

HUMAN CAPITAL MANAGEMENT TO ENHANCE COMPETITIVE SKILL OF UNIVERSITY ESPORTS ATHLETES

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ABSTRACT

Esports, or electronic sports, has rapidly gained global recognition and has been incorporated into major multi-sport events, reflecting a transformation in the sports landscape. Despite its growth, the Thai esports industry faces challenges related to social acceptance and concerns regarding youth gaming behavior. This study investigates the role of human capital management (HCM) in developing the competitive skills of university-level esports athletes, particularly in Multiplayer Online Battle Arena (MOBA) games. Using a literature-based approach, the study examines HCM processes including planning, job analysis, recruitment and retention, selection, training and development, performance management, compensation, and pay-for-performance systems. These processes are linked to skill development frameworks, including Deliberate Practice, Mental Models, Flow State, Macro/ Micromanagement, and Psychological Resilience. Findings indicate that systematic HCM practices enhance athletes' technical proficiency, strategic understanding, mental readiness, and adaptability. The integration of structured training, psychological support, and strategic resource allocation creates optimal learning environments, ultimately improving individual and team performance. The study highlights that effective HCM and strategic support are directly associated with esports skill development, providing actionable insights for universities and competitive teams aiming to maximize athlete potential.

Keywords: Esports, Human Capital Management, Skill Development, University Athletes, MOBA, Deliberate Practice, Flow State, Psychological Resilience

INTRODUCTION

Esports, or electronic sports, have rapidly gained international recognition and have been included in major multi-sport events, such as the Asian Games, with consideration for inclusion in the

Olympic Games. This trend reflects a transformation in the global sports landscape (Kasemsan, 2025; Kiranat, 2025a) [1],[2]. Esports competitions encompass both team-based and individual formats, featuring popular games such as League of Legends, Dota 2, and Arena of Valour (RoV) (Chollada, 2021; Kasemsan, 2025) [3].

In Thailand, the Sports Authority of Thailand has officially recognised esports as a sport, making it eligible to establish associations, which led to the creation of the Thailand Esports Federation (TESF) in 2017 (Kiranat, 2025a; Prateep, 2025) [4]. This institutionalization has facilitated the formal development of the esports industry, creating professional opportunities and significant economic value (Apicha, 2025; Chaipayoom, 2025) [5],[6]. Despite its growth potential, the Thai esports industry faces challenges and concerns regarding social acceptance and gaming addiction among youth (Chollada, 2021; Phubet, 2025; Udom, 2025) [7],[8]. These issues underscore the importance of human resource development and competitive skill enhancement for university-level esports athletes (Werner, Schuler, & Jackson, 2012; Kiranat, 2025b) [9],[10].

This study employs a literature-based approach, reviewing relevant scholarly articles, theses, and reports to synthesize insights on human capital management strategies and their impact on esports skill development (Werner, Schuler, & Jackson, 2012; Kasemsan, 2025). The study aims to examine human capital management strategies to develop the competitive potential of university esports students, particularly in Multiplayer Online Battle Arena (MOBA) games (Kiranat, 2025b). The study covers athlete selection, continuous training and development, and the promotion of technical skills, analytical thinking, and teamwork (Chaipayoom, 2025; Kasemsan, 2025). The results are expected to provide insights into systematic human capital management approaches that enhance the strategic capabilities of esports athletes (Kiranat, 2025a; Apicha, 2025).

OBJECTIVE

1. To review the role of Human Capital Management (HCM) in developing the competitive skills of university-level esports athletes, particularly in MOBA games.
2. To identify strategies and approaches for systematic human capital and training management that enhance esports athletes' technical skills, strategic thinking, and psychological resilience.

Literature Review

Concepts and Theories of Human Capital Management

Human capital management (HCM) involves processes related to personnel, including workforce planning, recruitment and selection, job management, skill development, employee retention, performance evaluation, and exit management. Effective HCM encompasses all aspects of personnel management, as organizational success depends on the capabilities of its workforce, the retention of high-potential employees, and the maximization of skill development (Werner, Schuler, & Jackson, 2012). Key HCM processes include:

1. Human Capital Planning – Aligning workforce planning with organizational strategy to adapt and develop personnel to meet organizational goals.
2. Job Analysis – Understanding job characteristics and required competencies to maximize employee potential and support long-term organizational success.

3. Recruitment and Retention – Providing opportunities for talented personnel to join the organization while developing retention strategies to reduce turnover.

4. Selection – Choosing employees with appropriate skills, willingness to learn, and adaptability to organizational changes.

5. Training and Development – Enhancing employees' skills, knowledge, and attitudes continuously to support new tasks and career progression.

6. Performance Management – Evaluating performance and providing feedback for decision-making regarding rewards and motivation.

7. Compensation – Offering appropriate financial rewards and benefits to motivate employees and support goal achievement.

8. Pay for Performance – Designing flexible reward packages based on achievements to support strategic objectives.

In summary, HCM is a comprehensive system covering pre-employment planning, recruitment and selection, orientation, training and development, motivation, performance evaluation, compensation, health and safety, labor relations, HR research, promotion, and exit management. Ninaroon, P. el. (2024).

Concepts and Theories of Esports Skill Development

Esports skill development can be understood through five key theoretical concepts:

1. Deliberate Practice – Structured, goal-oriented training focused on mechanical skills, game sense, and decision-making, with immediate feedback to continuously enhance performance (Kasemsan, 2025).

2. Mental Models – Developing in-depth understanding of game mechanics, decision-making, and team interactions to predict outcomes and make rapid, informed choices in complex situations (Kiranat, 2025b).

3. Flow State – Achieving full concentration and immersion in the game, maximizing potential and accuracy under challenges that match the athlete's skill level (Chollada, 2021).

4. Macro/Micromanagement – Macro management involves long-term strategy planning and resource management, while micromanagement focuses on real-time decision-making and individual control. Developing both ensures comprehensive skill coverage and strategic balance (Chaiyapoom, 2025).

5. Psychological Resilience – The ability to cope with stress, failure, and pressure, maintain focus, recover from mistakes, and adapt to changing competitive scenarios (Kiranat, 2025b).

These five concepts operate synergistically to systematically enhance esports athletes' competitive skills (Kasemsan, 2025; Kiranat, 2025b).

Relationship Between Human Capital Management and Esports Skill Development

Human Capital Management

To effectively and continuously develop esports athletes' skills, universities and teams must integrate human capital management practices into processes such as planning, selection, training, motivation, and performance evaluation (Kasemsan, 2025; Kiranat, 2025a). Examples include:

- 1) Human Capital Planning – Aligning planning with team and university objectives ensures systematic skill development, training schedules, and preparation for major competitions, enhancing learning efficiency and student success (Kiranat, 2025a).
- 2) Job Analysis – Identifying role-specific skills (e.g., hero control, strategy planning, team communication) allows targeted training and maximized athlete potential (Chollada, 2021).
- 3) Recruitment and Retention – Providing opportunities for talented players and supporting academic and extracurricular needs reduces turnover and sustains team continuity, contributing to long-term success (Prateep, 2025).
- 4) Selection – Choosing athletes suitable for specific team roles based on technical skills, teamwork, and psychological readiness ensures adaptability and continuous skill improvement (Phubes, 2025).
- 5) Training and Development – Structured programs focusing on game analysis, strategic decision-making, and mental endurance enable high-level competition readiness (Chaiyaphum, 2025).
- 6) Performance Management – Continuous performance monitoring, feedback, and data-driven evaluation guide skill improvement and future development (Kiranat, 2025a).
- 7) Compensation – Providing appropriate rewards such as funding, equipment, or scholarships motivates athletes and supports personal and team development (Kasemsan, 2025).
- 8) Pay for Performance – Rewarding athletes based on achievements (e.g., competition results, league rankings, MVP awards) fosters motivation and encourages full potential utilization (Apicha, 2025; Udom, 2025).

E-sports Skill Development

Applying the aforementioned theories to human capital management, universities and teams can allocate resources, design training schedules, and provide psychological support to systematically develop technical skills, strategic understanding, mental resilience, and adaptability. Key theoretical applications include:

- 1) Deliberate Practice – Structured training supported by coaches and resources improves mechanical skills, game sense, and decision-making (Kasemsan, 2025).
- 2) Mental Models – Deep understanding of game mechanics and strategies is enhanced through resources such as guides, video analysis, and strategic consulting (Kiranat, 2025b).
- 3) Flow State – Appropriate environment and psychological support facilitate immersion, focus, and reduced stress during competition (Chollada, 2021).
- 4) Macro/Micro Management – Balancing strategic planning and real-time decision-making strengthens team performance and technical execution (Chaiyaphum, 2025).

5) Psychological Resilience – Coaches and simulated scenarios enhance athletes' ability to handle pressure, recover from mistakes, and maintain performance under competition stress (Kiranat, 2025b).

METHODOLOGY

Population

The population used in this study comprised undergraduate students at Suan Sunandha Rajabhat University across all faculties who have experience or direct involvement in e-sports activities. This includes players who have previously participated in competitions, as well as those who are interested in and follow the e-sports industry, particularly the MOBA genre.

Instrument Development

The research instrument used in this study was a questionnaire, which was structured into four sections:

Section 1: General information about the respondents, including gender, age, marital status, educational level, average monthly income, sources of income, and the type of MOBA games they play. The questions consisted of both open-ended and closed-ended items.

Section 2: Questions related to human resource management for university-level e-sports athletes. These items were measured using a five-point Likert scale.

Section 3: Questions related to the development of competitive skills for university-level e-sports athletes. These items were also measured using a five-point Likert scale.

Section 4: Additional comments and suggestions, presented as open-ended questions.

RESULTS

The findings of this study indicate that human capital management is a critical determinant in enhancing the competitive potential of university esports athletes. Effective management practices including systematic planning, structured athlete selection, training program design, continuous performance evaluation, and well-defined reward mechanisms contribute directly to the sustained development and improvement of athletes' competencies. These functions ensure that skill enhancement does not occur incidentally but follows a continuous, data-driven, and performance-oriented progression (Werner et al., 2012; Kasemsan, 2025; Kiranat, 2025a).

The study further demonstrates that the development of esports athletes relies heavily on an integrated framework of Deliberate Practice, Mental Models, Flow Theory, Macro and Micromanagement, and Psychological Resilience. These theoretical foundations support the creation of learning environments that strengthen athletes' decision-making, cognitive processing, and in-game adaptability. Deliberate Practice promotes intentional and high-quality training, while Mental Models enhance pattern recognition and strategic anticipation. Flow State fosters deep concentration during competition, and Psychological Resilience equips athletes to manage stress, uncertainty, and high-pressure competitive situations.

Moreover, the results underscore the importance of strategic resource allocation for maximizing athletic performance. Investments in expert coaching, analytical technology, performance tracking systems, and sports psychology services provide athletes with the tools necessary for advanced tactical understanding and continuous self-improvement. This combination of human capital practices and strategic resource deployment has been shown to enhance not only individual capabilities but also team coordination, adaptability, and competitive success in university-level esports (Kasemsan, 2025; Kiranat, 2025b; Chaiyapoom, 2025).

Overall, the study concludes that esports performance excellence results from coordinated human capital management, evidence-based training models, and targeted resource support. Universities that implement these approaches are more likely to cultivate athletes with superior technical skills, stronger mental fortitude, and heightened competitive readiness leading to sustainable performance outcomes in collegiate esports environments.

DISCUSSION AND CONCLUSION

This study demonstrates that human capital management plays a crucial role in enhancing the competitive potential of university esports athletes, including technical skills, strategic understanding, mental readiness, and resilience (Werner et al., 2012; Kasemsan, 2025; Kiranat, 2025a).

Planning, selection, structured training programs, performance evaluation, and reward systems are effectively applied to ensure continuous and systematic athlete development.

The integration of theories such as Deliberate Practice, Mental Models, Flow State, Macro/ Micro Management, and Psychological Resilience supports the creation of optimal learning environments, enhancing decision-making and competitive performance. Strategic resource allocation—including coaching, technology, and sports psychology—fosters higher athlete competence and adaptability to competitive challenges (Kasemsan, 2025; Kiranat, 2025b; Chaiyapoom, 2025).

The findings highlight several key insights:

- 1) Human capital planning and management are crucial factors in developing esports athletes' competitive skills, ensuring alignment between training, competition, and team/university objectives (Werner et al., 2012).
- 2) Selection and retention of high-potential athletes influence team continuity and competitive efficiency, reducing turnover and fostering team stability (Prateep, 2025; Phubet, 2025).
- 3) Application of skill development theories (Deliberate Practice, Mental Models, Flow State, Psychological Resilience) ensures structured and effective training aligned with real competitive scenarios (Kasemsan, 2025; Kiranat, 2025b).
- 4) Strategic support, including coaching, evaluation, rewards, and conducive learning environments, enhances athlete competence, adaptability, and overall team readiness (Apicha, 2025; Udom, 2025; Chaiyapoom, 2025).

In conclusion, human capital management and strategic support are directly linked to the advancement of esports skill development. Universities and teams that systematically integrate these practices can maximize their athletes' potential, ensuring both individual growth and collective success in competitive esports (Werner et al., 2012; Kasemsan, 2025; Kiranat, 2025a).

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