involved in athletic performance. (Deck et al., 2022; Kindzer et al., 2021) Based on the research questions, authors' hypotheses, experiences, and interests, the selection of these specific mental techniques for further exploration in this chapter is grounded in the thesis. Subsequent chapters will provide a more in-depth analysis and discussion of these chosen mental techniques.

Not much has been researched into mental techniques utilized in esports, although some literature can be found. Himmelstein et al., (2017), conducted a study with the purpose of gaining insight into the mental skills possessed and utilized by competitive gamers, identifying the mental obstacles or barriers they encounter, and understanding the underlying mental techniques employed by professional esports players. The results of this study shed light on various aspects of crucial mental techniques utilized in high-level esports performance.

In examining the mental skills employed by participants, the study revealed a spectrum of techniques geared toward achieving optimal performance in competitive gaming. Strategies such as playing smart, maintaining motivation, staying present in the moment, effective communication, and monitoring mindset were prominently highlighted by the participants as key elements contributing to their success.

Conversely, the study delved into the obstacles encountered by competitive gamers, unveiling a set of challenges prevalent in their experiences. Participants identified ineffective attention control, instances of going on tilt, experiencing harassment, dwelling on past performances, struggling with confidence issues, and facing obstacles in effective communication. These concerns underscored the intricate psychological aspects that players navigate in the competitive esports landscape.

In summary, this study provides valuable insights into both the positive mental techniques adopted by professional esports players and the significant challenges they confront. This nuanced understanding contributes to the broader exploration of the psychological dynamics influencing high-level esports performance as well as serves as a valuable knowledge basis for this thesis.

As indicated by Poulus (2021) sources of stress in esports encompass various categories, broadly classified as performance-related, teammate-related, and external individual factors. Esports-specific stressors include technical issues, antisocial behavior, challenges in balancing life commitments, and stress during critical moments of performance. Interestingly, there is a significant overlap between stressors in esports and traditional sports, as highlighted by Nicholls et al., (2007). Examining the specific codes related to esports stressors, it is evident that these challenges contribute to the unique stress landscape in the gaming industry.

A noteworthy finding (Poulus, 2021) indicates that 79.2% of stressors in esports are attributed to performance (27%) and teammate-related (52.2%) factors. This sheds light on key stressors that contribute significantly to the overall stress experienced by esports athletes. It's essential to note variations in stressors based on factors such as solo queue participation, structured team differences, and skill levels. Notably, higher skill levels are associated with increased performance-related stress and slightly decreased teammate-related stress, although the latter remains a substantial factor even at advanced skill levels. Understanding these stressors is crucial for developing targeted interventions, mental techniques and support systems for esports athletes.

5.1 Self-regulation

Self-regulation stands out as one of the most widely recognized and crucial mental techniques, not only in sports psychology but in overall human functioning and well-being. It refers to an individual's capacity to identify and manage their emotions, behaviors, thoughts, and intensity levels, particularly in the face of challenging and dynamic tasks and environments, all aimed at pursuing personal goals and development (Tod et al., 2024). The concept of self-regulation incorporates various processes and capabilities, including goal-setting, planning, self-awareness, and exercising self-control, all essential components for successful self-regulation (Tod et al., 2024).

According to Zimmerman, the distinction between ineffective and effective self-regulation lies in the quality and quantity of regulatory processes involved before, during, and after performances. These processes are categorized as preparation, execution, and evaluation, all of which hold significant relevance in a sports setting. Numerous studies have demonstrated that effective self-regulation has positive impacts on sports performances. This is understandable, given that athletic performances and outcomes often hinge on the athlete's ability to direct and control internal effort for the designated task at the right time. (Cleary & Zimmerman, 2001)

Self-regulation is a pivotal element for an athlete's success in performance, learning, and mental well-being. It draws on various mental skills, including self-awareness, self-talk, imagery, attention, arousal, and emotional control. Additionally, effective self-regulation involves interpersonal skills like teamwork, communication, and leadership. The complexity of these factors makes self-regulation a multifaceted and challenging concept to grasp and implement. Therefore, practitioners and coaches are advised to utilize diverse models when aiming for effective self-regulation in practice and execution. (Tod et al., 2024) Understanding the various factors and benefits associated with self-regulation in athletic performance, it is logical to assert that self-regulation could play a crucial role and serve as a valuable mental technique in an esports setting. This includes enhancing the effectiveness of self-regulation for esports athletes and improving the ability of coaches and sport psychologists to implement effective self-regulatory practices.

Despite not being fully understood, significant studies have highlighted the impact of emotions on esports performance. In a study by Beres et al., (2023), it was revealed that various situations in the esports environment trigger emotional responses from athletes. Positive emotions were found to correlate positively with game performance, while negative emotions showed a

negative correlation. Although esports athletes actively engage in self-regulatory practices, often utilizing avoidance coping styles, they may lack effective coping strategies suitable for the fast-paced esports setting. Ongoing efforts to implement effective self-regulatory techniques for esports athletes emphasize the importance of self-regulation, not only for performance but also for their mental well-being.

5.2 Imagery

Another essential mental technique, imagery, is a form of self-regulation that athletes can control. It involves voluntarily creating or recreating mental images and representations, commonly referred to as visualization (Tod et al., 2024). However, imagery extends beyond mere visualizations, encompassing multiple senses such as emotions, thoughts, smells, and sounds. Athletes typically draw from past memories to construct vivid, multisensory mental images. (Tod et al., 2024)

Numerous studies suggest that imagery engages similar brain pathways as the actual execution of movements. Through imagery, athletes can activate the motor system without physically performing the movements. This demonstrates the powerful impact of imagery in enhancing mental and physical preparation for athletic performance. One widely recognized practical theory of imagery execution is known as (PETTLEP), which stands for physical, task, timing, learning, emotion, and perspective, and was developed by Holmes & Collins (2001). This model offers a comprehensive framework for imagery practice, incorporating seven distinct factors: Physical, environment, task, timing, learning, emotion, and perspective. Numerous studies have demonstrated the effectiveness of this theoretical model in enhancing athletic variables such as balance, strength, and technical skills. The literature emphasizes the significance of aligning mental visions with the actual performance environment to maximize the benefits of imagery practice.

Another well-known theoretical model of imagery (RAMDIU), revised applied model for deliberate imagery use developed by Cumming & Williams (2013), outlines nine integral components for an imagery intervention: Who, where, when, why, what, how, personal meaning, imagery ability, and outcomes. According to this theory, practitioners and coaches should carefully consider how these nine components can be leveraged to achieve maximal

imagery efficiency. For instance, athletes must possess sufficient imagery ability to generate and sustain the mental image for an extended duration, ensuring that the imagery aligns with the actual situation, promoting meaningful imagery.

In the context of the esports environment, imagery practice holds significant potential as a mental technique for athletes to enhance their performance, prepare for games, and regulate their emotions. A study investigated the potential benefits of imagery for esports athletes using Layered Stimulus Response Training (LSRT), a method developed by Cummings et al., (2016). This study outlined various ways in which esports athletes can improve their imagery ability, specifically using the LSRT model. These approaches aim to improve performance by strengthening the athletes' capacity to create, retain, and effectively utilize mental images. (Cummings & Quinton, 2023)

Another crucial factor to consider regarding imagery in esports is Examining the alignment between a player's perspective and their in-game avatar's perspective is another aspect to consider. Esports players using imagery may need to balance between adopting the perspective from their competition chair and that of their in-game character. This distinction becomes particularly nuanced in various esports genres like fighting games, MOBAs, and sports sims. Research suggests that reorienting the perspective, especially in genres where the player-character's viewpoint is crucial, could impact the effectiveness of imagery techniques. (Mortiz & Knutson, 2023)

5.3 Mindfulness

Researchers have long emphasized the advantages of mindfulness, reshaping the landscape of psychology practice and our understanding of human functioning. Robust empirical evidence consistently demonstrates the manifold and sometimes remarkable positive outcomes of mindfulness practices across diverse conditions, including depression, anxiety, eating disorders, and personality disorders, among others. These evidence-based findings have revolutionized the perspectives of therapists, psychologists, and researchers on human functioning and overall mental well-being. Not only has mindfulness shown remarkable benefits for various aspects of human well-being and functioning, but it has also been widely studied and produced significant positive outcomes in the field of sport performance and sport psychology, this revelation is

unsurprising, given the extensive literature documenting the positive effects of mindfulness practices. (Tod et al., 2024) One of the most compelling definitions of mindfulness comes from Kabat-Zinn (1994), who characterizes it as follows: "Paying attention in a particular way: on purpose, in the present moment, and without judgment" (Tenenbaum, 2020, p. 738).

As mindfulness gained recognition for its documented benefits in clinical psychology, researchers swiftly acknowledged its potential advantages in the domain of sports and performance. In sport psychology, the significance of sustained focus and attention for optimal performance had been a longstanding emphasis. Researchers understood that maintaining a task-oriented focus for extended periods was vital for achieving peak performance in competitive settings. One notable theoretical model in this context is the mindfulness-acceptance-commitment approach, or MAC (Gardner & Moore, 2007). Originating in 2001, MAC stands out as the inaugural mindfulness and acceptance-based theoretical model, offering interventions to enhance performance and foster psychological well-being. Unlike models that encourage specific thoughts or emotions, MAC focuses on developing athletes' skills to stay present, handling thoughts or emotions without imposing values or judgments on them.

While mindfulness in the context of esports has not been extensively researched, it is well-documented that high-performance in esports necessitates specific psychological attributes such as focus, self-regulation, and mental agility (Garcia-Lanzo et al., 2020). Despite the absence of definitive evidence supporting the notion that mindfulness practice enhances the performance of esports athletes, it is reasonable to assume that it plays a pivotal role in this given the established performance related benefits of mindfulness.

5.4 Flow

According to Csikszentmihalyi (1975) flow describes an optimal experience. When a person feels that their skills and the challenges of the task meet, they can immerse themselves in the activity so completely that everything else disappears. Flow is a state of peak enjoyment, energetic focus, and creative concentration experienced by people engaged in adult play, which has become the basis of a highly creative approach to living. The flow state produces great joy in the act itself and remains memorable. (Jackson, 2012)

Flow is particularly crucial for elite athletes who perform and compete at the highest levels, under intense pressure, where the greatest rewards are at stake. Therefore, even small improvements or changes can have dramatic effects on success. (Nichols et al., 2005) Psychological basic needs such as competence and autonomy predict commitment to sports, which in turn predicts the tendency to achieve the flow state (Hodge et al., 2009). There seems to be a clear correlation between skill levels and experiencing flow. The higher the skill level athletes have, the more likely they are to reach the flow state. (Swann et al., 2012)

The flow experience in sports and performance environments is associated with nine well-known factors (Jackson & Csikszentmihalyi 1999). Nakamura & Csikszentmihalyi (2002) outlined that of these nine factors, six describe a person's experience when they are in a state of flow. The remaining three, on the other hand, describe the conditions that have been proposed as prerequisites for achieving the flow state (Nakamura & Csikszentmihalyi 2002).

The nine factors that are associated with the experience of flow:

Factors describing the experience: (a) Awareness and action merge – Individuals experience a state of complete performance where the mind and body seamlessly unite to progress towards the goal. (b) Complete concentration on the task at hand. (c) Sense of complete control over the situation. There is no attempt to control the situation nor fear of failure involved in the experience. (d) Disappearance of self-consciousness in the sense that judgment and comparison cease. (e) Changes in the experience of time (time feels shorter or longer). (f) Autotelic experience, meaning an extremely enjoyable experience that is rewarding in itself.

Conditions for the experience: (g) The goals of the situation are high, yet perfectly challenging in relation to the performer's capabilities. (h) The individual recognizes continuous, purposeful feedback indicating that the performance is proceeding as desired. (i) Goals are clear and well-defined (Nakamura & Csikszentmihalyi 2002).

Swann et al., (2018) call for a critical examination of the nine-point model associated with the flow state, as their hope is to have researchers help create some sort of explanatory theory describing the flow state through a descriptive model. It would be extremely valuable if researchers were able to develop a universal "recipe" that anyone could use to learn how to achieve flow. (Swann et al., 2018) Researchers, according to Swann et al., (2012), should shift

their focus to examining concentration-related processes that promote the attainment of flow state, as the ability to manage attention allows the integration of action and experience.

In numerous studies, a connection has been found between mindfulness practice and experiences of flow. (Glass et al., 2019; Noetel et al., 2019) In addition, Jackson (2012) highlights the development of athletes' awareness skills as a helping tool to achieve flow state during performance. On the other hand, flow and mindfulness differ in experiences, as the fundamental goal of mindfulness is to maintain self-awareness, while the flow experience is characterized by the disappearance of self-consciousness. However, both involve a similar mental state, but the technique aimed at achieving it is different. (Love et al., 2019.)

6 RESEARCH AIM

The aim of this research was to explore the lived experiences and perspectives of professional esports athletes and coaches to gain insights into the psychological attributes and mental techniques necessary for high performance in esports. Given our backgrounds in sport psychology, the growing academic interest in esports psychology, and our personal enthusiasm for the topic, we chose to investigate these aspects thoroughly. We both agreed that a qualitative study design would be most appropriate for this research. Accordingly, we employed a phenomenological-hermeneutic approach, utilizing semi-structured interviews for data collection and content analysis for examining the data. This methodological approach was selected to capture the nuanced psychological dynamics at play in the high-stakes environment of professional esports.

The formulation of research questions was fundamental to the researchers in establishing the framework for this thesis, aligning with the overarching research aim.

- What are the key psychological attributes that esports players and coaches consider crucial for optimal game performance?
- Which mental techniques are commonly employed by esports players and coaches?

7 METHODOLOGY

This chapter aims to explain the research methodological approach and processes as detailed as possible. A clarification and justification for the selection of methodology will be given, as well as clear and descriptive explanation of the processes and concepts concerning the selected methodology. After this chapter the reader should have a clear understanding of the methods used as well as the reasoning behind the choices of methodology and research processes.

The research design process started with discussion and brainstorming about which research methods would be the most suitable for the research aims and questions. The authors quickly come to an agreement and conclusion that to explore the research questions in a deep and meaningful way a qualitative study design would be selected. Using the “The Features of a Good Qualitative Study” by Creswell & Poth (2018) as a frame for our research design, the process of designing the research commenced.

7.1 Researcher’s background

Both Planting and Salomaa have a professional and personal interest in the research topic and have conducted previous research in the field of esports. Planting conducted his bachelor’s degree on the effects of physical training has on esports performance (Planting & Van Breemen, 2019), while Salomaa conducted his previous master’s degree on interaction skills within esports teams (Leppä & Salomaa, 2022). Moreover, Planting has gathered over two years of work experience in the field of esports, including a position as a performance coach for a professional esports team, where the research topic is of significant relevancy. Both Planting and Salomaa has an extensive background in casual gaming and traditional sports, Salomaa has many years of experience in playing ice hockey at a semi-professional level, while Planting has experience from individual sports. Both the authors have an aspiration to further their knowledge in esports performance psychology, as well as to add valuable research to the ever-expanding field of esports psychology.

Planting acknowledges that his personal experiences, preferences, and biases related to certain mental techniques and psychological attributes, which have been beneficial in his own sports and personal life, might influence his interpretation of the results and the way he formulates the

questions. Aware of these potential biases, he made a conscious effort to mitigate their impact during the data collection and analysis phases. Salomaa's extensive background in team sports, particularly his experiences in high-level ice hockey competitions, may influence his analysis of the data. These experiences could lead to findings that are either similar or distinct compared to other fields. His previous research has led him to consider various psychological attributes necessary in different sports. Furthermore, his coaching and teaching philosophy significantly emphasizes the team aspect, which might also shape his approach to data analysis.

7.2 Philosophical approach

The philosophical approach selected for this research was a phenomenological-hermeneutic research approach. This approach was selected since the research aim was to explore the lived experiences and perceptions of the study participants, which this approach targets (Finlay, 2012). The phenomenological-hermeneutic approach is based on the principles of phenomenology and hermeneutics. In phenomenology, the purpose is to study phenomena as they appear to the individual, while in hermeneutics the purpose is to interpret these experiences and the meaning they hold for the individuals. The phenomenological-hermeneutic approach involves an in-depth exploration of the data gathered from the chosen data gathering methods, and then identifying underlying themes and patterns found in the data. The aim is to gain a deep understanding of the individual's experience and perspective, as well as to explore the context that these experiences are located in (Finlay, 2012).

To conduct a phenomenological-hermeneutic study, the researchers must select a group of study participants who have experienced the phenomena that the research aims to explore. The process continues with the researchers conducting in-depth interviews with the participants, asking open-ended questions that allow the participants to explain their experiences and viewpoints in detail. The data gathered from these interviews can then be analyzed using various data-analyzing methods like coding, categorization, and interpretation (Finlay, 2012).

7.3 Participants

Before selecting participants for the study, a selection criterion was established. This selection criteria were established to ensure the data collected was of high-quality, and in alignment with the research questions and aim. The following guidelines were followed when establishing the selection criteria.

- The selection of the participants must be guided by the research questions, so that the participants have the experience and knowledge to answer the research questions. (Creswell et al., 2018)
- The selection of the participants must be guided by a concrete sampling strategy to ensure the quality and relevancy of the data. (Guest et al., 2011)
- The selection of the participants must be done by clearly established inclusion and exclusion criteria based on characteristic that is in alignment with the research questions. (Creswell et al., 2018)

Based on these guidelines the following selection criteria for participants was established.

- The participants must have been playing or coaching professionally for at least two years at some point during their career.
- The participants must be between the age of 18-30.
- The participants must have been professional players or coaches in the following games, Counter-Strike: Global Offensive (CS:GO), Defence of the Ancients 2 (DotA 2) or League of Legends (LoL).

Based on these selection criteria, we selected six suitable participants for the study. All the participants were male professional players between the age of 22-30. The participants represented all three games outlined in the selection criteria equally, meaning there were one coach and one player from each game, totaling the six participants. All the selection criteria were met when selecting the participants. The participants were contacted using the digital mediums Discord and WhatsApp and were drawn from the authors personal network of contacts. All the contacted participants answered and agreed to participate in the research.

7.4 Data collection

The data gathering method selected for the study was semi-structured interviews. Semi-structured interviews are a commonly used data gathering method in qualitative research designs and is used to gather in-depth data from the participants in a flexible and conversational way. This method is used to explore the participants experiences, perspectives and opinions on a selected topic or phenomenon, and especially useful when the research wants to gain in-depth insights into the participants perspectives, which aligns with the aim of this research, hence the reasoning behind the selection of this data gathering method. A few notable limitations with semi-structured interviews include the potential for researchers to impose their own biases and preconceptions about the topic onto the interviewees, a risk of bias when selecting participants, and it can also be a very time-consuming enterprise. (Liamputtong, 2013)

For the data gathering process, semi-structured interviews were chosen as the method. Two separate interview forms were constructed, (Appendices 1 and 2) one for the players and one for the coaches. The interview forms consisted of nine questions coupled with additional helping questions for the purpose of clarifying the questions and guiding the interviewee when needed. The interview forms and sessions were based on guidelines for conducting qualitative research in psychology by Willig (2013) These guidelines included, encourage the participants to share their experiences and perspectives, use a mix of closed and open-ended questions to gather both specific and broad data, use clear and concise language, avoid leading or biased questions that might influence the participants answers to much, obtain informed consent and take the ethical considerations into account.

All the interviews except one were conducted online via the Zoom-platform. One interview was held in-person at the University of Jyväskylä's facilities. All the interviews were recorded and stored in accordance with the University guidelines for responsible research conduct, see section 5.7 for additional information. All the interviews lasted between 60 and 91 minutes. Both authors participated in the interview process in roughly equal measure. While one acted as the primary interviewer, the other asked additional helping questions when needed. The researchers were aware of the limitations regarding semi-structured interviews outlined in section 5.3 and tried to the best of their ability to adhere to the guidelines outlined previously

in this section. Both the authors considered the data gathering phase to be a success, and that the response obtained aligned well with the research questions.

7.5 Data analysis

The analysis method selected for the study was content analysis. Content analysis is used to analyze qualitative data, with the aim of identifying patterns, themes, and meanings within the data. The method requires systematic examination of the data, that can then be categorized into meaningful themes and codes. These themes and codes can then be interpreted to gain insight into the underlying meanings the data offers. Content analysis can be used by researchers to explore various topics and questions, including attitudes, beliefs, and values of the participants. It can also be applied in various fields including psychology, sociology and education. The content analysis method is flexible, cost-effective, and provides rich and detailed insights into various phenomena. This analysis method aligns with the aim of this research, hence the reasoning behind the selection of this method. As with all methods, it is not without its limitations, such as the potential for excessively subjective and biased interpretations, the extensive coding and analysis need for the method, as well as the challenge in ensuring the validity and reliability of the results. (Neuendorf, 2017)

The selected method for the data analysis phase was content analysis. Content analysis is a commonly used analysis method in both quantitative and qualitative research. Content analysis is used to analyze and examine different forms of communication including text, audio, videos and images. We concluded that content analysis is the best suited method for the aim of the research as well as a tool for interpreting and examining the data obtained from the interviews.

The content analysis process described by Neuendorf (2017) involves a few major steps, including defining research questions, selecting a sample of content, designing a coding scheme, coding of the content, analyzing the results and reporting findings. Following these steps, we conducted the data analysis phase adhering to the following steps.

- Formulating the research questions – this assisted the researchers in identifying the aim of the analysis and selecting relevant material for the analysis.

- Sampling and data collection – this assisted the researchers in selecting a sample of participants that were representative of the population being studied.
- Developing a coding scheme – this assisted the researchers in developing a coding scheme for categorization of data into units that was reliable, valid and comprehensive.
- Applying the coding scheme – this assisted the researchers in applying the coding scheme to the data for categorization into different categories.
- Analyzing and interpreting the data – this assisted the researcher in analyzing the codes, identifying meaningful patterns, themes and trends and examining their relationships.

Following the completion of the data collection phase, we transitioned to the data analysis stage, adhering to established guidelines. We employed qualitative content analysis as our methodology, a method widely applicable to qualitative studies and foundational to many qualitative research analysis approaches. Our initial step involved transcribing the interview data into written format, facilitating a deeper familiarity with the research material (Tuomi & Sarajärvi, 2018, pp. 103–104).

Throughout the data gathering process, we accumulated 99 pages of interview data, formatted in 12-point font with 1.5 line spacing. During transcription, we meticulously removed any elements that could compromise the anonymity of the interviewees, such as team names, player identities, or coach references. In addition, we filtered out insignificant utterances like "uh" or "hmm," while ensuring accuracy in verbatim transcription. Verbatim transcription plays a pivotal role in research, enabling a thorough understanding of interviewees' expressions and experiences (Tuomi & Sarajärvi, 2018).

We initiated the analysis phase by immersing ourselves in the literature review, allowing us to discern key themes present in the data. Next, we identified the most relevant sections of the material corresponding to our research questions and divided the essential content into analysis units. An analysis unit can be a single word, sentence, statement, or a complete thought, which may contain multiple sentences (Tuomi & Sarajärvi, 2018). These analysis units were imported into Excel as direct quotations, and from these, we created summaries by condensing or reducing the expressions. Through condensation, we summarized the quotations in our own words and removed irrelevant details (Tuomi & Sarajärvi, 2018). An example of condensation is presented in Table 1.

TABLE 1. An example of condensation

Analyze unit	Condensed expression
“I think the bond between all the players is really strong when your team is doing good”	5.21 The bond between players is connected to success
” Most important is confidence, like if you are confident, you will not stutter, or you will not overthink.”	3.01 Confidence is most important, you trust your skills and dont overthink.
” We really didn't need to discuss too much in details because we just had the trust since everybody was confident in in their own game.	6.57 Great trust with each other leads to good things

After completing the condensation phase, we proceeded to categorize the condensed material into subcategories, referred to as classes. This categorization involved identifying similarities and themes among the condensed expressions. This stage is commonly known as grouping or clustering. Expressions that convey similar themes were grouped together to form a class. Each class was then assigned a suitable name that accurately described the content encapsulated within that specific group. (Tuomi & Sarajärvi, 2018). An example of forming subcategories is presented in Table 2.

TABLE 2. An example of forming subcategories

Condensed expression	Lower class
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5.29 When giving feedback you need to take others into account	Feedback
5.31 Giving positive feedback shouldn't be taken for granted	
1.25 Usually people tend to be a bit too nice with the feedback	
4.25 You shouldn't be scared to make errors	Fear of failure
1.21 Fear of losing might also lead to trying too much	
1.20 The uncertain consequences of a loss will bring anxiety and pressure	

After establishing sub-categories, we advanced to creating higher-level categories, known as upper classes. These upper classes were then consolidated into overarching main categories, or main classes, which were designed to align with our research questions. Initially, we had only two main classes, but we expanded to three due to the extensive amount of data collected, which did not fit neatly into the two established main classes. Following the grouping of the data, the next step was abstraction, where the goal was to distill essential information and develop theoretical concepts based on this information. Grouping was also considered a part of the abstraction phase (Tuomi & Sarajärvi, 2018). We combined different levels of classes based on their relevance and relationships, resulting in 30 upper classes and 3 main classes. These three main classes directly relate to our research questions. An example illustrating how the categories were formed is presented in Table 3.

TABLE 3. An example of categorizing higher classes

Lower class	Upper class	Main class
Player roles	Team cohesion	Team dynamics
Relationships between players	Team relationships	
Feedback	Communication skills	
Communication in team		
Self-confidence	Confidence	Psychological attributes

Being calm	Calmness	
In-game awareness	Awareness	
Self-awareness		
Visualization	Imagery	Mental techniques
Breathing	Breathwork	
Stress-management	Self-regulation	
Resetting		

7.6 Ethical considerations

An ethical and responsible conduct of the research was a principal factor the authors took into consideration throughout the research process. The University of Jyväskylä has committed to the Finnish Advisory Board on Research Integrity's (TENK) instructions for responsible conduct of research. This means that it is on the authors responsibility to conduct the research according to the ethical guidelines outlined in these instructions. In accordance with these instructions the authors committed to adhere to the following guidelines. (Tenk, 2023)

- The research process must demonstrate integrity, meticulousness, and accuracy from start to finish.
- The methods used must conform to scientific criteria and be ethically sustainable. Furthermore, the results must be published with transparency and integrity.
- Other researchers must be respected by citing their work correctly and giving credit to their accomplishments.
- The planning, conduct, and presentation of the research data must comply with scientific knowledge standards.
- Obtaining the necessary ethical approvals before starting the data gathering process is mandatory.
- Authors must agree on the rights, responsibilities, obligations, principles of authorship, and data archiving and access.
- Researchers must avoid all research-related evaluations and decision-making situations if there is any suspicion of conflict of interest.

In our study, we adhered strictly to ethical guidelines provided above, ensuring integrity, accuracy, and meticulousness throughout the research process. Before collecting data, we secured all necessary ethical approvals and informed participants about the study's objectives, ensuring transparency about data handling and storage, while emphasizing their anonymity to uphold privacy rights.

The qualitative nature of our research involved significant interaction between interviewers and interview subjects. Despite most interviews being conducted remotely, limiting non-verbal communication, we were mindful of the potential influence of verbal cues, such as the interviewer's choice of words and intonation. Acknowledging the importance of reflexivity, we recognized our own potential biases stemming from our backgrounds in coaching. These experiences might have subtly influenced our interpretation of data, yet we strived to mitigate this by conducting analyses both independently and collaboratively to enhance validity and reliability.

Throughout the presentation of our findings, we maintained the essence of the data with minimal alterations, ensuring that no participant was identifiable, thus respecting their privacy and maintaining data integrity. Our approach was rooted in the ethical principles highlighted by the TENK (2023) and further emphasized by Tuomi & Sarajärvi focusing on the responsibility to respect participant autonomy and avoid causing harm (Tuomi & Sarajärvi, 2018).

By embedding these ethical practices into every stage of our research, from planning through to analysis and reporting, we not only complied with ethical standards but also contributed to the academic community with a study that was conducted with the utmost integrity and transparency. This methodology not only bolstered the credibility of our research but also upheld the trust placed in us by our participants and the broader scholarly community.

7.7 Trustworthiness

In our research, we emphasized the elimination of errors and upheld scientific integrity, critical components for establishing trustworthiness in our study. Central to our methodological approach were the concepts of reliability and validity. According to Tuomi & Sarajärvi (2018)

and Braun & Clarke (2019), these involve the repeatability of results and the accuracy of the research's claims, respectively. Our focus on validity aimed to accurately portray the phenomena under investigation, while reliability ensured consistency and stability in our findings over time.

To bolster the study's reliability, both researchers repeatedly analyzed the data and meticulously conducted each step of the content analysis, ensuring accuracy at every phase. We also revisited our analyses to consider different perspectives, enhancing our understanding. The collaborative nature of this study, with two researchers instead of one, significantly strengthened the credibility of our findings. Joint efforts in classification and interpretation ensured a robust analytical process.

Regarding validity, we crafted interview questions that aligned closely with our research questions and used open-ended questions to allow participants to express their experiences and perspectives authentically. We fostered an open and trusting environment, which encouraged participants to provide deep and detailed responses, enriching the data collected. Furthermore, we maintained transparency in our analysis process and ensured that the coding accurately reflected the data's content, reinforcing the study's validity. The involvement of both researchers in analyzing the data helped minimize potential biases, adding an additional layer of reliability.

The insights gathered from esports experts, despite the small sample size, are authentic and profoundly informative. While the limited number of participants restricts the generalizability of our findings, it allowed for an in-depth examination of the material, ensuring no vital perspectives were missed. Overall, our meticulous attention to the design, implementation, and revision of our research methods throughout the project exemplified our commitment to achieving a nuanced understanding. This careful balance between depth and breadth in our analysis showcases the high standards of validity and reliability we maintained throughout our research.

8 RESULTS

8.1 Analytical framework

From our data-driven content analysis, the most prominent themes that emerged in relation to our research questions were self-regulation (n=63), awareness (n=42), confidence (n=38), and imagery (n=20). We identified 30 'upper classes' distributed across 3 'main classes'. The three main classes consisted of team dynamics, encompassing 5 upper classes; psychological attributes, with 14 upper classes; and mental techniques, incorporating 11 upper classes. In this chapter, we will delve into a more detailed analysis of the most significant upper classes within each main class. For clarity and ease of understanding, a chart displaying the different main classes along with the volume of their respective upper classes is provided below. (Figure 2.)

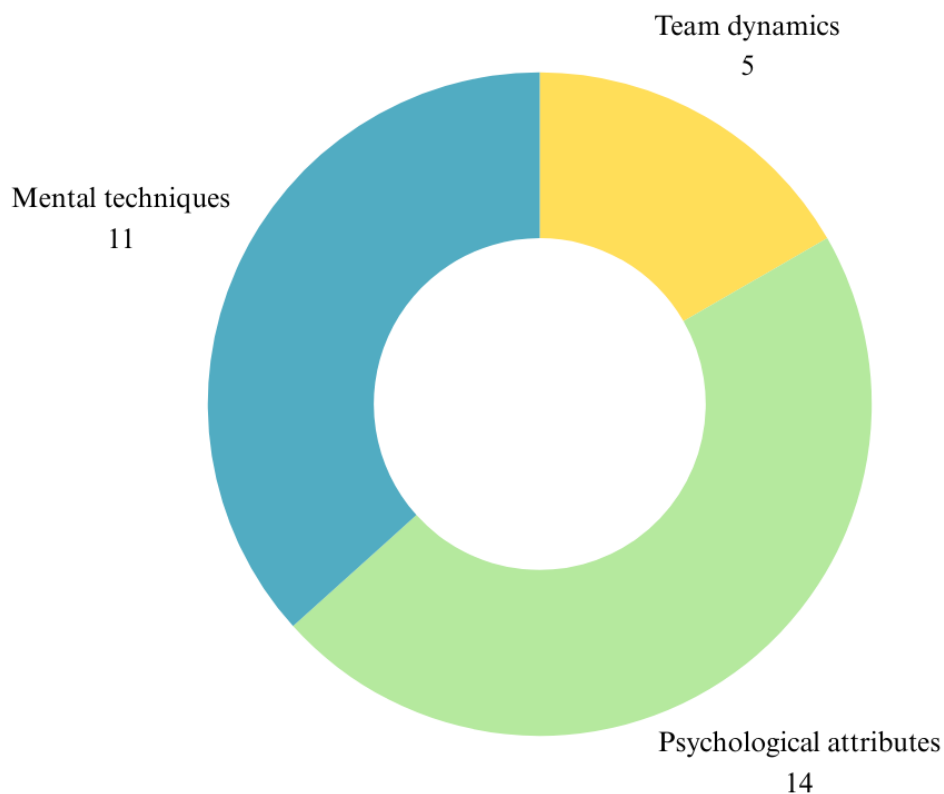


Figure 2. A pie chart displaying the distribution of the three main classes and the volume of their respective upper classes.

8.2 Team dynamics

The findings related to the main class of team dynamics are summarized as follows: We identified 6 categories within the realm of team dynamics, termed 'upper classes.' Of these, 5 were deemed significant enough to be included in this chapter. The selection criteria for excluding one attribute were due to its lower mentions (=n). Within the selected upper classes of team dynamics, a total of 154 mentions (=n) were recorded, establishing this category as the third largest of the three main classes identified. The most notable upper classes within this category were team cohesion (n=64) and communication (n=49). Of the 5 significant upper classes, 3 were deemed significant enough for further detailed explanation in this chapter. The criteria for this further distinction were based on the number of mentions (=n), as well as relevancy to the other findings and the literature review. These upper classes and their individual mentions (=n) are depicted in a chart (Figure 3) below for easy visualization.

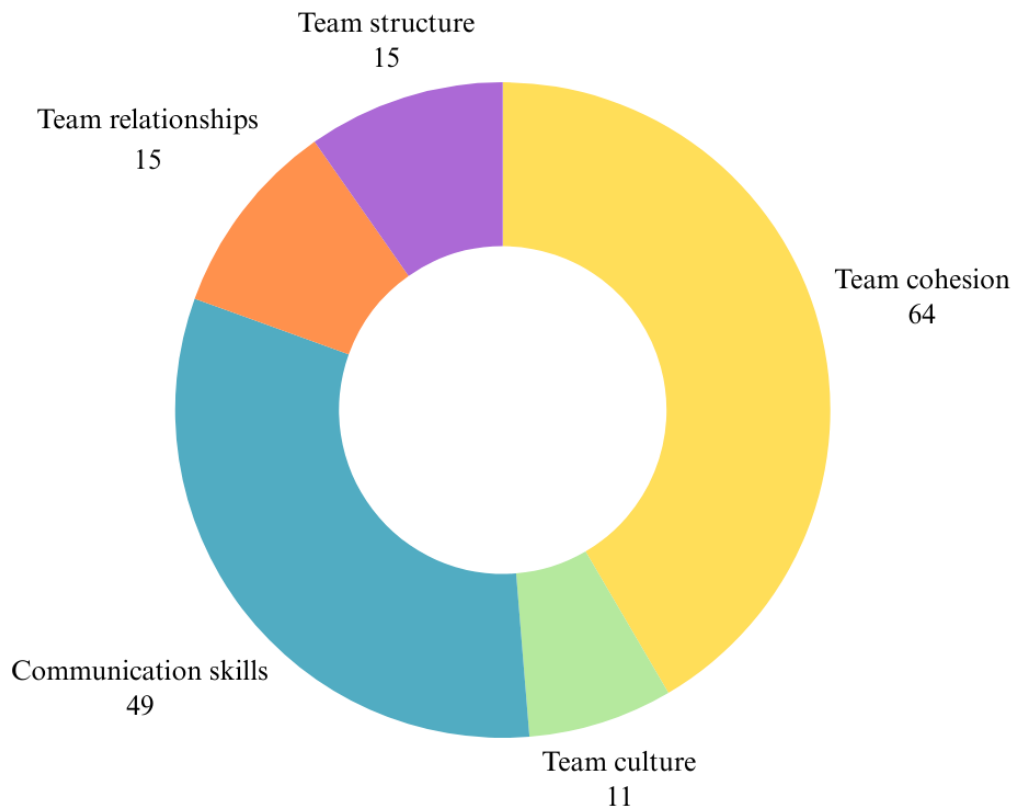


Figure 3. A pie chart illustrating the upper classes within the main class of team dynamics, along with the number of their respective mentions.

8.2.1 Team cohesion

Team cohesion (n=64) was one of the clearly largest upper categories in our study, and it was overwhelmingly the largest upper category within the main category of team dynamics. When discussing team cohesion in interviews, various aspects were highlighted, such as belongingness, team chemistry, bonding, leadership, and player roles.

Throughout the interviews, two of the participants emphasized the importance of belongingness within the team dynamics. This sense of belonging was highlighted in various ways, reflecting its multifaceted nature. Strong support from your teammates, commitment working towards the goals that the team shares and feeling a sense of belonging to a group are crucial factors for long-term enjoyment and success in a team endeavor.

“You need to be mashing with your teammates, to be able to enjoy it and keep going, so I would say support from your teammates, like the feeling of being, or belonging to a group, the feeling that you belong, that you are together, this is a really important factor if you are thinking long-term.” – Interviewee 2

“So, everyone was really committed and really wanted to do good, because we want to see if our training was worth it” – Interviewee 2

One of the participants underscored that the players should feel like they belong to a big family, and during training and working together, they should feel at home.

“What I really realized last year, and this is something that I wasn’t paying that much attention to, is that if your players are not feeling well, like feeling at home, that’s really not good, they need to feel at home, if they don’t feel like at home they will underperform.” – Interviewee 2

“They need to feel listened to, there is lot of talk, lot of one-on-one talk, a lot of team talk, they need to also feel like they are taking the decision in the group, as a team, again as a family” – Interviewee 2

As we reviewed the results, we combined team chemistry and bonding, as we felt that the underlying factors were closely related to each other. The interviews provided insights into the pivotal roles of bonding and team chemistry in fostering cohesion and success within the team environment. Participants articulated various ways in which these elements were manifested and their impact on team dynamics.

“Being on the same page, so practice, doing social activities together, bonding, I think this is important.” – Interviewee 3

When the team is successful, you can see everyone coming together, and the the ideas are just flowing and everyone is really receptive and open to things. – Interviewee 5

“So, we had like couple of things, and it was that if we win something, we celebrate together. But also, if we lose a hard game, we deal it together.” – Interviewee 6

Effective teamwork, such as being aligned on decisions, coupled with trust and faith in teammates and strong team chemistry, can significantly impact outcomes. Additionally, building a team that focuses on player synergies rather than individual skill is seen as important.

“5 people doing a bad call, or okay call, is always better than everyone doing something separate.” – Interviewee 3

“I think it is really important in esports, and underrated, that instead of having the best players, having players that meshes well is more important.” – Interviewee 3

It became evident through participant responses that leadership skills are important within a team setting and leaders need to possess strong interpersonal skills to effectively lead their teams.

“Shot calling for one person requires insane mental strength, and it is also inefficient. Five brains work better than one.” – Interviewee 3

“So, I think leader needs to have very good human skills to be able to lead the team, it's a super important thing.” – Interviewee 6

The interviews shed light on the significance of player roles within the team dynamic, emphasizing how clarity in roles and trust among team members contribute to overall success. By understanding and embracing individual strengths and responsibilities, teams can foster trust, cohesion, and adaptability, thereby maximizing their collective performance and achieving success.

“I think there is a lot of players who prefer to just chill and listen to someone, it’s good to have the combination of people who like to be leaders and followers.” – Interviewee 3

“Everyone should be mostly focused on their own role, and they should be like a part of a machine. And the machine is the team, which should be working really good, and they should trust it. In the end it’s going to even be blind trust, which can be really good, because then you won’t stress out on things too much at that point.” – Interviewee 5

“So basically, everyone’s identity in the game was so clear that we could do a strategy in important matches that we had never done before, even like 15 minutes before the game start, because everyone was so confident in their own job that we didn’t need to practice it that much.” – Interviewee 6

One of the interviewees highlighted that effectively managing conflicts within a team can serve as a positive starting point for building team cohesion and group dynamics.

“The good thing is that if you are good in dealing with conflicts this is also a really good way to start your year, because you have your first conflict you already have your first solution, and because you have your first solution, you are able to build your group dynamic, so we can see that even when we disagree we can find solutions together.” – Interviewee 2

8.2.2 Communication skills

In the interviews conducted with esports professionals, the significance of communication skills emerged as a central theme. Participants emphasized the critical role communication plays in team performance and success within the fast-paced and dynamic environment of esports.

Participants highlighted the critical role of effective communication within a team environment, emphasizing its capacity to cultivate a feeling of safety among team members, ensure clear task comprehension, and enable the exchange of feedback, both positive and constructive. Nonetheless, they advised against excessive caution in delivering feedback, emphasizing the necessity of honesty and constructive critique as catalysts for personal and team improvement.

“In terms of teamwork, being able to communicate effectively with teammates, feeling a sense of safety, understanding tasks clearly, getting feedback, and even constructive criticism, I think that can be very helpful.” – Interviewee 1

“Being too safe or nice with each other can be somewhat counterproductive. It might affect the ability to give honest feedback about areas where you need to improve” – Interviewee 1

“Well, we have also talked about how you should give feedback, it should be in a way where you are not attacking a person.” – Interviewee 5

Several interviewees echoed the sentiment that communication stands as the cornerstone of success in esports.

“Communication in this team game is probably the most important thing, and it is in my opinion.” – Interviewee 6

“Being able to communicate well is quite important. Because usually I compare it to a five-person relationship when playing Dota 2, it's quite a mess.” – Interviewee 4

“It's quite a lot easier to communicate with people that you know well.” – Interviewee 4

Participants shed light on the challenges unique to esports communication, particularly the linguistic diversity within teams. They highlighted the prevalence of misunderstandings stemming from differences in language and terminology, emphasizing the need for clarity and mutual understanding.

“I think communication is the main issue we have in this sport. You also have this in other sports but in esports it is really prevalent since it is very fast sport, and you can have up to 5 different languages in one team.” – Interviewee 2

“The first issue with communication is that we don’t have the same words to describe the same things, no joke, 80% of the conflict starts because of wordings, even 90%,” – Interviewee 2

“That’s one of the attributes that I kind of admire of people that, don’t talk much, but when they do talk it’s relevant.” – Interviewee 4

Participants emphasized the nuances of in-game communication, stressing the importance of clarity, relevance, and timing. They highlighted the significance of active listening and confident communication, noting its impact on team morale and cohesion. And in addition interviewees drew parallels between traditional sports and esports, emphasizing the crucial role communication plays in providing situational awareness and strategic coordination.

“In terms of teamwork, especially in esports, it’s important to communicate effectively and actively listen to others. Understanding when to give relevant information in a specific situation is key, because in esports its best to have one person talk at a time.” – Interviewee 4

“It’s much easier to listen to someone who is confident. Even from the tone of the voice you can tell he knows what he wants, and he doesn’t hesitate, compared to someone who’s yelling and shouting.” – Interviewee 4

“If we compare football and CS:GO, since I have played both. When I play CS:GO I can only see my screen and the mini map where I can see my teammates movements.

But I can't see what they are seeing, doing, or know what they are thinking unless we have good communication.” – Interviewee 6

Interviewee 6 emphasized the importance of simplicity in communication, advocating for clarity and brevity in conveying information to teammates. They underscored the necessity of delivering messages efficiently, particularly in high-pressure situations where rapid decision-making is paramount.

“In this game I must communicate with my teammates efficiently. I really have to think, especially in superfast situations, that I'm not only giving the information, but how I actually send a message to someone so that he understands it properly and as fast as possible.” – Interviewee 6

“We tried to keep it as simple as possible, and talk only about things that other people really need to hear.” – Interviewee 6

8.2.3 Team relationships

The interviews conducted shed light on the intricate dynamics of team relationships within esports environments. Several key themes emerged, emphasizing the importance of effective communication, adaptability, and trust among teammates and staff members.

Participants emphasized that while working with teammates might not always be easy, it is essential to cultivate mutual understanding and collaboration. This sentiment underscores the recognition that successful teamwork often involves accommodating diverse perspectives and approaches.

“Working with teammates is not always going to be nice or easy, this is just something that you must work out.” – Interviewee 3

“You have to figure out how to work with people, it's always going to be different with different people, like in your career, you're going to meet a lot of different personalities,

and you have to juggle and understand how to work with different personalities.” – Interviewee 3

“I think being able to work with people is key to having trust and efficiency in scrimms and training.” – Interviewee 3

Moreover, interviewees emphasized the significance of fostering open and supportive team cultures. They noted that cultivating strong relationships, both within the team and with organizational staff, contributes to a positive dynamic that enhances trust and cohesion. This sentiment aligns with research indicating that supportive team environments facilitate improved performance and well-being among athletes.

“But overall if the culture is really open, and if you're able to have fun with each other, even outside of the game, it will help create a good dynamic, and it's something we have done well. Just to build the team and build the relationships between the players, the team, and the staff.” – Interviewee 5

“So in a way, you would want all the relationships to be as clean or as fluid as they can be.” – Interviewee 5

“If you have this kind of good relationships, and if you are able to trust your teammates outside of the server, then you are probably able to do it on the server as well.” – Interviewee 5

Interviewee 5 emphasized the importance of maintaining a dialogue between coaches and sports psychologists to optimize coaching strategies and support player development effectively. Which highlights the interconnectedness of various stakeholders within esports organizations and the necessity of cohesive teamwork beyond just the players.

“It's important that there is an ongoing discussion between the coach and the sport psychologist about what should be happening regarding coaching.” – Interviewee 5

8.3 Psychological attributes

The summary of the findings regarding the psychological attributes crucial for high performance in esports is as follows: The study identified 18 attributes, termed 'upper classes.' Of these, only 14 were deemed significant enough to be included in this chapter. The criteria for excluding four attributes were low mentions (=n), irrelevance, and inconsistencies with the rest of the findings. Among the selected upper classes, a total of 277 mentions (=n) were recorded, marking the category of psychological attributes as the most substantial of the three main classes identified. Out of these 14 upper classes, only 8 were considered significant enough to warrant further detailed explanation in this chapter, with inclusion criteria based on the number of mentions (=n). The three most prominent attributes within this category were awareness (n=42), confidence (n=38), and trust (n=28). The upper classes and their individual mentions (=n) are depicted in a chart (Figure 4) below for easy visualization.

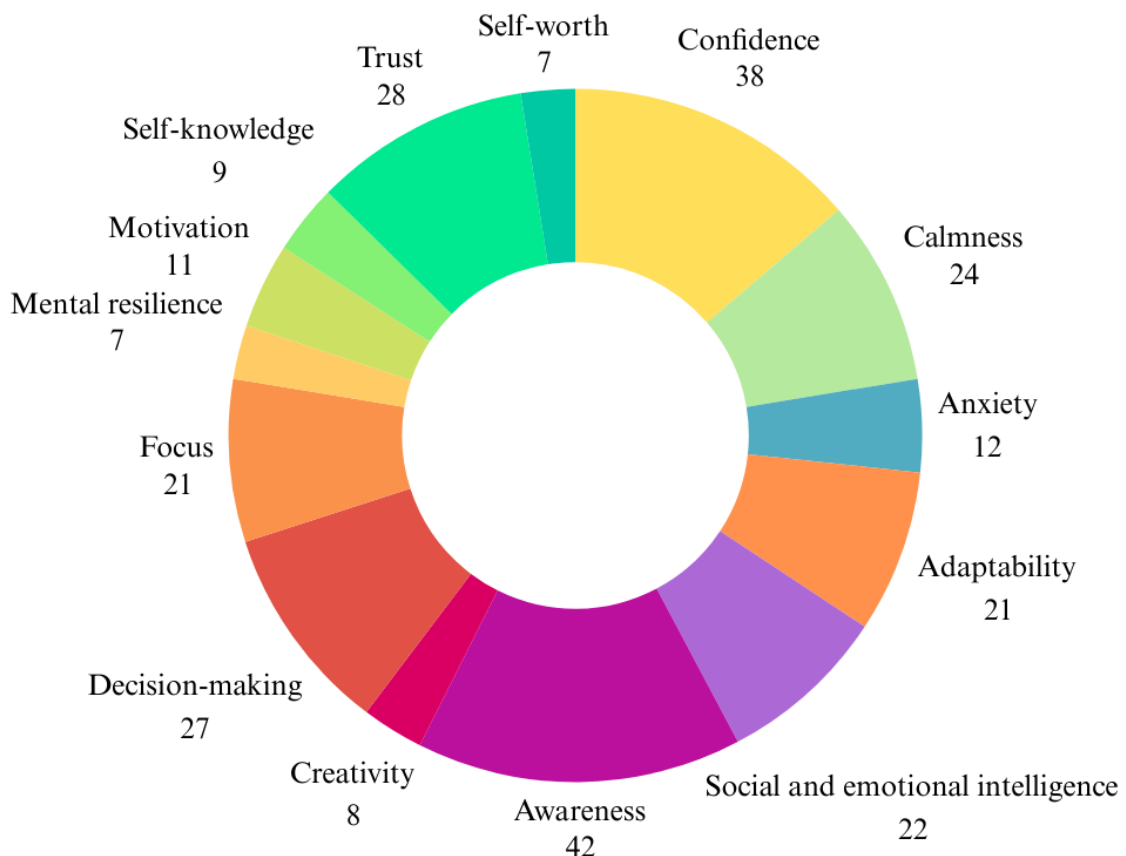


Figure 4. A pie chart illustrating the upper classes within the main class of psychological attribute, along with the number of their respective mentions.

8.3.1 Awareness

The interviews conducted shed light on the critical role of awareness in the realm of esports, encompassing both individual self-awareness and in-game awareness within team dynamics. Participants emphasized the multifaceted nature of awareness and its pervasive influence on player performance and well-being.

Self-awareness was depicted as the foundation upon which players could establish their individual roles within the team framework. By understanding their own strengths, weaknesses, and preferences, players could effectively contribute to team synergy. Additionally, self-awareness played a pivotal role in facilitating the attainment of the coveted "flow state," characterized by heightened focus and optimal performance.

“When you have self-awareness, you can start creating your own personal role, and realize what your teammates roles are.” – Interviewee 1

“But it also goes when you think about team sports, self-awareness is quite a big deal. Also, there you think about what your position is in the team, not only as an individual.” – Interviewee 4

“For me this is something that is really important for the players to have, this kind of feel, you know to be aware of what's happening in the game, this is why, the more you play, the more you will have the capability to reach this flow state.” – Interviewee 2

Interviewee 6 articulated the necessity of maintaining a comprehensive understanding of the game environment, including teammate actions, opponent movements, and potential outcomes of their own actions.

“I think in-game awareness it's a super big factor, because at least for me, my whole game is based on being aware on what is happening around me, and what might happen if I do something, or what might happen if someone else is doing something.” – Interviewee 6

Participants stressed the importance of emotional self-awareness beyond gameplay. They emphasized the impact of internal states like stress and exhaustion on performance and overall experience. By being attuned to these factors, players can proactively manage stressors and optimize their performance.

“So, I would say that awareness is kind of key to everything. When it comes to your mornings and whatever preparations before the game, and like all the emotions you're going through.” – Interviewee 6

“I think that a huge part is to be aware of how I feel, and how everything feels during the competition day and when I wake up.” – Interviewee 6

“So, for me it's really important to understand how I'm feeling and how exhausted I am, and sometimes it gets a bit messy because stress is a thing that just kind of sneaks up on you, and you realize it's too late.” – Interviewee 6

Insights from interviews highlight awareness as crucial in esports. Enhanced self-awareness helps players define roles, perform better, and navigate gameplay complexities. In-game awareness aids strategic decisions and adaptability for competitive success. Extending awareness to emotions and physicality fosters resilience amidst pressure.

In summary, awareness emerges as a foundational element in the esports landscape, shaping player performance, team dynamics, and overall well-being. As esports continue to evolve as a competitive domain, cultivating awareness — both individually and collectively — remains paramount for achieving excellence and longevity in the field. The insights garnered from the interviews offer valuable perspectives on the nuanced interplay between awareness and esports, highlighting avenues for further research and practice in this burgeoning domain.

8.3.2 Confidence

Confidence (n=38) was the largest upper category within the main category of psychological attributes. The interviews conducted with esports professionals illuminate the paramount importance of confidence within the competitive gaming sphere. Through diverse insights and

experiences, the excerpts underscore the multifaceted nature of confidence and its profound impact on individual and team performance.

Participants consistently highlight self-confidence as a cornerstone of success. They emphasize its primacy, affirming that self-assurance serves as the bedrock upon which all other skills and attributes are built. It's recognized as the driving force behind decisive actions and optimal performance.

“Self-confidence is for sure the most important for me.” – Interviewee 1

“If you are confident, you just perform better, and that’s just a fact.” – Interviewee 6

“Most important is confidence, if you are confident, you will not stutter, and you will not overthink.” – Interviewee 3

“In LoL, sometimes the opportunity is there for just a few seconds, and you just have to know and be ready to pull the trigger. If you don’t feel confident and are not willing to pull the trigger, you will fail a lot of potential plays.” – Interviewee 3

The interviews also underscore the delicate balance between confidence and humility. While self-confidence is essential for asserting oneself in competitive scenarios, humility ensures receptivity to learning and growth. However, participants caution against the dangers of overconfidence. They recognize that excessive self-assurance can lead to complacency and compromised decision-making. Maintaining a healthy level of confidence is essential for sustaining peak performance without succumbing to arrogance and sometimes even the healthy confidence you’ve got can show up to others as overconfidence.

“When people get overconfident it can show up in the game with decision making getting worse.” – Interviewee 5

“You can be a little arrogant to the outside, but with the team you can be humble but still show you are confident.” – Interviewee 4

“On an individual level you just have to be confident and believe that you can beat the best player. It’s a fine line between being egoistic and being overconfident.” – Interviewee 4

“One sentence that I will always remember was when one of my experienced teammate said: Do not respect the enemy until he gives you a reason to respect him.” – Interviewee 4

Moreover, confidence is depicted as surpassing simple belief; it intertwines with the flow state, fostering a deep sense of assurance and mastery. At this heightened level of confidence, individuals operate at their utmost potential, executing tasks with precision and ease.

“It felt like something more than confidence, it was like I knew I would do good.” – Interviewee 2

Lastly, the interviews shed light on the diverse origins of confidence. Whether derived from personal grooming habits, familial relationships, or dedicated practice, confidence manifests differently for each individual. Understanding these diverse sources empowers players to cultivate and nurture their self-assurance effectively.

“I feel like there are different types of confidence. What makes people confident? For some people, it might be that you get a haircut once a week and that you go to the gym. And for some people it might be from spending time with loved ones outside of the game, and for some people it's coming from practice.” – Interviewee 6

In conclusion, the interviews illuminate the integral role of confidence in esports. From its foundational importance to its manifestation in decisive gameplay and team dynamics, confidence emerges as a linchpin of success. Balancing self-assurance with humility and recognizing the diverse sources of confidence are essential for players striving for excellence in the dynamic and competitive landscape of esports.

8.3.3 Trust

In the interviews conducted with esports athletes, the significance of trust emerged as a pivotal attribute in achieving success within the competitive realm. Trust was portrayed in various dimensions, primarily revolving around trust in teammates and trust in oneself. These insights shed light on the intricate dynamics that underpin team cohesion and individual performance in esports.

The interviews revealed a agreement on the crucial role of trust within team. Participants emphasized that success in team-based esports competitions relies heavily on the trust placed in one's teammates. This highlights the understanding that triumph in esports is a collaborative effort, requiring mutual trust and confidence in the abilities of each team member. Furthermore, trust was identified as pivotal in navigating pivotal moments during gameplay, where split-second decisions hold immense significance. The ability to trust teammates implicitly in these critical situations was recognized as essential for seizing opportunities and surmounting challenges.

“Obviously, trust is really important in team sports, because you can’t win alone, so you need to place your trust on your teammate’s performance.” – Interviewee 2

“Trust is something that helps you win in the important moments, like in these moments when you don’t have time to think or understand why someone is doing something, you just relay on trust.” – Interviewee 3

“It’s probably realistic to say that there will always be these small cracks, but in a way you would want everyone to be able to trust each other and be in this kind of mindset that everyone is doing everything they can for the team, and for us to reach our goals rather than looking at individual goals.” – Interviewee 5

“And in that sense, it actually really needs to be the blind trust, because otherwise you will never have any decisions made.” – Interviewee 5

“I think we just understood what the most important things for us are, to trust the team always and deal with the highs and deal with the ultimate lows together, because then I

think, that created the factor that we were able to play without pressure.” – Interviewee 6

Apart from trusting teammates, interviewees also stressed the importance of self-trust. They emphasized the necessity of recognizing one's own capabilities and having confidence in individual skills as essential for success in esports. This self-assurance not only enables players to perform optimally but also enhances overall team synergy. Furthermore, the connection between self-trust and the capacity to take calculated risks was emphasized. This implies that a robust sense of self-confidence empowers players to implement bold strategies and seize opportunities effectively.

If you even want to ever win a game, you have to at least trust yourself, and know that you can do it. – Interviewee 4

I think it's built like that, because the team was clicking so well, and the trust is obviously the hitting factor there between everything. You trust your teammates and you trust yourself, and when you trust your teammates, you are able to do like more risky plays sometimes. – Interviewee 6

In conclusion, the insights gleaned from the interviews underscore the paramount importance of trust in esports. Whether manifested through trust in teammates or trust in oneself, this attribute serves as the bedrock upon which successful teams are built. By cultivating a culture of trust, esports teams can enhance their cohesion, resilience, and ultimately, their chances of victory in the competitive field of esports.

8.3.4 Decision-making

Decision-making (n=27) was the fourth biggest upper category within the main category of psychological attributes. It emerges as a critical attribute in the realm of esports, with its significance underscored by the insights gleaned from interviews with professional players and coaches. The excerpts illuminate the pivotal role decisiveness plays in the high-paced, intense environment of competitive gaming.

The interviews emphasize the significance of decision-making in communication processes, elucidating its pivotal role in team coordination and strategy execution and the relationship between information and decision-making is emphasized, emphasizing that information holds little value if not utilized effectively to inform decisions.

“Decision-making in our communication was a very big factor.” – Interviewee 6

“Information means nothing if you can’t make decisions based on it.” – Interviewee 4

The correlation between confidence and decision-making is evident, as confidence enables players to make split-second judgments without hesitation, thereby ensuring optimal performance. Players assert that when confidence is coupled with unwavering focus, decision-making becomes instinctual and instantaneous. This suggests that a harmonious balance between psychological factors such as confidence and focus is integral to facilitating rapid decision-making in the heat of competition.

“Decisiveness is also really important. You don’t have much time to think, that’s why you need to be confident, but you also have to be able to pull the trigger instantly.” – Interviewee 3

“When you feel confident and are focused, your decision-making is instant.” – Interviewee 5

“When I’m processing decisions in the game, and wondering if this is the best play, I’m already a little bit late with the decision.” – Interviewee 4

In conclusion, the interviews underscore the indispensable nature of decision-making in esports. Whether in individual gameplay or team communication, decisiveness emerges as a linchpin of success, underpinned by factors such as confidence, information processing, and collaborative synergy. Understanding and honing decision-making skills are therefore paramount for esports athletes, as they navigate the intricate landscapes of competitive gaming with agility and precision.

8.3.5 Calmness

It became evident through participant responses that calmness (n=24) has a crucial role within the competitive gaming environment. Through various perspectives and experiences, the excerpts emphasize the importance of maintaining composure amidst the pressures of gameplay.

“I think calmness is also important so that you don’t stress out too much.” – Interviewee 3

“The reason why I focus on being calm is because it is not as mentally and physically draining as being constantly affected by your emotions, which will make it harder for me to get into the zone.” – Interviewee 6

One common thread throughout the interviews was that there is a clear correlation between confidence and calmness in esports. Leaders who exude calmness can inspire confidence and stability within their teams, fostering a conducive environment for success. For example, coaches who remain stable and avoid displaying excessive negative emotions serve as role models for their players, instilling a sense of confidence and trust.

“I think one of my greater strengths was being able to communicate and lead, with a certain calmness.” – Interviewee 4

“I think it is good if the coach can stay really calm and maybe even not show too many emotions, especially negative emotions. Because its good if the players can look up to a coach who is stable and not nervous.” – Interviewee 5

“I think my confidence is being built a lot around my calmness.” – Interviewee 6

One of the interviewees also highlighted the connection between calmness and achieving a state of flow. Which suggests that maintaining a calm demeanor contributes to optimal performance and immersion in the game.

“When you are in a state of flow you actually feel really calm.” – Interviewee 1

In conclusion, the interviews underscore the pivotal role of calmness in esports. Whether it's facilitating flow states, managing stress, or fostering effective leadership, maintaining composure emerges as a cornerstone of success in competitive gaming. As esports continues to evolve, the ability to cultivate and sustain calmness amidst the pressures of gameplay remains an indispensable attribute for players striving for excellence.

8.3.6 Social and emotional intelligence

During the interviews, social and emotional intelligence stood out as vital qualities, particularly in the context of esports and its teams. Participants emphasized the intricate connections between emotional intelligence, social aptitude, and how they influence both team dynamics and performance.

The interviews emphasized the intricate nature of emotional intelligence and social skills, indicating that lacking one could negatively impact team performance. While emotional intelligence enables players to identify and regulate emotions, social skills are crucial for fostering seamless team interactions. Nevertheless, it was acknowledged that an imbalance, where heightened emotional sensitivity is not complemented by strong social adeptness, could pose challenges to team unity and overall performance.

“If I understand something about another player that some other people don’t, and I realize what I need to tell them to keep them calm or confident, I help the team as well as myself.” – Interviewee 6

“Emotional intelligence, I think it's one of the more important factors.” – Interviewee 4

“I think emotional intelligence in those moments, when things get hectic and somebody is being angry or feeling frustrated, emphasizing, and really trying to understand them in those moments, really helps because it affects the whole environment.” – Interviewee 1

“Social and emotional intelligence is hugely beneficial in teams. Thinking of my teams that I have played with, I think we have always had two to three guys who have been more caring towards other people, or socially more interactable, and then I think it helps to understand your teammates better.” – Interviewee 1

Additionally, the interviewees noted that lacking social skills could sometimes be a more significant issue than lacking social intelligence, suggesting that the ability to navigate social interactions effectively is crucial for team cohesion and performance.

“You can have emotional intelligence, but also lack the social skills. Sometimes I feel like very emotionally smart players can harm their performance in a team.” – Interviewee 1

“Lack of social skills sometimes seems to be a bigger problem than social intelligence.” – Interviewee 1

The findings revealed that coaches and psychologists play a crucial role in fostering effective communication, conflict resolution, and emotional regulation within the team. They underscored the importance of tailoring their strategies to the individual needs of players, ensuring that everyone feels comfortable, confident, and engaged, ultimately contributing to improved team performance.

“It's really important that sport psychologist and coach understand what kind of players and people they are working with to keep everyone comfortable, confident and involved.” – Interviewee 6

In conclusion, the findings underscore the critical role of social and emotional intelligence in esports teams. Participants emphasized the intricate interplay between emotional intelligence, social skills, and team dynamics, highlighting their collective impact on performance outcomes. Recognizing and nurturing these attributes within esports environments can lead to more cohesive teams and improved overall performance.

8.3.7 Focus

The interviews with esports professionals shed light on the paramount importance of focus (n=21) within the competitive field of esports. Through various perspectives and experiences, the excerpts highlight the critical role that maintaining focus plays in achieving peak performance.

The interviews underscore the necessity of vigilance and heightened awareness to sustain focus. Players recognize that the rapid pace of esports necessitates unwavering attention to detail. Even a brief lapse in focus can lead to missed opportunities or negative consequences. Thus, it is crucial for players to remain vigilant and attuned to the intricacies of gameplay to maintain optimal performance.

“Yeah, focus is very important when you're playing on the high level because the situations are so fast that if you even blink at the wrong time, you might be done for the round.” – Interviewee 6

“And this is something that requires a deep focus state, to not lose a single detail about what is happening, because if you lose focus for even a millisecond, then the situation might be over.” – Interviewee 6

The concept of the flow state emerges as a pinnacle of focus attainment. Players describe how complete focus and immersion in the game lead to a state of flow, wherein one's actions become effortless and intuitive. The findings revealed also that the understanding that mental rejuvenation or rest is essential for sustaining optimal focus levels.

“When a player is completely focused and in a state of flow, he is mostly just being silent and completely outplaying everyone.” – Interviewee 2

“There were times that I later tuned into myself, like taking time for myself, and really had some rest time, so I could fully focus.” – Interviewee 1

“So basically you keep focused all the time. And I think that's one of the things what is making people so exhausted nowadays as well, because the practice amounts that you

play is so huge, especially for the young teams who want to get the breakthrough. Since you physically you can sit here for, let's say 12 hours if you just get 8 hours sleep every night.” – Interviewee 6

Interviewees stress the importance of maintaining task-oriented focus, wherein attention remains directed towards the immediate objectives and team goals. This laser-like focus on specific roles and objectives is deemed crucial for effective gameplay and strategic execution. Players recognize that distractions, such as mobile phones, can no longer be tolerated at the highest levels of competition.

“It’s important to be able to keep your focus on the task ahead and just stay specifically on that. You shouldn’t let your focus diverse into different things, you need to focus on what your role is, what the team is trying to achieve and what I need to do.” – Interviewee 5

“As esports is growing and getting a more professional year by year, I think focus in general is getting to be an more important factor. Because you just simply cannot afford nowadays to have your phone as a distraction next to you when you play.” – Interviewee 6

In conclusion, the interviews highlight the vital role of focus in esports. Whether it's achieved through restorative practices, entering the flow state, or maintaining task-oriented vigilance, focus stands out as a crucial element for success in competitive gaming. As esports progresses, the ability to maintain unwavering focus amidst evolving challenges becomes even more essential for players aiming for excellence in the arena.

8.3.8 Adaptability

Adaptability emerged as a central theme across the interviews, with participants emphasizing its critical role in the competitive landscape of esports. Through their insights, it becomes evident that adaptability manifests in various facets, including in-game decision-making, creativity, mechanical skill, and overall competitive performance.

Interviewees emphasize the crucial role of adaptability in succeeding within the dynamic and ever-changing landscape of esports. They stress that adaptability is a primary skill that comes to mind when considering traits essential for gaming success. Moreover, interviewees note that unexpected events frequently arise, emphasizing the indispensability of adaptability for effectively navigating challenges and achieving success in competitive gaming.

“Adaptability is one of the first terms that comes to my mind when talking about skills that transfer well into competitive gaming.” – Interviewee 4 (adaptability)

“But you have to be able to adapt because things don't go always as you plan.” – Interviewee 6 (adaptability)

Interviewees underscored the importance of adaptability within the game environment. One interviewee highlighted how the ability to anticipate opponents' decisions empowers players to adapt swiftly, gaining a strategic advantage. This adaptability in-game is not merely reactive but also proactive, enabling players to stay ahead of their adversaries by predicting and countering their moves.

“You have to adapt to the situation, no matter if it's going to be different every time. But how? That's what differs you from a great player and a bad player, because the better player is going to be more adaptive”. – Interviewee 4

“When you unconsciously feel like you already know what the next decision for the opponent, you are able to adapt and have the upper hand over your opponent.” – Interviewee 2

Several participants highlighted the fusion of creativity and adaptability in esports. They emphasized that top players possess the ability to think beyond conventional strategies, consistently surprising opponents with innovative tactics. This blend allows players to transcend established norms, introducing novel approaches to outmaneuver adversaries. Moreover, participants emphasized the rapid decision-making pace in esports, underscoring how adaptability facilitates navigating complex scenarios within seconds. This combination of

adaptability and quick thinking distinguishes top-tier players, enabling them to make split-second decisions with ingenuity and precision.

“You will not always be ahead, this is how the best players in my mind behave, they are super creative and always find something out of the gamebook to surprise the opponent.” – Interviewee 3

“Sometimes you only have a few seconds to see and make decisions, and only the best players can do this, I think its connected to adaptability and creativity.” – Interviewee 3

One of the interviewees stressed the vital connection between adaptability and mechanical skill in esports. While mastering mechanical abilities is crucial, adaptability distinguishes exceptional players. The unpredictable nature of esports necessitates diverse responses, making adaptability indispensable for maintaining a competitive edge in dynamic gameplay.

Adaptability is one of the things you have to have if you want to have good mechanical skill in the game. Because that's the thing that makes you different from the others that are not so good at the game, since there's so many different situations that you can't just try to remember all of them. – Interviewee 4

The insights gleaned from the interviews underscore the paramount importance of adaptability in esports. Whether in-game decision-making, creativity, mechanical skill, or overall competitive performance, adaptability emerges as a defining attribute separating exceptional players from the rest. In the dynamic and fast-paced world of esports, adaptability serves as the linchpin of success, empowering players to navigate the ever-changing landscape with finesse and resilience.

8.4 Mental techniques

The summary of the findings regarding the mental techniques utilized for high performance in esports is presented as follows: The study identified 14 techniques within the main class of mental techniques, termed 'upper classes.' Out of these, 11 were deemed significant enough to be included in this chapter. The criteria for excluding three techniques were due to low mentions (=n), irrelevance, and inconsistencies with the rest of the findings. Within the selected upper classes of mental techniques, a total of 176 mentions (=n) were recorded, marking this category as the second largest of the three main classes identified. From these 11 upper classes, 8 were deemed significant enough to warrant further detailed explanation in this chapter, based on the number of mentions (=n). The most impactful among these upper classes were self-regulation (n=63), imagery (n=20), and goal-setting (n=19). These upper classes and their individual mentions (=n) are depicted in a chart (Figure 5) below for easy visualization.

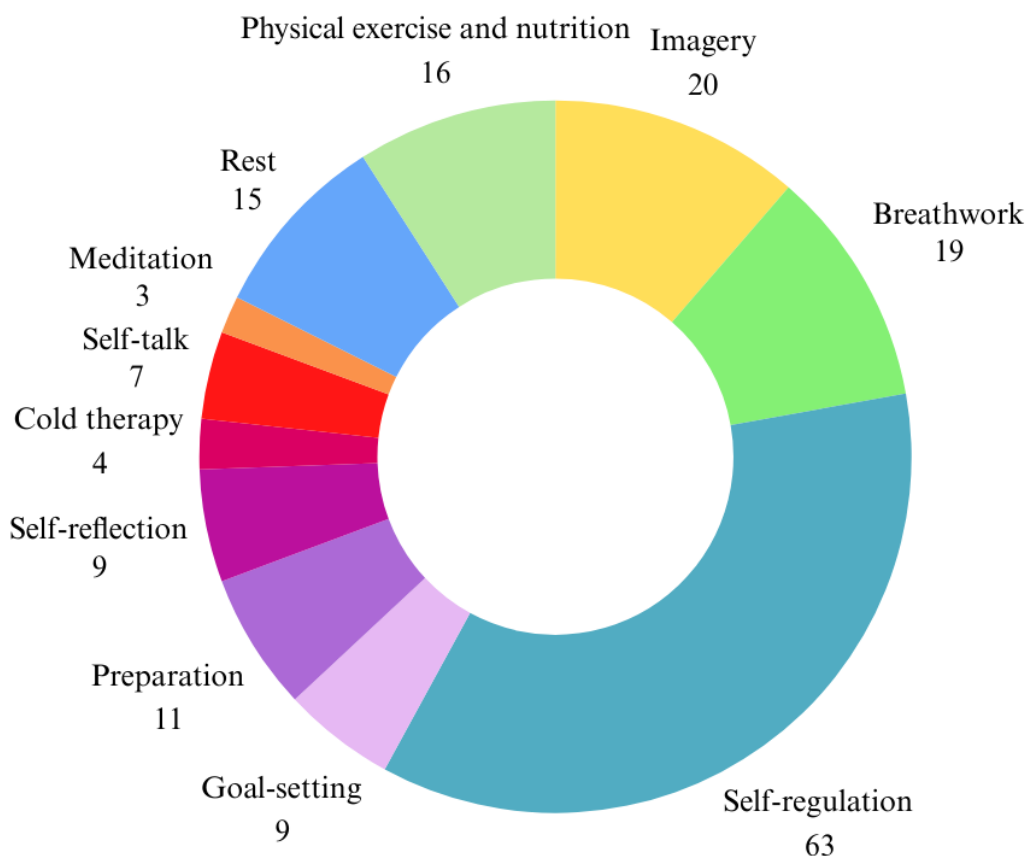


Figure 5. A pie chart illustrating the upper classes within the main class of psychological attribute, along with the number of their respective mentions.

8.4.1 Self-regulation

Self-regulation emerged as the predominant mental technique emphasized by the interviewees to enhance performance in esports. Participants underscored its significance and diverse applications in performance psychology within esports. They highlighted its crucial role in managing various psychological aspects to maintain peak performance levels during gameplay. Self-regulation was described as a versatile tool utilized by esports players to manage excitement levels, navigate egos, recover from challenging situations, and, from a coach's perspective, cultivate optimal energy levels within a team.

One significant aspect of self-regulation discussed was its connection to ego management. Interviewee 1 emphasized the importance of regulating ego-driven thoughts and feelings to prevent negative impacts on performance.

“Often people let their ego get out of hand and start to think that they are better than others, for me I always had to regulate these thoughts and feelings, since I always felt it affected my performance badly.” – Interviewee 1

Additionally, interviewees highlighted the role of self-regulation in managing energy levels before games. Interviewee 1 described a moment of pause to control high energy levels, while Interviewee 3 emphasized the importance of regulating emotions to enable creativity and comebacks in challenging situations.

“When energy level hit really high, like right before the game, we would just have a minute of pause, not saying anything, kind of doing whatever what they feel that helps them.” - Interviewee 1

“You know you are stressed but it doesn't affect you that much that you would be losing your mind. I think that more experienced players understand that no matter how bad it gets, you can still come back, and here self-regulation is the first step. The second step is creativity after calming down your emotional state.” - Interviewee 3

Furthermore, overexcitement was identified as a potential hindrance to performance, with Interviewee 5 emphasizing the need to control energy levels to prevent detrimental effects on gameplay.

“Sometimes the energy levels are rising, and people can get overexcited, which might make them play worse.” – Interviewee 5

“So instead of keeping the higher energy levels, you might want to drop it down if you start getting overexcited.” - Interviewee 5

Coaches also play a vital role in monitoring and facilitating self-regulation within teams. Interviewee 5 discussed the importance of understanding the emotional state of players and managing the flow of the game accordingly.

“It’s a bit team dependent how emotional your players are. Of course, as a coach, you should keep an eye on how the flow of the game is going and how the players are feeling the game.” – Interviewee 5

The significance of sport psychology in fostering self-regulation was highlighted by Interviewee 6, who shared personal experiences of learning to manage inner talk and emotions with the help of a sport psychologist. This underscores the importance of addressing emotions and thoughts to maintain optimal performance levels.

“Lucky for me, I had a very good sport psychologist in one of my teams, and we touched on this topic and I learned the fact that I didn't notice myself if I have a bad day or a bad game, I tried to force myself too much back into it and I actually ended up putting more pressure on myself by basically hyping myself up in a wrong way. And we called this term inner talk, and basically it took me a long time to understand that I'm going into the wrong zone.” – Interviewee 6

“There are good and bad days, understanding that is part of life, not every day is perfect. So, I hope that it gets mainstream that every team has a sport psychologist or something similar.” – Interviewee 6

Lastly, interviewee 6 also stressed the importance of addressing emotions and thoughts during games, emphasizing their impact on performance. They highlighted the necessity of processing emotions from mistakes before bedtime to prevent them from affecting future performance. This underscores the role of emotional self-awareness and openness to talk about emotions.

“Dealing with emotions is the most important thing, and that involves dealing with the thoughts or whatever else you felt during the games.” Interviewee 6

“I need to deal with my emotions from mistakes in practice or games before I go to bed, so they don't stay in my head for the next day. So, dig deep in emotions and talking about them is important.” – Interviewee 6

Overall, the interviews underscored the critical importance of self-regulation in esports, not only for individual players but also for coaches and teams as a whole. Integrating self-regulation practices into training regimens and team structures could contribute significantly to enhancing performance and overall well-being in the esports domain.

8.4.2 Imagery

The findings underscored imagery as the second most utilized mental technique among interviewees to improve their performance. Participants emphasized its multifaceted utility, including preparation for games, practice, in-game communication, and outlining various visualization methods.

Participants frequently cited the use of imagery, particularly visualization, as a significant factor in their performance enhancement strategies within esports. Interviewee 1 and 6 highlighted the importance of visualization as a preparatory tool, indicating its role in mentally rehearsing and priming oneself for high-stakes competition.

“Visualization was one thing that helped me before big tournaments.” - Interviewee 1

“If I repeat certain situations in my head, I’m more prepared for these different situations, even more than if I only watch a demo for example.” - Interviewee 6

Interviewee 2 echoed this sentiment, ranking visualization as the third most effective technique in their repertoire. This suggests that visualization holds considerable value in the cognitive preparation process for esports athletes.

“I think visualization was the third most effective technique for me.” – Interviewee 2

Furthermore, interviewee 4 highlighted the advantages of imagery experience and regular visualization practice. Observing how visualizing tough scenarios beforehand aids in preparation and adapting gameplay during intense matches.

“When you have a lot of experience imagining harder games, it makes it easier to play and adjust your gameplay in higher stakes matches.” – Interviewee 4

Interviewee 6 elaborated on the imagery process, detailing how to simulate gameplay scenarios like map navigation and tactical decisions to sharpen skills and reactions.

“When I’m laying down, I’m just like picturing the map in my head when I’m playing and the certain situations where I want to get better to peak some angles, basically I’m going through different scenarios and reactions” – Interviewee 6

Finally, Interviewee 6 expanded on how imagery could also assist with other crucial elements such as communication.

“Visualization in that way was one of the key things for me to get good, and because it also made me think about the communication part a lot more.” – Interviewee 6

Overall, the interviews underscored the pivotal role of imagery, particularly visualization, as a cornerstone technique in esports. Its efficacy in facilitating mental rehearsal, skill refinement, adaptive gameplay, and team communication reaffirms its status as a vital mental technique and attribute for competitive success in the esports.

8.4.3 Breathwork

In our study investigating mental techniques employed by esports players, breathwork emerged as a prominent and highly valued practice among interviewees. Participants consistently highlighted its efficacy in enhancing calmness, focus, awareness, and self-regulation, particularly during crucial moments such as before matches or in response to stressful situations.

Interviewee 2 underscored breathwork as the second most effective technique, attributing its success to its ability to foster calmness and heighten players' focus and awareness. Similarly, Interviewee 3 emphasized the importance of breathwork in increasing self-awareness and calming nerves before important matches. This sentiment was echoed by Interviewee 5, who noted the role of breathwork in facilitating rapid resets and sharpening focus, aligning with existing research findings on its calming and refocusing effects.

“I think breathwork was probably the second most effective technique for us, because it helped calm players, and increased their focus and awareness.” – Interviewee 2

“I do breathing before the matches because that makes me aware of myself more and of my mental state, and calms me down, for important matches.” – Interviewee 3

“The one I use the most is breathing exercise for games to calm me down.” – Interviewee 3

Furthermore, Interviewee 3 highlighted the practical utility of incorporating breathwork into gameplay routines, emphasizing its role in stress reduction and self-regulation. This sentiment was supported by their engagement with a sports psychologist, indicating the professional recognition of breathwork as an essential aspect of mental conditioning in esports.

“I was working with sport psychologist, and we were doing breathing exercises, and learning how to breath with your stomach instead of your chest, and this technique was efficient. If you just master how to breath correctly, its more efficient.” – Interviewee 3

“One that I did the most and was useful for me was the breathing, because I could feel that it makes me stress less, which is something I can measure a little bit.” – Interviewee 3

Importantly, interviewees stressed the importance of proper breathing techniques, such as diaphragmatic breathing, over shallow chest breathing. Mastery of correct breathing patterns was identified as a key factor in maximizing the efficiency and effectiveness of breathwork in esports performance.

“The breathing techniques, I think there's a lot of studies that shows that it will calm you down and will reset you faster and make you more focused, which I think is one of the good things that we have done right now.” – Interviewee 5

“Usually after something bad happens, first thing is to take a deep breath and slow your breathing through your stomach, it helps a lot to just slow down the hard pace.” – Interviewee 3

The unanimous support for breathwork across all interviews highlights its crucial role as a mental technique in esports. Its capacity to induce calmness, improve focus, expedite resets, and assist in self-regulation establishes breathwork as a valuable asset for enhancing player performance and well-being within the intense and competitive realm of esports. These insights underscore the necessity of incorporating breathwork into the training routines and psychological support systems of esports professionals, emphasizing its potential to foster enduring success and resilience in the field.

8.4.4 Physical exercise and nutrition

Physical exercise and nutrition emerged as crucial components of performance enhancement among esports professionals, as evidenced by the insights gleaned from interviews with players and coaches. Basically, the balance between physical exercise, nutrition and sleep was a key factor that the participants highlighted.

“Last year we had a performance coach that was working on all these aspects, so we had like sleep trackers, we had cooks for food, we had gym that was open for all players all the time, so it was really good, we also had like in specific exercises that were prepared by the performance coach.” – Interviewee 2

“I think consistency, like in everything you do, consistency in practice, consistency in nutrition, in sleep, and in daily routines.” – Interviewee 3

“I need to feel good, with my body, so like sleep, eat, and body exercises.” – Interviewee 3

“But yeah, so basically diet, sleep, and cardio works for me very good to give myself balance, but I would say the word balance for me is the most important thing.” – Interviewee 6

“Well, exercise was one thing I usually did after the game, but not preemptively.” – Interviewee 4

In summary, the interviews elucidated the integral role of physical exercise and nutrition in esports performance. Beyond mere gameplay skills, players and coaches recognize the imperative of nurturing a healthy body and mind to sustain peak performance levels and achieve long-term success in the dynamic realm of professional gaming.

8.4.5 Rest

Rest, both physical and mental, emerged as a crucial theme in the interviews conducted with esports professionals. Participants emphasized the necessity of stepping out of intense gaming or training modes to recharge their minds and bodies effectively. This chapter explores the perspectives shared by the respondents regarding rest and elucidates why it is considered a vital mental technique in the world of esports.

“If I enter this focus mode, it is also very exhausting and mentally draining. So, it's important for me to get out of the fighting mode or the adrenaline mode. So, I kind of put myself in a resting mode.” – Interviewee 6

“There were times that I later tuned into myself, like taking time for myself, and really had some rest time, so I could fully focus.” – Interviewee 1

Participants emphasized the critical role of quality sleep in their rest routines. They recognized that sufficient sleep each night enhances cognitive function, regulates mood, and improves overall performance in esports. Additionally, participants highlighted the value of reflecting on daily experiences and matches before bedtime. They saw this practice as a way to decompress mentally and foster personal growth.

“The important things for me are to have the balance between everything. I'm kind of very sensitive in the way that if I need to focus a lot, let's say I have a lot of matches in one week and there are no off days, I need to have a pretty good balance between resting and having the physical exercise as well, to keep it all balanced so I'm able to have good sleep.” – Interviewee 6

“For me it's very important to have at least 8 hours sleep every single night.” – Interviewee 6

“But for me it's very important to have good sleep and end the days with actually going reflecting on the thoughts and the experiences that I had during the day and the matches.” – Interviewee 6

Interviewee 1 highlighted that he used meditation to relax and recharge. Daily meditation helped him disconnect from the pressures of esports, refreshing his mind and inducing a calm state similar to secondary sleep.

“I did meditate daily in those times, like kind of just tuning out, I also felt like I was very often, maybe working too much, so I need some kind of rest time, so I kind of use it as a secondary sleep kind of.” – Interviewee 1

The insights gleaned from the interviews underscore the paramount importance of rest as a fundamental aspect of mental training in esports. By incorporating strategies such as meditation, prioritizing sleep, and maintaining a balanced lifestyle, esports professionals can optimize their cognitive abilities, sustain peak performance, and foster long-term success in the competitive field of esports. Recognizing rest as a vital component of their training regimen, individuals strive to cultivate resilience, focus, and well-being in pursuit of their esports aspirations.

8.4.6 Preparation

Preparation stands as a cornerstone in the realm of esports, as highlighted by insights from interviews with seasoned players. A recurring theme across the narratives is the significance of mental techniques and warm-up routines in optimizing performance.

Interviewee 1 emphasizes the need to enter a "performance mode" before gameplay, focusing on mental immersion and workstation familiarity.

“In DOTA warmup helps, I need to turn on the performance mode, and kind of put myself into the game before it starts.” – Interviewee 1

“Some things that usually helps me prepare myself, is getting used to my workstation, like mouse and keyboard maneuvering, getting use to clicking and watching my screen, but also noting how I would be interacting with other people.” – Interviewee 1

Similarly, Interviewee 3 underscores the importance of pre-game warm-ups, such as reviewing VODs (video-on-demand), to enhance awareness and readiness. They note a correlation between meticulous preparation, adherence to technique, and peak performance. However, Interviewee 3 also acknowledges instances where exceptional gameplay transcended the confines of structured preparation, suggesting the interplay between innate talent and strategic prowess. While spontaneous brilliance may occasionally manifest independent of specific preparatory measures, the consistent application of effective techniques remains instrumental in fostering sustained success.

“Warm-up is important, so if your practicing doing something before, not only playing, but something that gets you into the state of awareness for scrim, for example watching vods.” – Interviewee 3

“I would say the best games that I played, was when I had the technique and I also had really good preparation and everything else.” – Interviewee 3

“But I also had insane games without doing anything, like any specific techniques.” – Interviewee 3

Overall, preparation, encompassing psychological readiness and strategic foresight, remains fundamental in navigating the complexities of esports competition. As players refine their preparatory rituals, its importance in elevating performance persists within professional gaming culture.

8.4.7 Goal-setting

The interviews provided valuable insights into the role of goal-setting as a crucial mental technique in esports, reflecting varied approaches and perspectives among participants.

Interviewee 1 highlighted the importance of long-term goals, viewing tournaments as steppingstones toward larger objectives. They emphasized the value of setting clear, measurable goals to track progress and direction over time, underlining the strategic importance of goal-setting in fostering growth and development

“I’m a big advocate of looking at the long-term, what is there, how do you progress, how do you grow for something that’s coming way later, like way later, and the tournaments are just like steppingstones.” – Interviewee 1

“You understand what direction we are going into. What we are getting better at, it is much more traceable or measurable. You could be saying at the beginning of the month that were going to get better at this and then you can see at the end of the month that this what we said and this is where we’re at.” – Interviewee 1

In contrast, Interviewee 3 discussed the use of short-term goals, employing tangible reminders such as stickers to maintain focus and accountability during gameplay. This approach exemplified the practical application of goal-setting techniques to enhance performance on a game-to-game basis.

“I remember using stickers, for short term goals, or like goals, objectives, or duties I had to do in game. I absolutely had to do this every game, so just a sticker on my monitor or somewhere so I could see it.” – Interviewee 3

Participants underscored the significance of balance and adaptability in goal-setting, acknowledging the evolving circumstances of esports competition and the need for nuanced approaches to maximize player performance.

“Trying to avoid this mindset of thinking too much about goals or like specific goals, like a result-oriented way of seeing the season and the tournaments. Sure, we need to have some goals, but it's maybe more in the background, and then we have different team values and different team methods.” – Interviewee 5

“You can make as many plans as you want, but you probably need to adjust them at some point.” – Interviewee 5

“How I do it, is that if I have a game that really matters, so an official game. I'm kind of every time setting up a couple of personal goals in the game as well. I'm not talking stats wise, but for example I try to keep the process alive all the time.” – Interviewee 6

Overall, the interviews underscored the multifaceted nature of goal-setting in esports, encompassing long-term aspirations, short-term objectives, and adaptive strategies. Participants recognized goal-setting as a vital tool for fostering growth, maintaining focus, and navigating the dynamic challenges of competitive gaming, highlighting its essential role in the mental preparation and success of esports athletes.

8.4.8 Self-reflection

Self-reflection emerged as a prominent theme across the interviews, highlighting its critical role in the mental development of esports players. Participants acknowledged the importance of introspection in shaping their perceptions of themselves as players and their overall gaming performance.

“We had a sport psychologist who helped us as much as we wanted to be helped. With how you see and think of yourself as a player, so basically self-reflection, which can often be forgotten.” – Interviewee 1

“I think it’s more like knowing yourself in the game, I don’t think most player do this, but I think it’s useful.” – Interviewee 3

“Having time to understand yourself, and how you feel mentally about certain things, I would say those were the things I learned the most from, and I think it’s very beneficial for teams.” – Interviewee 1

Moreover, Interviewee 1 expressed a desire for structured guidance in self-improvement, indicating that while individual efforts in self-reflection are commendable, external support and systematic approaches can further enhance player development.

“I have kind of been doing it by myself, and yes, it’s interesting to later realize that more guidance would have been good. Like a system where actually people are setting up these tasks for people to get better or to help them understand their strengths and weaknesses.” – Interviewee 1

However, challenges were acknowledged, particularly regarding the diverse backgrounds and experiences of players.

“I think it’s also very hard for the person who is helping the players, because the players backgrounds are so different, and they come from different cultures and ages. I think helping develop some skills, especially for the person to understand himself, I think this is where it starts, I think its hugely beneficial.” – Interviewee 1

The interviews shed light on the significance of self-reflection as a mental technique in esports. Participants recognized its role in shaping perceptions of oneself as a player, understanding strengths and weaknesses, and enhancing overall performance. While challenges exist, particularly in catering to diverse player backgrounds, the consensus remained on the importance of fostering self-awareness as a fundamental skill. These insights underscore the potential for integrating structured self-reflection practices into esports training regimens to optimize player development and team dynamics.

9 DISCUSSION

This chapter delves into the findings from our qualitative study, focusing on the psychological attributes and mental techniques crucial for esports performance. We have organized these findings into three main categories: team dynamics, psychological attributes, and mental techniques. This structure allows us to explore the complex interconnections among these elements and their collective impact on performance in esports. Additionally, this discussion aims to integrate these findings with existing literature, exploring their broader implications within the realm of esports psychology. Notably, the most significant sub-themes that emerged in relation to our research questions revolve around key psychological attributes, particularly confidence and awareness, and essential mental techniques, such as self-regulation and imagery.

Team dynamics. The study identified 5 categories in team dynamics that are crucial for performance in esports. Out of these, 3 were deemed sufficiently significant to merit detailed presentation in the results.

Team dynamics is not directly a psychological factor nor a mental technique, but it is strongly related to both. The study participants emphasized the importance of team dynamics during the interviews, which is why we wanted to include it as part of the study. Team dynamics was seen by the participants as an essential factor for the functioning of high-level teams. Team cohesion and team atmosphere are interconnected, and both have a significant impact on skill development (Alfermann et al., 2005). The interviews illuminated the importance of player roles within the team dynamic, underscoring the impact of role clarity and mutual trust among team members on overall success. The results also revealed that by understanding and embracing individual strengths and responsibilities, teams can foster trust, cohesion, and adaptability, thereby optimizing their collective performance and achieving success. Fostering clear understanding of individual roles within a team is important for minimizing uncertainty, negativity, and overload (Fletcher & Arnold, 2011; Fletcher et al., 2011). In addition, the results demonstrated, that in terms of belongingness, commitment to achieving shared team goals and a sense of belonging to a group are essential factors for long-term satisfaction and success in team endeavors. According to Tiikkaja (2014), it is important for athletes to feel heard, acknowledged as individuals, and to perceive that their coach cares for them (p. 125).

The interviews underscored the crucial role of communication skills in esports. Participants emphasized the importance of honesty and constructive criticism, cautioning against excessive caution in providing feedback, as these elements are key drivers of personal and team growth. In Bonilla et al.'s study (2022), esports athletes emphasized the importance of communication skills in esports. As highlighted by Gordon (2006), emotionally charged messages can often be ambiguous, leading to misunderstandings. Moreover, positive feedback is more likely to boost intrinsic motivation if it is perceived as honest, attributes success to effort or strategy rather than just skills, emphasizes self-directed development and learning, and sets clear, precise, and reasonable standards (Henderlong & Lepper, 2002).

Furthermore, the study revealed that efficient communication not only fosters teamwork but also improves strategic coordination, minimizes misunderstandings, and ultimately contributes to better performance and success in competitive gaming environments. As esports continues to evolve, mastering communication skills and dynamics remains a critical focus for both teams and individual players.

Participants stressed the importance of cultivating mutual understanding and collaboration while working with teammates, acknowledging that successful teamwork requires accommodating diverse perspectives. Furthermore, participants highlighted the significance of fostering open and supportive team cultures, emphasizing that strong relationships contribute to trust and cohesion. This aligns with research showing that supportive team environments improve performance and well-being. Creating team spirit strengthened internal relationships within the group by establishing common goals and encouraging individuals to act in accordance with those goals (Bloom et al., 2003). The findings also emphasized the importance of relationship and communication between coaches and sports psychologists to optimize coaching strategies and support player development effectively. This underscores the interconnectedness within the esports organizations' leadership, highlighting the need for cohesive teamwork among coaches, managers, and other key decision-makers. Effective interaction requires effort from both players and coaches (Kaski, 2006).

Psychological attributes. The study identified 14 psychological attributes pivotal to performance within esports. Among these, 8 were deemed significant enough to warrant detailed presentation in the results. Ranked ordinally (N) from highest to lowest, these attributes

were: awareness, confidence, trust, decision-making, calmness, social and emotional intelligence, focus, and adaptability.

The prominence of awareness and confidence in the findings, as significant psychological attributes necessary for high performance in esports, aligns well with findings from traditional sport psychology. In these traditional contexts, confidence, self-efficacy, and both self and situational awareness have been linked to athletic success (Bernier et al., 2009; Feltz, 1988; Jarvis, 2006). Both awareness and confidence have been shown to enhance athletes' beliefs in their own abilities and skills, resulting in improved performance outcomes and an increased likelihood of achieving flow-like states. The similarities between these findings and those of traditional sports underscore the universality of awareness and confidence as psychological attributes in sport performance, whether in traditional sports or esports.

The inclusion of social and emotional intelligence among the prominent psychological attributes identified in this study suggests a distinctive psychological landscape inherent to esports. This landscape emphasizes the critical roles of social dynamics, interpersonal skills, and self-regulation. Individuals proficient in emotional intelligence, who understand their own emotions and value interaction and relationships, are adept at recognizing the emotions of others, facilitating better team dynamics (Hathfield et al., 1993). Hence, emotional intelligence and regulation are indispensable for athletes whose performance is interdependent with that of their team members. Social and emotional intelligence have also been strongly associated with athletic performance, especially in team sports (Birwatkar, 2014; Singh, 2015), suggesting that the psychological domain of esports closely resembles that of traditional team sports, where communication and teamwork are paramount psychological factors.

The prominence of confidence, decision-making, and focus as key psychological attributes and skills underlying esports performance aligns with previous research in the field of esports performance psychology. Attributes such as confidence, decision-making, and focus have all been associated with improved performance outcomes in esports, according to prior studies (Himmelstein, 2017; Pedraza-Ramirez, 2020; Poulus, 2021). This underscores the significance of these attributes in enhancing esports performance and highlights the importance of techniques and methods designed to develop these psychological traits. Such efforts might be crucial for boosting performance outcomes for both individual players and teams.

Another fascinating aspect of the findings is the way in which the results correlate and interconnect with each other. For example, self-regulation, which emerged as the most prominent mental technique utilized by the participants, appears to be closely linked with the attributes of awareness, and social and emotional intelligence, attributes that also stood out as particularly significant in the findings. This connection is evident in the results pertaining to the attribute of awareness (refer to section 8.3.1), where participants emphasized the importance of emotional self-awareness beyond mere gameplay. They highlighted how internal states, such as stress and exhaustion, impact performance and the overall experience. By being attuned to these factors, players can proactively manage stressors and optimize their performance, thereby embodying the essence of what self-regulation entails. This suggests that the mental techniques adopted by participants may target the necessary psychological attributes underlying performance, whether unconsciously or deliberately. Such insights could be pivotal in developing targeted mental training practices for esports athletes.

Regarding the ranking of the psychological attributes, it is worthwhile to speculate why awareness, confidence, and trust emerged as the most prominent factors. Trust, particularly in leaders and within the team, has been shown to enhance performance outcomes in sports teams (Dirks, 2000; Lehtonen et al., 2021). Given esports' inherent social nature and strong emphasis on teamwork, it can be speculated that trust within the team would emerge as a particularly important attribute. Similarly, awareness and confidence have been linked to improved performance outcomes and highlighted as crucial attributes in both traditional sports (Bernier et al., 2009; Feltz, 1988; Jarvis, 2006) and esports. (Himmelstein et al., 2017; Pedraza-Ramirez, 2020; Poulus, 2021) This aligns with findings from this study's sections on awareness and confidence (refer to sections 8.3.1 and 8.3.2), where participants indicated that enhanced self-awareness serves a fundamental role, allowing players to define roles, improve performance, and navigate gameplay complexities. In-game awareness was shown to facilitate strategic decisions and adaptability for competitive success. Furthermore, self-confidence was consistently highlighted as a cornerstone of success, with participants also emphasizing its fundamental role, suggesting that self-confidence is the foundation upon which many other skills and attributes are built. Given these insights, it can easily be understood why awareness and confidence, along with trust, stood out as the most prominent psychological factors in regard to esports performance.

Mental techniques. The study identified 11 mental techniques utilized by participants, considered effective in bolstering their performance. Of these, 8 were deemed significant enough to warrant further detailed explanation. These are as follows, ranked ordinally from highest to lowest in terms of significance: self-regulation, imagery, breathwork, physical exercise and nutrition, rest, preparation, goal-setting, and self-reflection.

The mental techniques identified in the findings share significant overlap with those found effective in the sport science and sport psychology literature. For instance, self-regulation, which emerged as the most prominent technique, has long been associated with enhanced athletic performances in both individual and team sports contexts (Kwamanakweenda et al., 2022; Robazza et al., 2023). Additionally, imagery, another prominent technique identified in the study, is a well-known, extensively researched, and commonly used method to enhance performance within traditional sports environments. Imagery has been found to improve athletic performance in various aspects, including reducing self-criticism (Korim et al., 2023), bolstering confidence and focus, as well as enhancing motor functions (Yalçın et al., 2022). The third most prominent mental technique that emerged from the findings was breathwork. This technique also has significant evidence in the literature supporting its effectiveness in enhancing athletic performance by reducing stress and improving focus (Migliaccio et al., 2023).

Another significant observation from the study was the importance placed on physical exercise and nutrition by the participants, marking them as pivotal techniques. While in traditional sports, these elements are integral parts of daily routines and practices, their role in esports takes on a somewhat different nuance. In the esports arena, physical exercise and nutrition are not primarily seen as direct means to enhance athletic performance. Instead, they are valued for their substantial indirect benefits, particularly in boosting mental well-being and capabilities. The participants underscored the importance of maintaining a healthy body and mind as essential for sustaining peak performance levels and securing long-term success in the competitive world of esports. Despite not being traditionally categorized as mental techniques, within this specific context, physical exercise and nutrition can indeed be recognized as such. This perspective is bolstered by literature, which links physical health and nutrition to improved confidence, enhanced energy levels, and better brain function (Mavric et al., 2014; Naureen et al., 2022).

The emphasis on self-regulation and imagery as the most prominent techniques utilized by the participants of this study, align well with existing literature on esports. The practice of self-regulation, for instance, has been demonstrated to have a positive correlation with in-game rankings in esports (Trotter et al., 2021). Similarly, the use of imagery has been shown to enhance esports performance by reducing reaction times and improving decision-making skills (Gregg, 2023). These parallels suggest that the techniques identified in this study are supported by prior research, underscoring their effectiveness in enhancing performance within the esports domain. This connection not only lends validation to the findings of this study but also underscores the critical role of these mental techniques in the competitive toolkit of esports athletes.

The mental techniques identified in this study are not isolated strategies but are intertwined with previously discussed psychological attributes and team dynamics. For instance, goal-setting, which emerged as a significant technique, is linked with team cohesion, the most notable aspect of team dynamics. This relationship is evident (refer to section 8.2.1) where participants highlighted the importance of working towards shared team goals as a means to enhance team cohesion. Similarly, the technique of breathwork and the psychological attribute of calmness (refer to section 8.4.3) demonstrate another connection. Participants rated breathwork highly, crediting its effectiveness to its capacity to promote calmness. Such interconnectedness indicates that the impact of mental techniques is significantly bolstered by their role in cultivating key attributes essential for success in esports.

Speculating on the prominence of self-regulation, imagery, and breathwork among participants may reflect the cognitively demanding and stressful nature of esports (Poulus, 2021; Valls-Serrano et al., 2022). Self-regulation and breathwork could be crucial for stress management and self-calming amidst competition. Imagery's significance might arise from its role in fostering mental preparation and adaptability, essential in the fast-paced, dynamic esports environment. Support for these speculations comes from participants who highlighted the importance of managing energy levels to mitigate negative impacts on gameplay. Additionally, they noted the benefit of visualizing challenging scenarios in advance, which aids in preparation and the adaptation of gameplay during high-pressure matches (refer to sections 8.4.1 and 8.4.2).

Interconnectedness. As previously highlighted, the findings of this study exhibit a significant degree of interrelation. Among the three main categories, team dynamics, psychological

attributes, and mental techniques, considerable overlap and interconnectedness were observed, forming a complex web of interrelated results. This phenomenon is not uncommon in the fluid field of performance psychology, where distinct elements frequently merge. Consequently, this blending of elements presented challenges during the data analysis phase, particularly in categorizing and segregating the findings into their respective categories.

To illustrate the dynamic interplay among these findings, selected excerpts from participant responses will showcase how the most prominent categories interact. For instance, the interplay between decision-making and confidence was clearly shown by the participants recognizing that excessive self-confidence can lead to complacency and compromised decision-making, as well as healthy confidence enabling players to make split-second judgments without hesitation, thereby ensuring optimal performance. (refer to section 8.3.4 and 8.3.2)

Another notable interaction was observed between the categories of awareness, self-regulation, and team cohesion, highlighting the interconnectedness across all three main classes. This interplay is exemplified by participants' recognition that self-awareness serves as the foundation for players to define their individual roles within the team structure (refer to section 8.3.1). Moreover, it was emphasized that clear individual roles are crucial for fostering team cohesion and, by extension, overall success (refer to section 8.2.1). Additionally, the findings highlighted the significant role of emotional self-awareness in the process of self-regulation, which was instrumental in enhancing performance (refer to section 8.4.1). These examples effectively demonstrate the complex web of interconnected findings, illustrating the mutual influence these categories have on one another.

Finally, we found it worthwhile to delve into the concept of flow state, a recurrent theme in the findings that did not neatly fit into any of the three main classes: team dynamics, psychological attributes, and mental techniques. Participants discussed the nature of flow, strategies for its achievement, and its primary precursors, many of which aligned with the prominent categories identified in our study. To illustrate the connection between participants' experiences with flow state and the most notable findings, we present these selected excerpts. Notably, participants identified self-awareness as a critical factor in achieving the coveted flow state (refer to section 8.3.1). Confidence, calmness, and focus were also highlighted as attributes intimately linked to flow, emphasizing how deep focus and calmness, alongside the effortless performance fostered by confidence, are integral to this state (refer to sections 8.3.2, 8.3.5, and 8.3.7).

This exploration underscores the complex interplay among our findings, illustrating how various elements interact within the esports context. It was particularly fascinating to observe the connections, and occasional disconnections, between psychological attributes and mental techniques. For example, while confidence emerged as a dominant psychological attribute, direct mentions of it within the context of mental techniques were less frequent. To aid the reader in visualizing these relationships, a chart detailing the interconnectedness among the most significant categories is provided below, offering a clearer understanding of the multifaceted nature of performance psychology in esports. (Figure 6.)

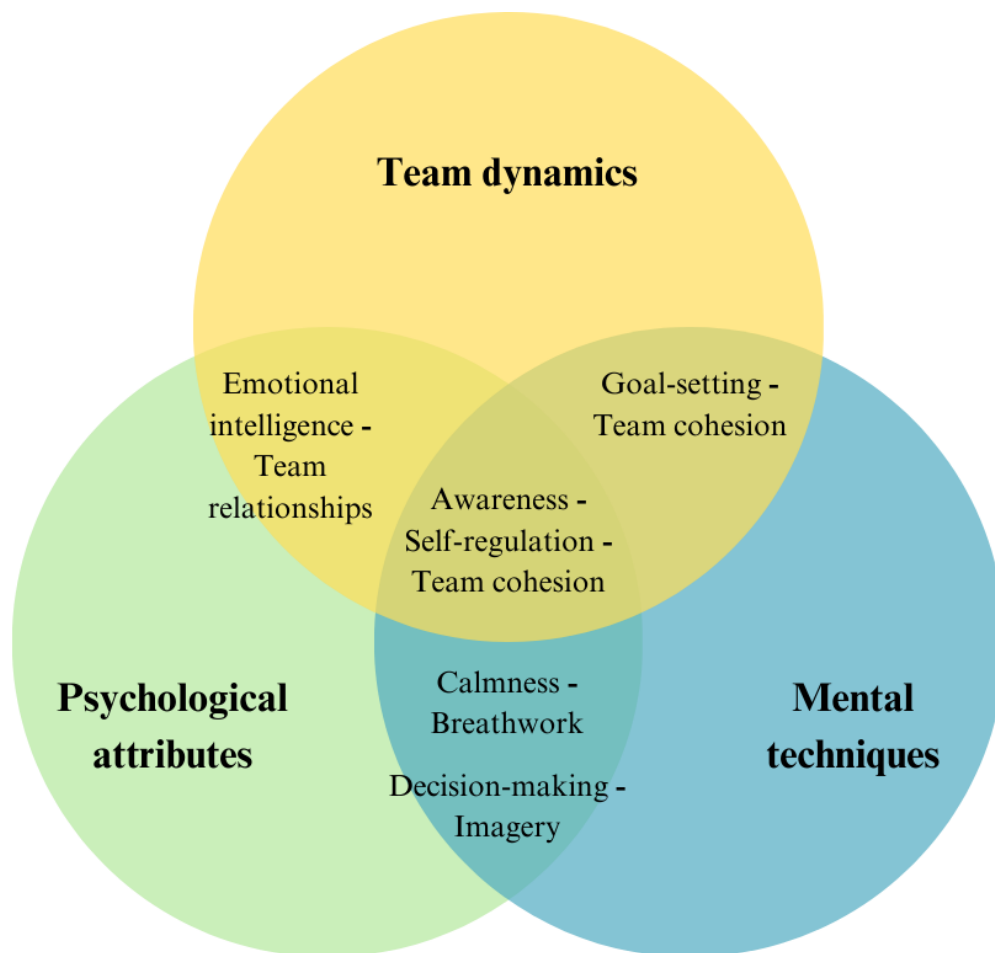


Figure 6. A Venn diagram displaying the interconnectedness of main classes and their respective lower classes.

9.1 Research limitations and future research

This chapter acknowledges the limitations encountered in our research, which focused on the psychological attributes and mental techniques utilized by esports players and coaches. Despite a well-structured methodology and a clear research objective, several constraints could have influenced the outcomes of our study.

The initial plan to recruit 6–8 participants was slightly compromised due to last-minute cancellations, resulting in a final tally of six interviewees. While this number fell at the lower end of our target range, it unexpectedly benefited the study by allowing a more in-depth analysis of each interview, ensuring no significant insights were missed. This smaller sample size, though not ideal, provided a concentrated dataset that facilitated a thorough exploration of the participants' experiences and perspectives.

The study was also challenged by the nature of esports as a field of research. The rapid expansion of esports in recent years has outpaced the development of a robust body of academic literature, presenting a scenario where comprehensive literature is still accumulating. This scarcity of prior research meant navigating an environment where predefined benchmarks and comparative analyses were limited. Our interpretations of the esports landscape, influenced by personal experiences and observations, might have subtly shaped the research findings, despite our efforts to remain impartial and objective throughout the study.

A noteworthy observation from our data was the perceived significance of the psychological attributes and mental techniques identified. Each emerged as a critical element in the context of esports performance, suggesting potential landscapes for future studies to delve into these aspects more deeply, possibly focusing on specific characteristics or techniques to unravel their impacts more precisely.

We identified several specific limitations that warrant mention:

- **Sample Size:** Our study's constrained sample size might not fully capture the diversity of experiences and opinions within the esports community.
- **Self-Reported Data:** Dependence on self-reported information could introduce biases, such as participants tailoring their responses to match perceived researcher expectations.

- **Field of Study Bias:** Our backgrounds in sports psychology might predispose us to emphasize certain psychological constructs over others, potentially sidelining esports-specific phenomena.
- **Emerging Field:** The nascent state of esports psychology means existing literature may not encompass all pertinent dimensions of this field.
- **Potential Response Bias:** There exists the possibility that participants, wishing to portray themselves favorably, might skew their descriptions of psychological attributes and mental techniques.

Recognizing these limitations is crucial not only for interpreting our findings with the necessary caution but also for guiding future research endeavors. Addressing these identified gaps promises to enrich our collective understanding of esports psychology, paving the way for more nuanced and comprehensive explorations in this dynamic and evolving domain.

For future research, this thesis opens several landscapes for exploration. The nuanced interplay between psychological attributes and mental techniques warrants further investigation, particularly in understanding how specific mental techniques can enhance desired psychological attributes. Additionally, the intricacies of team dynamics deserve close examination for their impact on both individual athletes and team success as a whole. Investigating the role of specific mental techniques in bolstering team dynamics and individual psychological attributes, thereby contributing to improved overall team cohesion, also presents a valuable research opportunity.

9.2 Conclusion

In this thesis, we delved into the psychological attributes and mental techniques employed by esports players and coaches. Our investigation revealed three main classes: team dynamics, psychological attributes, and mental techniques. These categories, along with the interactions between them, shed light on the complex psychological foundation essential for elite performance in competitive esports. This exploration has provided valuable insights into how these intertwined elements contribute to positive performance outcomes in professional esports. Throughout our discussion, we have emphasized the interconnectedness that weaves together

team dynamics, psychological attributes, and mental techniques, creating a cohesive framework essential for esports performance psychology.

Our findings highlight the crucial role of psychological attributes in regard to performance in esports, namely, awareness, confidence, focus, and social & emotional intelligence, which serve as a foundation upon which players build their mental prowess and fortitude. Mental techniques such as self-regulation, imagery, breathwork, and goal-setting were identified as instrumental tools employed by players to enhance psychological performance and well-being. These attributes and techniques were found to be deeply interconnected; the analysis demonstrated how players frequently utilized mental techniques to strengthen the psychological attributes identified in our research.

Furthermore, the study highlighted the significance of team dynamics, revealing how team cohesion, communication skills, and interpersonal relationships serve as multifaceted and essential components for success. These dynamics foster a supportive environment that enables effective decision-making, enhances teamwork, facilitates strategic coordination, and minimizes misunderstandings. Serving as the foundation for effective communication, trust, and collaboration, these elements collectively contribute to improved performance and cohesion. As esports continues to evolve, emphasizing these aspects remains crucial for both teams and individual players to excel in the competitive landscape.

Additionally, there were categories in the findings that were not considered significant enough, or did not fit neatly into any main category, to be included in the findings, yet they still offer valuable insights. Notably, the concept of 'flow-state' frequently emerged as a crucial aspect of esports performance, accompanied by its precursors: awareness, confidence, calmness, and focus. These attributes were prominently featured in our findings, indicating a compelling landscape for future research to further explore the flow state and its precursors within esports.

This thesis highlights the importance of a holistic approach to performance enhancement in esports, one that considers the psychological attributes of players, the dynamics of teams, and the strategic application of mental techniques. For practitioners, including coaches and sports psychologists, our findings suggest a multilayered strategy for fostering excellence in esports, one that balances the development of individual psychological strengths with the cultivation of positive team dynamics and the strategic use of mental techniques.

In summary, this thesis explored the psychological attributes and mental techniques in esports, revealing the significance of team dynamics, psychological attributes, and mental techniques for high-performance. Key findings include the importance of psychological attributes like awareness and confidence, and mental techniques such as self-regulation and imagery. Team dynamics, emphasizing cohesion and communication, were vital for success. The concept of 'flow-state' emerged as a potential area for further study. This research underscores a holistic approach to esports performance, integrating individual skills with team dynamics for optimal outcomes and suggesting landscaped for future research in this evolving field.

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APPENDICES

Appendix 1. Questionnaire for players

Purpose of the Interview

The purpose of this interview is to explore the psychological attributes and mental techniques that esports players and coaches find crucial for optimal game performance. Your insights will contribute to a better understanding of the mental aspects of competitive gaming.

Background Information

1. Name:
2. Age:
3. How long have you been playing video games?
4. How long have you been semi-professional/professional?
5. When did you quit playing professionally (if applicable)?
6. Can you briefly describe your background in other sports?

Psychological Attributes in Esports

7. Reflecting on your peak performance, what psychological attributes and states did you recognize in yourself?
 - **Game-specific performance (specific game or series):**
 - What emotional states do you recognize?
 - What psychological attributes do you recognize?
 - **Helpful attributes and states:** Awareness, Adaptability, Calmness, Decisiveness, Confidence, Creativity, Decision-making, Flow, Focus, Self-regulation, Leadership.
 - **Environment-specific performance (over an extended period):**
 - What emotional state(s) did you experience?
 - What routines and techniques helped facilitate this?
 - **Team-specific performance:**
 - What factors do you recognize in your most successful team?
 - **Helpful questions:** Group cohesion, trust, communication skills/style, team roles, shared leadership, interaction, interaction skills.

8. What are some of the challenges to achieving optimal performance?

Mental Techniques Used in Esports

9. What mental techniques have you used to improve game performance, if any?

- **Helpful techniques:** Meditation, visualization, relaxation techniques, breathing techniques, writing.
- Personal techniques?
- Which of these did you find useful, if any?

10. During your peak performance, what coping techniques did you use during or between games, and what mental routines did you use over an extended period, if any?

Ethical Considerations

- Participation is voluntary, and you can withdraw at any time without any penalty.
- Your responses will be kept confidential and used only for research purposes.
- Do you consent to participate in this interview?

Appendix 2. Questionnaire for coaches

Purpose of the Interview

The purpose of this interview is to explore the psychological attributes and mental techniques that esports players and coaches find crucial for optimal game performance. Your insights will contribute to a better understanding of the mental aspects of competitive gaming.

Background Information

1. Name:
2. Age:
3. How long have you been playing/coaching video games?
4. How long have you been semi-professional/professional?
5. When did you quit playing professionally (if applicable)?
6. Can you briefly describe your background in other sports?

Psychological Attributes in Esports

7. Reflecting on your team's peak performance, what psychological attributes and states did you recognize in your players? And same for yourself as a coach?
 - **Game-specific performance (specific game or series):**
 - What emotional states do you recognize?
 - What psychological attributes do you recognize?
 - **Helpful attributes and states:** Awareness, Adaptability, Calmness, Decisiveness, Confidence, Creativity, Decision-making, Flow, Focus, Self-regulation, Leadership.
 - **Environment-specific performance (over an extended period):**
 - What emotional state(s) did you experience?
 - What routines and techniques helped facilitate this?
 - **Team-specific performance:**
 - What factors do you recognize in your most successful team?
 - **Helpful questions:** Group cohesion, trust, communication skills/style, team roles, shared leadership, interaction and interaction skills.
8. What are some of the challenges to achieving optimal performance?

Mental Techniques Used in Esports

9. What mental techniques have you used to improve your team's game performance, if any? What mental techniques has the players in your team uti? Have you noticed them using any?
 - **Helpful techniques:** Meditation, visualization, relaxation techniques, breathing techniques, writing.
 - Personal techniques?
 - Which of these did you find useful, if any?
10. During your peak performance, what coping techniques did you use during or between games, and what mental routines did you use over an extended period, if any?

Ethical Considerations

- Participation is voluntary, and you can withdraw at any time without any penalty.
- Your responses will be kept confidential and used only for research purposes.
- Do you consent to participate in this interview?