

COACHING EFFICACY IN THE ESPORTS ENVIRONMENT: ANALYSIS BY EDUCATION LEVEL, CLASSIFICATION, COMPETITIVE VIDEOGAME AND PHYSICAL STATUS

LA EFICACIA DE LOS ENTRENADORES EN EL ENTORNO DE LOS ESPORTS: ANÁLISIS EN BASE A SU NIVEL EDUCATIVO, CLASIFICACIÓN, VIDEOJUEGO COMPETITIVO Y ESTADO FÍSICO

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Abstract

The figure of the esports coach is reaching a fundamental relevance nowadays. Therefore, the objective of this study was to analyse the effectiveness of professional and amateur esports coaches considering their educational level, their coach classification, their competitive video game and their physical status. Sixty-two coaches (25.81 ± 3.37 years) completed the Coaching Efficacy Scale. Esports coaches have average values close to seven in all four dimensions of this scale (Motivation 6.89 ± 1.14; Strategy 7.09 ± 1.17; Technique 6.72 ± 1.22; Character 7.02 ± 1.20), which are closely related to players' performance and health. Moreover, the educational level ($p < .01$) or lifestyle ($p < .01$) are highlighted as elements that influence coaches' performance. The type of video game is important as well, since higher general values were found for Valorant coaches compared to other videogames ($p < .05$), placing great importance on the experience dimension in amateur coaches. This is the first reference values on self-efficacy in esports coaches, information of great utility for clubs and players to understand potential strengths or weaknesses of their coaches and to identify future talents.

Keywords: Esports coaches, performance, health, talent development.

Resumen

Actualmente la figura del entrenador de esports alcanza una relevancia fundamental. Por ello, el objetivo de este estudio era analizar la eficacia de los entrenadores profesionales y aficionados de esports según su nivel educativo, su clasificación como entrenadores, su videojuego competitivo y su estado físico. Sesenta y dos entrenadores (25.81 ± 3.37 años), completaron la Escala de Eficacia del Entrenador. Los entrenadores de deportes electrónicos tienen valores medios cercanos a siete en las cuatro dimensiones de esta escala (Motivación 6.89 ± 1.14; Estrategia 7.09 ± 1.17; Técnica 6.72 ± 1.22; Carácter 7.02 ± 1.20), que están estrechamente relacionadas con el rendimiento y la salud de los jugadores. Además, el nivel educativo ($p < .01$) o el estilo de vida ($p < .01$) destacan como elementos que influyen en el rendimiento de los entrenadores. El tipo de videojuego también es importante, ya que se encontraron valores generales más altos en los entrenadores de Valorant en comparación con otros videojuegos ($p < .05$), lo que otorga una gran importancia a la dimensión experiencia en los entrenadores amateur. Se trata de los primeros valores de referencia sobre autoeficacia en entrenadores de esports, información de gran utilidad para que clubes y jugadores conozcan las posibles fortalezas y debilidades de sus entrenadores e identifiquen posibles futuros talentos.

Palabras clave: Entrenadores de esports, rendimiento, salud, desarrollo de talento.



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Introduction

Esports are currently a rapidly growing economic and social phenomenon, reaching quotes comparable to traditional sports (Cranmer et al., 2021; de Las Heras et al., 2020). This accelerated growth has led to a progressive professionalization of esports clubs in all their sections (Pluss et al., 2019). The profiles of esports players are increasingly similar to those of traditional athletes, with university scholarships, their own leagues, and lucrative economic contracts (Cranmer et al., 2021; Popov, 2021). This evolution of players has also led to the development of various professional roles within the clubs, ranging from specialists in marketing or law to professionals focused on player training and health (Diffrancisco-Donoghue et al., 2019; Giakoni-Ramírez et al., 2022). More specifically, regarding the profiles associated with player performance, esports clubs now have large professional structures, including fitness coaches, psychologists, doctors, analysts, all of whom are coordinated under the guidance of the key figure in the staff, the coaches (Diffrancisco-Donoghue et al., 2019; Jenny et al., 2017; Sanz-Matesanz et al., 2023).

These professional coaches in the esports environment have grown in number and quality as the industry has evolved, leading to experts in the field who command significant sums of money associated with multimillion-dollar clubs (Cranmer et al., 2021; de Las Heras et al., 2020). This professionalization not only benefits the coaches but also carries the responsibility of training high-level players in pursuit of victory. Just like in traditional sports, the continuity of a coach in their position will depend on these victories. Therefore, the increasing professionalization of coaches goes hand in hand with the demands of their role and the need to have in-depth knowledge of both their video-game and their players (Poulus et al., 2022; Reitman et al., 2020).

This increase in the relevance of the coach's role stems not only from the pursuit of victories but rather from being responsible for the majority of the players' daily routine (Rajič & Grubić, 2018). Furthermore, the coach will be in charge of setting training hours, as well as, along with the rest of the staff, determining the hours for physical exercise, psychological counselling or support, rest, meals, among others, making them the main driver of the team's evolution (Diffrancisco-Donoghue et al., 2019; Oberg & Frank, 2011). As a consequence, their importance in clubs has grown, generating an interest from organizations in the professional development of their coaches as a means to enhance the overall team performance.

Despite this, and the current significance that professional clubs attribute to their coaches as the main responsible figures for their players (Diffrancisco-Donoghue et al., 2019), in-depth knowledge about their characteristics and particularities has been overlooked by current research.

Knowledge about coaches in traditional sports is very common, delving into the most important characteristics they must possess to achieve their players' success (Teques et al., 2019). However, in research focused on esports, the role of the coach is completely neglected, with all the attention directed towards the players (Gray et al., 2018; Rudolf et al., 2020; Sanz-Matesanz et al., 2023; Trotter et al., 2021), despite the fact that coaches are responsible for the majority of the players' behaviours (Diffrancisco-Donoghue et al., 2019; Oberg & Frank, 2011).

All that knowledge found in research focused on coaches in traditional sports bears certain similarities to the reality of esports coaches. For instance, the vast majority of esports coaches base their coaching abilities on being former players, which grants them extensive experience and knowledge about the game (Richards, 2012). However, in order to achieve excellence as a coach, skills such as leadership and the ability to transmit knowledge are necessary to make a real impact on their players (Richards, 2012; Teques et al., 2019). Delving into these skills, these authors relate a favourable emotional climate created by coaches to a greater ability to acquire knowledge and improve the performance of their players, basing their training on trust and calmness (Judge et al., 2021; Teques et al., 2019). Considering the foregoing, it is evident that experience and game knowledge are crucial, but they are not the sole factors that determine a coach's ability to carry out their profession. It will be necessary to consider other parameters that influence their efficacy as coaches (Teques et al., 2019). This efficacy will ultimately define a coach's potential to influence their players and achieve performance based on the application of their knowledge.

This self-efficacy, as a concept, has been thoroughly studied in traditional sports, primarily through the use of the Coaching Efficacy Scale (CES) (Myers et al., 2017).

The CES is a scale focused on understanding the efficacy of coaches in any discipline, which provides data regarding the coach's capability in four distinct qualities or subscales (Feltz et al., 1999). By using this scale, information can be obtained about 1) the coach's strategic development capabilities, 2) their qualities as a motivator, 3) their skill in developing players' techniques, and 4) their ability to foster character and attitude within their team (Vargas-Tonsing et al., 2003).

This information regarding the four categories is related to the levels of emotional intelligence and the climate created by coaches, something considered crucial in being a good coach (Teques et al., 2019). Similarly, higher levels on the CES are correlated with better overall coaching behavior, greater team satisfaction, and improved competitive performance (Feltz et al., 1999; Tsorbatzoudis et al., 2003). Finally, this scale has been validated not only in relation to the created climate but

also in its connection to the coach's ability to transmit knowledge and gain player acceptance, demonstrating that a high perception of the coach's own ability is linked to their actual capacity to carry out the coaching task (Judge et al., 2021; Richards, 2012).

The importance of the CES has not only been demonstrated from the coaches' perspective, but various studies have also shown that players' perception of their coach's quality coincides in 95% with the coaches' self-perception (Keathlethoetswe & Malete, 2019; Short & Short, 2004). In addition, these findings are related to an increase in levels of democracy in training and the relationship with their players, resulting in a sense of greater significance for the players, thereby enhancing their mood and performance (Judge et al., 2021).

Given the significance of the data provided by this scale and its widespread use in traditional sports, the data obtained from its application in esports could mark the beginning of an in-depth understanding of the characteristics of esports coaches. Based on this knowledge, the first profile of these coaches can be generated, identifying their strengths and weaknesses, in order to continue the evolution that esports are experiencing and provide valuable insights for clubs.

Consequently, the aim of this research was to analyse the effectiveness of professional and amateur esports coaches taking into consideration the education level, coach classification, competitive videogame and physical status. This study was created in order to generate the first representative data of this population for this critical study variable.

Materials and Methods

Design and Participants

A descriptive and cross-sectional study was conducted using a non-probabilistic convenience sampling method (Cubo-Delgado et al., 2011). The sample was selected based on convenience. The following inclusion criteria were established for coaches: a) have competitive experience exceeding 2 years or 3 competitive splits; b) actively belong to a competitive esports organization or have been a member during the minimum period set in the first criterion; c) be a coach of a video game considered an esports, belonging to a competitive league, excluding those related to recreational video games. In this study, sixty-two esports coaches participated. The mean age of the participants was 25.81 years ($SD = 3.37$).

Sample Size

Sample size calculations were performed with the software G*Power 3.1.9.4. For this purpose, a protocol of the t-test family identified with the test of difference between independent means (two groups) was used (Faul et al., 2007). The significance level was set at $\alpha = .09$. As a consequence, the sample size (power analysis) revealed that 58 participants were sufficient to obtain a power of 90%. To avoid potential dropouts or data loss due to the detection of abnormal responses or non-completion, we decided to recruit a larger number of participants. The study sample consisted of a total of 62 coaches. The study was conducted in accordance with the ethical principles of the Helsinki declaration for research involving human subjects (World Medical Association, 2013) and was approved by the institutional review board of the corresponding author's University.

Instruments

For measuring the coaches' efficacy, the scale known as the Coaching Efficacy Scale (CES) was employed (Feltz et al., 1999).

This scale consists of a total of 24 items belonging to four different subscales or dimensions: Motivation (items 1, 3, 6, 10, 12, 15 y 23), Strategy (items 2, 4, 8, 9, 11, 17 y 21), Technique (items 7, 14, 16, 18, 20 y 22); and Character Building (items 5, 13, 19 y 24). The items or questions refer to "How confident are you in your ability to..." with a 10-point response level on a Likert scale from 0 "not at all confident" to 9 "extremely confident".

The instrument has shown in various studies Cronbach's Alpha levels above .8 overall when applied to both professional and amateur coaches (Myers et al., 2005, 2008, 2017; Tsorbatzoudis et al., 2003). Specifically referring to the values for each subscale, a Chronbach's Alpha level of .94 was observed for motivational efficacy, .89 for game strategy efficacy, .87 for technical development efficacy, and .88 for character development efficacy (Feltz et al., 1999; Myers et al., 2017).

Procedure

The data collection took place through online administration of the scale. Firstly, participants were provided with an informed consent letter along with instructions for completing the questionnaire. Following the information about the response procedure of the scale, basic demographic data was collected, which included questions about age, gender, nationality, educational level, professional level, and the main esports they dedicated themselves to. Likewise, questions about their coaching experience, best competitive results, and, if they were former players, their best results during that time were also administered. This information was gathered with the aim of categorising the sample into different groups that facilitate its subsequent in-depth analysis. Completing the entire questionnaire took approximately 15 minutes.

Statistical Analysis

Descriptive data for the different variables under study are presented with their mean (M) and standard deviation (SD) values. The Kolmogorov-Smirnov test and Levene's test were used to check for data normality and variance homogeneity, respectively. Subsequently, independent t-tests were performed for the variables of educational level, type of coach, main sport, and physical activity; whereas the country was analysed using a one-factor ANOVA. For this second analysis, to explore significant differences between each of these conditions, the Bonferroni post hoc test was applied. Furthermore, ROC (Receiver Operating Characteristic) curve analysis was conducted to determine the cutoff point in the different dimensions of the Coaching Efficacy Scale questionnaire and classify the coaches based on several variables: their grouping as professionals or amateurs, the type of specific competition or videogame, and finally, their classification according to whether they engage in sports physical activity or not. The classification accuracy for each set of cutoff points was evaluated by calculating weighted statistics, sensitivity, specificity, and the area under the receiver operating characteristic curve (AUC). An AUC value of $> .90$ is considered excellent, $.80 - .89$ good, $.70 - .79$ fair, and $< .70$ poor (Metz, 1978). The level of statistical significance was set at $p < .05$ for all statistical comparisons. Data analysis was performed using SPSS software (IBM Corp., Armonk, NY, USA) for Windows, version 24.0, as well as MedCalc 14.12.0 (Mariakerke, Belgium).

Results

The descriptive data of the sample based on the characteristics presented by the participating coaches in the study can be observed in Table 1.

Table 1

Descriptive data of the sample based on the characteristics presented by the participating coaches in the study. Descriptive data concerning age, expertise, as well as their classification by nationality, education and coach levels, the competitive video game, and physical status

	Age	Years spent in competition	N° tournaments played as coach
	M ± SD	M ± SD	M ± SD
Country			
Spain (n = 39)	26.15 ± 3.73	6.72 ± 3.46	8.97 ± 6.39
Portugal (n = 15)	25.27 ± 2.94	6.27 ± 2.66	10.00 ± 5.92
Brazil (n = 3)	26.00 ± 1.73	7.33 ± 0.58	8.00 ± 2.00
Germany (n = 2)	27.00 ± 0.00	8.50 ± 2.12	16.00 ± 0.00
Italy (n = 1)	22.00	4.00	4.00
Denmark (n = 1)	24.00	3.00	8.00
Uruguay (n = 1)	23.00	3.00	6.00
Total (n = 62)	25.81 ± 3.37	6.53 ± 3.15	9.26 ± 6.00
Educational level			
High school (n = 30)	25.97 ± 3.16	7.37 ± 3.02	8.03 ± 5.95
University (n = 32)	25.66 ± 3.61	5.75 ± 3.10	10.41 ± 5.90
Total (n = 62)	25.81 ± 3.37	6.53 ± 3.15	9.26 ± 6.00
Coach_Classification			
Amateur (n = 18)	23.50 ± 3.70	5.00 ± 3.25	9.44 ± 6.01
Professional (n = 44)	26.75 ± 2.75	7.16 ± 3.00	9.18 ± 6.06
Total (n = 62)	25.81 ± 3.37	6.53 ± 3.15	9.26 ± 6.00
Main Esport			
LOL (n = 38)	26.16 ± 2.98	6.14 ± 2.54	11.19 ± 6.20
Valorant (n = 24)	25.61 ± 3.86	7.35 ± 3.87	6.26 ± 4.58
Total (n = 62)	25.81 ± 3.37	6.53 ± 3.14	9.26 ± 6.00
Physically Active			
Yes (n = 40)	25.78 ± 3.72	6.90 ± 3.41	9.35 ± 6.41
No (n = 22)	25.86 ± 2.70	5.86 ± 2.53	9.09 ± 5.30
Total (n = 62)	25.81 ± 3.37	6.53 ± 3.14	9.26 ± 6.00

Note: LOL = League of Legends; M = mean; SD = standard deviation.

The results showed significant differences in the mean scores for the motivation dimension, both concerning the classification of the sample based on the type of coach and the type of competitive videogame they are involved in ($p < .05$) (Table 2). Specifically, for amateur coaches, the mean score for the motivation dimension was higher ($Ma = 7.26 \pm 1.12$) compared to professional coaches ($Mp = 6.74 \pm 1.12$). On the other hand, for the same motivation dimension, the mean scores were higher in the case of Valorant ($Ma = 7.26 \pm 1.13$) compared to League of Legends (LOL) ($Ma = 6.62 \pm 1.06$).

Table 2
 Mean values obtained for dimensions of the Coaching Efficacy Scale based on different variables related to the characterization of esports coaches

	Motivation		Strategy		Technique		Character	
	M ± SD	p	M ± SD	p	M ± SD	p	M ± SD	p
Country								
Spain (n = 39)	6.99 ± 1.16		6.93 ± 1.15		6.68 ± 1.30		6.99 ± 10.5	
Portugal (n = 15)	6.64 ± 1.17		7.09 ± 1.27		6.44 ± 1.14		6.72 ± 1.56	
Brazil (n = 3)	6.76 ± 0.95		7.57 ± 0.65		7.39 ± 0.42		7.58 ± 0.63	
Germany (n = 2)	6.50 ± 1.31		7.29 ± 0.61		6.79 ± 0.77		7.17 ± 1.18	
Italy (n = 1)	8.71	.44	8.86	.42	8.50	.6	9.00	.32
Denmark (n = 1)	6.86		8.00		7.80		9.00	
Uruguay (n = 1)	6.29		8.71		7.00		6.75	
Total (n = 62)	6.89 ± 1.14		7.09 ± 1.17		6.72 ± 1.22		7.02 ± 1.20	
Educational level								
High school (n = 30)	6.91 ± 1.24		7.04 ± 1.25		6.78 ± 1.25		6.72 ± 1.35	
University (n = 32)	6.88 ± 1.06	.95	7.13 ± 1.10	.77	6.66 ± 1.20	.69	7.30 ± 0.98	.06
Total (n = 62)	6.89 ± 1.14		7.09 ± 1.17		6.72 ± 1.22		7.02 ± 1.20	
Coach_Classification								
Amateur (n = 18)	7.26 ± 1.12		7.22 ± 1.06		6.94 ± 1.15		7.46 ± 0.83	
Professional (n = 44)	6.74 ± 1.12	.035*	7.03 ± 1.22	.57	6.62 ± 1.24	.37	6.84 ± 1.29	.06
Total (n = 62)	6.89 ± 1.14		7.09 ± 1.17		6.72 ± 1.22		7.02 ± 1.20	
Main Esport								
LOL (n = 38)	6.62 ± 1.06		7.04 ± 1.26		6.51 ± 1.26		6.82 ± 1.33	
Valorant (n = 24)	7.26 ± 1.13	.008**	7.21 ± 1.05	.60	7.06 ± 1.13	.09	7.36 ± 0.95	.09
Total (n = 62)	6.86 ± 1.17		7.11 ± 1.17		6.73 ± 1.23		7.03 ± 1.22	
Physically Active								
Yes (n = 40)	7.03 ± 1.09		7.20 ± 1.08		6.77 ± 1.16		7.2 ± 1.09	
No (n = 22)	6.66 ± 1.20	.23	6.89 ± 1.31	.33	6.61 ± 1.34	.63	6.69 ± 1.34	.11
Total (n = 62)	6.89 ± 1.14		7.09 ± 1.17		6.72 ± 1.22		7.02 ± 1.20	

Note: LOL= League of Legends; M = mean; SD = standard deviation; p = significance level; * = $p < .05$; ** = $p < .01$.

Finally, through the analysis of ROC curves (Table 3), the cutoff points for the different dimensions of the Coaching Efficacy Scale questionnaire were determined. In this case, taking into consideration both overall scores, and the type of videogame, their classification as coaches, educational level and physical activity (active or sedentary).

Table 3
ROC analysis for the different dimensions of the Coaching Efficacy Scale questionnaire was performed based on various variables related to the characterization of esports coaches

	Motivation		Strategy		Character				
	General	T_Coach	Esport Clasf	Esport Clasf	T_Coach	T_Coach	Studies	Physical Activity	
	(n = 58)	Prof (n = 41)	LOL (n = 37)	LOL (n = 37)	Prof (n = 43)	Amateur (n = 18)	High School (n = 29)	High School (n = 29)	Active (n = 22)
	Esport Clasf	Esport Clasf	T_Coach	T_Coach	Studies	Studies	Physical activity	T_Coach	Studies
	LOL	LOL	Amateur	Amateur	High School	High School	Sedentary	Amateur	High School
AUC	0,66	0,78	0,79	0,71	0,68	0,79	0,76	0,87	0,78
SE	0,08	0,09	0,08	0,11	0,08	0,14	0,09	0,1	0,1
95% IC	0.52 a 0.78	0.58 a 0.86	0.62 a 0.91	0.53 a 0.84	0.52 a 0.82	0.53 a 0.94	0.56 a 0.90	0.69 a 0.96	0.56 a 0.93
p	0.04*	0,007**	< 0.000**	< 0.05*	0,03*	0.04*	0,006**	< 0.000**	0,006**
IY	0.27	0,48	0.53	0.48	0,28	0,67	0,37	0,75	0,48
C_P	> 6,57	> 6,57	<6,43	<7,43	>7,25	< 7,75	< 6,75	< 7,75	> 6,00

Note: Only significant results are presented. N = number; *= significance $p < .05$; **=significance $p < .01$; IC = Confidence Index; IY= Youden Index; C_P = Cutoff point; SE = Standard Error; AUC = area under the curve; LOL= League of Legends; Esport Clasf= type of esports; T_Coach=coach classification; Prof = professional coach.

The ROC analysis revealed cutoff points in the scores obtained for the motivation dimension, both overall based on the type of esports practice (6.57), and specifically for LOL when discriminating between professional and amateur coaches (6.57). For the motivation dimension, coaches showed cutoff points of 6.43 when considering LOL practice to differentiate between amateur and professional coaches. Moving on to the strategy dimension, cutoff points of 7.43 were observed exclusively for LOL practice when discriminating between types of coaches. Regarding the character dimension, cutoff points of 7.25 and 7.75 were found when distinguishing between professional and amateur coaches based on their level of education. Additionally, for the character dimension, a cutoff point of 6.75 was observed when considering whether coaches engaged in physical activity or not. On the other hand, for discriminating based on the classification of coaches, the cutoff point was 7.75.

Finally, the character dimension revealed a cutoff point of 6.00 when considering the coaches' level of education for differentiation, as well as their involvement in physical or sporting activity.

Discussion

The aim of this study was to analyse the effectiveness of professional and amateur esports coaches in order to generate the first representative data for this population.

When comparing the scores obtained for the dimensions included in the Coaching Efficacy Scale, it can be noted that the results are consistent with those found in other samples of traditional sports coaches (Myers et al., 2017). Specifically, the mean scores found in this study range from 6.72 to 7.02. These data are similar to those reported in studies conducted by Short and Short (2004), where coaches from various disciplines obtained scores between 6.8 and 7.7, or by Feltz et al. (1999), with an average ranging from 7.31 to 8.19 points, and finally, those reported for soccer coaches by Keattholetswe and Malete (2019), with scores between 7.67 and 8.12.

The similitude in these scores could be ascribed to the significant professionalization and growth that the esports sector has undergone. In this regard, to comprehend the level of professionalization and reach of esports, studies such as that of Cranmer et al. (2021) demonstrate that over the last 7 years, esports have been able to attract more than 60 million annual viewers compared to the NBA's annual 20 million. Similarly, Activate's study (2023) notes that the age group between

18 and 25 has altered its consumption preferences for competitions, dedicating 55% of leisure time to watching esports as opposed to 45% to traditional sports. These data indicate a societal change in the influence of esports, resulting in a continuous rise in the economic figures handled by clubs and organizations, along with an increased ability to invest in their personnel. Consequently, akin to traditional sports, esports clubs have opted to invest substantial amounts of money in enhancing their infrastructures, including coaches being a key component in this framework, given their importance and relevance to the players' performance (Difranco-Donoghue et al., 2019; Jenny et al., 2017; Sanz-Matesanz et al., 2023). The degree of professionalization of coaches is becoming comparable to that already established in more traditional sports practices (Cranmer et al., 2021; Giakoni-Ramírez et al., 2022).

In line with this, Myers et al. (2017) state that scores close to seven are synonymous with a high level of knowledge about the specific sports practice. Likewise, these authors suggest that it also reflects experience, enabling coaches to manage game situations with better judgment, based on the trust placed in their players' professional abilities. It is essential to remember that the evolution in this sector also involves players, where their specialization and professionalization have grown significantly, having a comparable pace to that observed in traditional sports (Reitman et al., 2020; Sanz-Matesanz et al., 2023).

Furthermore, it should be noted that scientific evidence has correlated these values from the Coaching Efficacy Scale with improved performance and the ability of coaches to achieve positive outcomes both in competitions and in the personal development of players (González-Ponce et al., 2017; Keatleholetswe & Maletle, 2019; Short & Short, 2004; Teques et al., 2019). Therefore, the findings presented in this study could be of great relevance and utility, as no previous research has been conducted in this area within the esports environment. In traditional sports, the coach is considered a highly influential cornerstone in a player's life, capable of influencing their behaviours and emotional state, directly affecting their performance (González-Ponce et al., 2017).

As a consequence, the use of this tool would be highly valuable in detecting potential anomalies or situations that could adversely affect performance or effective coaching capabilities, based on the competencies acquired by the coaches and the players' perception of these abilities (González-Ponce et al., 2017). Moreover, providing a reference value for such an important parameter in player performance and well-being will enable clubs to possess a valuable tool when selecting talent, not only for players but also for recruiting future coaches (Oberg & Frank, 2011).

Additionally, when analysing the data according to the type of coach (professional or amateur), significant differences were found in the mean scores for the dimension of motivational competence. These findings are in line with those of Kavussanu et al. (2008), but not with those reported by Feltz et al. (1999) or Marback et al. (2005). The explanation for these discrepancies might lie in the way each study defines the experience accumulated by a coach. In this research, experience is synonymous with professionalization, and it is crucial to consider that it is not the number of years spent as a coach that makes the difference, but rather how the coach fulfils this role. For professional coaches, this involves significant changes in their personal life and social relationships, as it requires them to spend more time away from their families and become more isolated (Myers et al., 2017). Consequently, this can lead to a reduction in social support and relationships, potentially resulting in a lower perception of motivational competence among professional coaches (Myers et al., 2017). In fact, these authors assert that constant social support is a key factor in increasing perceived efficacy among coaches.

On the other hand, the explanation for the findings related to a higher perception of motivational competence among amateur coaches may be related to their ambition for improvement and progress (Erickson et al., 2008; Mesquita et al., 2011). Amateur coaches may be more motivated to excel and demonstrate their abilities, as they are likely driven by a strong desire to succeed and showcase their coaching capabilities. This might contribute to their higher perceived motivational competence. These findings shed light on the importance of considering the context and esports coach 'experiences when evaluating their coaching efficacy.

In this line, the effectiveness of coaching has been defined as the degree to which coaches believe they have the ability to influence the learning and performance of their athletes (Feltz et al., 1999). In the specific case of perceived effectiveness in the competence to motivate dimension, the same author states that the theoretical concept is comparable to the confidence a coach has in their ability to influence the skills and psychological states of their athletes. Perhaps, the differences found here are also related to the fact that an amateur coach works in a more modest esports club compared to a professional one. This circumstance implies that the amateur coach is solely responsible for motivating their players, whereas in the case of professional coaches, esports clubs have resources and specialised staff who specifically take care of these psychological aspects, resulting in those aforementioned differences, similar to those found in traditional sports (McCalla & Fitzpatrick, 2016).

The presence of additional resources and support staff in professional esports clubs can relieve some of the motivational responsibilities placed on coaches, allowing them to focus on other coaching aspects. On the other hand, amateur coaches may need to take on a more hands-on approach, personally managing and motivating their players. This could lead to

a higher perceived competence in motivation among amateur coaches, as they are directly involved in the day-to-day motivational processes.

When studying the scores obtained for the competence to motivate dimension based on the type of videogame, significant differences were found, showing a higher perception of this competence among coaches working with the videogame identified as Valorant. These results are supported by those obtained in the ROC curves, which allow establishing a discriminatory point based on this classification. These findings contrast with those reported by Feltz et al. (1999), where higher scores are associated with more experienced coaches. In line with this, considering that Valorant is a videogame released in mid-2020, while LOL was released in late 2009, the maximum experience of a Valorant coach cannot exceed 3 years, while LOL coaches can have more than 10 years of experience. The possible explanation for the results found here might be related to several factors. On one hand, even though Valorant is a recent creation, coaches do not emerge out of nowhere; they may have previously served as coaches in another type of videogame, and with the emergence of Valorant, new job opportunities in the sector have appeared, allowing for an easy transition within the esports ecosystem, as seen in other labour sectors (Wanberg et al., 2020). On the other hand, the novelty associated with this type of game could be related to a greater perception of motivation for carrying out their coaching duties, leading to an increase in the perception of competence to motivate as well (Myers et al., 2017). The same author pointed out that novelty is highly correlated with perceiving greater social support, essential for motivation as previously mentioned. The successful emergence of Valorant in the esports scene attracted a large audience, creating a strong sense of support among players and coaches, as well as a higher rate of competitive success (Tsorbatzoudis et al., 2003). In the case of LOL competition, time may have had an impact on these two elements related to novelty and motivation.

Other factors that could explain the differentiation between the values of LOL and Valorant coaches may be based on the characteristics of the games themselves. In this regard, a distinguishing element between both esports can be highlighted, such as their level of activity during competitions. In the case of Valorant, each match is divided into short-duration, high-intensity rounds that allow no place for relaxation for both players and coaches, maintaining a constant level of attention and motivation. On the other hand, in LOL, matches are linear, of indefinite duration, with moments of high tension and transitional periods that can negatively impact coaches' motivational competition due to the absence of a consistently high level of tension.

In addition, we could mention the coach's perception of intervening during the competition. In Valorant, timeouts during the competition are allowed, enabling coaches to have a discussion with the players that could contribute to their motivation and concentration. However, in LOL, coach interventions during the competition are prohibited. These statements align with the findings of Shahzad (2022), where a significant relationship between the motivation of team members and their leaders is observed in environments with high demands of constant attention, similar to the differences between LOL and Valorant. Moreover, this study demonstrates an improvement in leaders' perception of competence when given the ability to intervene in their teams' performance, resembling the prohibition or allowance of timeouts in esports competitions.

The analysis of the ROC curves allowed evaluating the motivational capacity of coaches across different types of competition, amateur or professional. As shown in the previous results, the type of competition could be used to discriminate between professional and amateur coaches in their ability to motivate, with a cutoff point of 6.57, with higher values for amateurs. Similarly, these ROC curves allow the same discrimination for amateur coaches in the LOL competition (cutoff point = 6.43). These findings are related to those reported by Mesquita et al. (2010), where they state that professional coaches have well-established and complex systems that lead to a sense of caution when considering them effective, due to their constant pursuit of perfection, thus decreasing their perceived efficacy. Conversely, the same study highlights that amateur coaches are more open to taking risks, showing higher levels of self-confidence in less polished methods and increasing their levels of perceived efficacy. As far as we know, this is the first study that defines these cutoff points. Even if further research is needed, this could be considered an important finding in order to differentiate coaches based on their level of professionalization and the type of videogame they work with. This will help determine the levels of efficacy in this competence to motivate dimension, being a fundamental characteristic that allows coaches to influence the players' skills and psychological state, which is closely related to player performance (Feltz, 1999).

Referring to the results obtained for the variable of educational level, it was observed that, even though no significant differences were recorded, the ROC curves showed cutoff points that allowed discrimination among coaches based on their educational background. Specifically, it was evident that for the dimension of player character, coaches with higher education who are professionals achieve a distinctive and higher score in their perception of their ability to develop this character in the player, compared to amateurs. These findings align with research in traditional sports, such as Gould et al. (2016) or Santos et al. (2010), where the coaches with higher education levels enhance their perceived efficacy values. According to research, the reason for this correlation lies in the greater capacity of higher-educated coaches to provide relevant information, comprehension, and access to it compared to those with lower educational levels (Feltz et al., 1999; Gould et al., 2016; Santos et al., 2010). This increased access capacity is further accentuated when dealing with professional

coaches, who, due to their greater resource levels, possess more tools to obtain high-quality information compared to amateur coaches (Poulus et al., 2022).

However, in contrast to the results found for professional coaches, when focusing on amateur coaches in the character dimension, the ROC curves revealed cutoff points indicating that coaches with lower levels of education display higher scores. These findings align previous research applied to coaches in traditional sports. These studies emphasize that in competitive coaching, the primary source of coaches' knowledge comes from other coaches and mentors, drastically reducing the importance of holding university studies (Irwin et al., 2004; Mesquita et al., 2010). This assertion implies a significant modification when selecting coaches based on the degree of club professionalization.

In this context, Gould et al. (2016) stated that the complexity of most scientific studies and their limited applicability to the coaching reality, leads to reduced usage among coaches. They also argue that this difference is even more pronounced in environments with fewer resources, linking the statement to the amateur scene, where more accessible sources of knowledge such as meetings between coaches or consultations with experts are favoured.

In a similar manner, referencing the meta-analysis by Myers et al. (2017), it is demonstrated that one of the primary factors influencing increased perceived efficacy in coaches of any level lies in their experience. This assertion could justify the data concerning higher scores among amateur coaches without formal education. These coaches, not having invested time in university studies and having engaged in coaching roles earlier, accumulate more experience compared to coaches who delayed their entry into competition due to pursuing higher education.

This proposition aligns with the argument by Mesquita et al. (2011), where they correlate increased coaching efficacy with greater experience associated with early entry into the competitive environment. The study suggests that this entry is influenced by access to higher education and its requirements, since in non-professional environments where compatibility is not feasible, coaches must delay their entry into the competition in order to fulfil academic obligations.

Continuing with the character dimension, concerning coaches with a lower level of education, it is evident that sedentary coaches obtain higher scores compared to active coaches. The rationale for this finding, as in the previous case, is related to the study by Mesquita et al. (2011), which associates higher coaching efficacy with those coaches dedicating more time to their role, thus accumulating greater experience than their counterparts who invest time in other activities.

However, when considering the overall data and continuing with the character dimension, active coaches exhibit better overall scores compared to sedentary ones. This discrepancy from the earlier findings is attributed to the differentiation based on the level of education. By examining the cutoff points, differences emerge among coaches with higher education, revealing that active coaches achieve higher scores than sedentary ones. This differentiation has been associated, in the context of traditional sports, with a better understanding of the significance of physical exercise as an enhancer of cognitive abilities (Mandolesi et al., 2018; Wilke et al., 2019), leading to its increased implementation in the team's routine.

Lastly, referring to the strategy dimension, no significant differences were found. However, the ROC curves allowed for discrimination between amateur and professional coaches in terms of their ability to develop strategies for their players, where amateur coaches scored higher than professional ones. Similar findings have been observed in studies conducted on coaches in other sports (Feltz et al., 1999; Myers et al., 2017). These studies suggest that the perception of coaches' strategic development capabilities is linked to achieving victories, which significantly influences their perceived efficacy as well (Feltz et al., 1999; Myers et al., 2017). Regarding this matter, it is asserted that achieving victories is easier in the amateur environment compared to the professional setting, where team demands increase drastically, and the number of tournaments decreases, making it more challenging to secure wins (George & Sherrick, 2019). Higher scores in the amateur setting may stem from the increased frequency of tournaments with lower stakes, leading to a more achievable and likely attainment of victories. Consequently, this could influence the coach's perceived effectiveness in strategy development compared to their professional counterparts (Tsorbatzoudis et al., 2003).

Conclusions

This study is the first one applied to esports coaches, who despite being the most influential figures in player performance and well-being, have not received much attention from the scientific community. Additionally, this study is the first to use cutoff points to differentiate profiles based on the scores obtained in the different dimensions of the efficacy scale. This information could be highly valuable and cost-effective in evaluating coaches, enabling the implementation of intervention strategies to improve their competencies and identify any shortcomings that could negatively impact esports players' performance.

Furthermore, the results indicate that perceived efficacy scores can be considered high (~7), comparable to those of traditional sports coaches, consolidating the professionalization of the esports industry. Alongside this, the scores obtained for each dimension of the efficacy perception scale are the first reference points available and can be applied by esports clubs to understand their coaches' profiles, facilitating talent acquisition and professional development.

Finally, this study reveals several determinants of perceived efficacy that should be considered in future analyses of efficacy in esports coach samples. These include the significance of possessing specific university studies for professional coaches and the importance of engaging in physical activity at any level of professionalization to enhance coaching capabilities. Likewise, when selecting coaches for amateur teams, experience is of vital importance, surpassing the relevance of possessing higher education. The data obtained in this study suggest that an increase in the experience of amateur coaches, with more dedication and years of experience in their role, outweighs the significance of having higher education when it comes to achieving success. Lastly, our study highlights that amateur and Valorant coaches have higher reference scores than those in LOL for all the dimensions analysed, a crucial point to consider in the coach' selection process. This implies that, the requirements for coaching positions within a professional or amateur club, differ based on the specialized game and the level of professionalization, leading to variations in the scores on an efficacy scale.

An important fact to keep in mind is that, depending on the club's profile, the elements to be considered when selecting a coach are different. If the club manages both categories (amateur or academy and professional), or if they are focused on one type of game or another, the selection processes should be approached in a different way. For the professional section, the education level and physical status will be key points, while for the amateur section, the experience level will be decisive. In the same way, being a specialist in Valorant or LOL is key to the success of the club, regardless of whether the coach meets other quality criteria in the selection process.

In this particular esports environment, clubs can undergo changes in terms of downgrading, and this affects both the players they will be able to retain, the new additions to be made, as well as the new coach profile that meets the level requirements of the club. Amateur coaches who move on to pro-coach requirements are ruled by different selection criteria, and vice versa. Hence the importance of having some normative reference data for the dimensions studied in this research.

Ethics Committee Statement

The study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the Catholic University of Murcia (code: CE052209; approval date 27 May 2022).

Conflict of Interest Statement

The authors declare no conflicts of interest.

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Authors' Contribution

Conceptualization, M.S.-M., L.M.M.-A. and G.M.G.-G.; Methodology, M.S.-M., L.M.M.-A. and G.M.G.-G.; Software, M.S.-M. and G.M.G.-G.; Validation, M.S.-M., L.M.M.-A. and G.M.G.-G.; Formal Analysis, G.M.G.-G.; Investigation, M.S.-M., L.M.M.-A. and G.M.G.-G.; Resources, M.S.-M., L.M.M.-A. and G.M.G.-G.; Data Curation, G.M.G.-G.; Writing—Original Draft, M.S.-M.; Writing—Review and Editing, M.S.-M., L.M.M.-A. and G.M.G.-G.; Visualization, M.S.-M., L.M.M.-A. and G.M.G.-G.; Supervision, L.M.M.-A. and G.M.G.-G.; Project Administration, M.S.-M., L.M.M.-A. and G.M.G.-G. All authors have read and agreed to the published version of the manuscript.

Data Availability Statement

The raw data supporting the conclusions of this article will be made available by the corresponding or last authors of the manuscript on request.

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