

Competencies of student-athletes with disabilities in the Brazilian Paralympic dual career context

Guilherme Alves Grubert^{1,3} , Murilo Luiz Burim² , Maria Angélica Alves Morais² ,
Sara Márquez³ , Helio Serassuelo Junior² 

¹*Instituto Federal de Educação, Ciência e Tecnologia de Mato Grosso do Sul, Departamento de Educação Física e Esporte, Aquidauana, MS, Brazil;* ²*Universidade Estadual de Londrina, Departamento de Ciências do Esporte, Londrina, PR, Brazil;* ³*Universidad de León, Institute of Biomedicine, León, Spain.*

Associate Editor: Adriano Percival Calderano Calvo , Universidade da Força Aérea, Rio de Janeiro, RJ, Brazil. E-mail: percivalcalvo.fab@gmail.com.

Abstract - Objectives: A dual career represents the process of combining sports training with educational or vocational development. Dual career competencies refer to the skills that enable athletes to balance academic and sporting demands. This study compared these competencies among Brazilian student-athletes with disabilities according to competition level. **Methods:** Fifty-eight student-athletes with disabilities (Mean = 26.2 ± 11.3 years; 67.2% male), all scholarship holders of the Olympic and Paralympic Generation Program (GOP) in Paraná, Brazil, participated in the study. They represented various sports and were categorized by competition level (School, State, National, International). Competencies were assessed using the Brazilian version of the Dual Career Competency Questionnaire for Athletes, which evaluates four factors: Dual Career Management (DCM), Career Planning (CP), Emotional Awareness (EA), and Social Intelligence and Adaptability (SIA). **Results:** One-way ANOVA revealed significant differences in EA [$F(3) = 3.294$, $p < 0.05$; $\eta^2 = 0.155$] and SIA [$F(3) = 3.404$, $p < 0.05$; $\eta^2 = 0.159$]. Post hoc tests indicated that school-level athletes scored lower than national-level athletes in EA ($\Delta M = -0.55$; $SE = 0.18$; $p < 0.05$), with a marginal difference in SIA ($\Delta M = -0.45$; $SE = 0.18$; $p = 0.061$). Age differences were also found, with school-level athletes younger than national and international peers, suggesting that part of the variance may reflect age-related psychosocial maturation. **Conclusion:** Athletes at lower competitive levels present reduced socioemotional competencies compared to higher-level athletes. These findings highlight the joint influence of sport progression and age on competency development and underscore the importance of early support strategies to promote sustainable dual careers among athletes with disabilities.

Keywords: dual career, athletes with disabilities, student-athletes, sport and education, Paralympic sport.

Introduction

The reconciliation between high-performance sports practice and academic education represents a significant challenge for athletes, particularly those involved in the Paralympic movement. A dual career, understood as the simultaneous development of a sporting trajectory and academic or professional qualification, is essential for the long-term sustainability of student-athlete careers¹. This process requires the development of specific competencies - an integrated set of knowledge, skills, attitudes, and psychological resources - that enable athletes to balance academic and sporting demands^{1,2}.

In Paralympic sports, the need for structured support is even more evident due to additional challenges

such as accessibility barriers and specific demands related to training and recovery³. Key competencies for dual career success include time management, career planning, and emotional resilience, which are fundamental for both academic and athletic achievement¹. The multidimensional model of athletic career development proposed by Wylleman and Lavalée⁴ highlights the importance of considering athletic, psychological, psychosocial, academic/vocational, and financial domains throughout an athlete's trajectory.

Challenges arise in all career stages. During pre-transition, athletes face barriers such as limited institutional support and school integration difficulties, requiring early development of emotional and organizational skills⁵. In the transition phase, feelings of insecurity and identity loss may intensify without proactive

strategies, increasing mental health risks^{6,7}. Post-transition, the focus shifts to entering professional activities, often within sports management or adaptive sport roles, emphasizing the need for transferable skills and identity expansion beyond sport⁵.

Psychophysiological stress from balancing sporting and academic demands is another critical factor. Interventions such as yoga have been shown to improve well-being and manage anxiety among dual-career athletes⁶. Continuous support from family, coaches, teachers, and institutions is essential for maintaining intrinsic motivation and addressing financial challenges, highlighting the relevance of a well-structured support network⁸⁻¹⁰.

Despite its importance, the promotion of dual careers for athletes with disabilities remains underexplored³. Internationally, models such as in Spain demonstrate the value of curriculum flexibility and intersectoral support between education and sport¹¹. Studies under the Erasmus+ Sport program further emphasize coordinated action among universities, sports organizations, and disability support agencies as crucial for dual career success¹². In Brazil, initiatives like the Paraná Olympic and Paralympic Generation Program¹³ exist, but systematic evaluation is scarce, and accessibility barriers, educational rigidity, and the lack of national policies hinder dual career development¹⁴⁻¹⁶.

To address this gap, it is crucial to examine how dual career competencies are developed and assessed in Paralympic athletes. This study used the Brazilian version of the Dual Career Competency Questionnaire for Athletes (DCCQ-A)¹⁷, which organizes competencies into Dual Career Management, Career Planning, Emotional Awareness, and Social Intelligence and Adaptability. The present study aimed to compare the dual career competencies of Paralympic student-athletes in Paraná according to competition level, examining developmental patterns across the sports trajectory.

Methodology

The current study employed a descriptive, cross-sectional design with a quantitative approach to analyze dual career competencies, using the Brazilian version of the Dual Career Competency Questionnaire for Athletes (DCCQ-A), as presented by Grubert, Márquez, and Serassuelo Junior¹⁷, along with the specific characteristics of the participants¹⁸.

Participants

The sample consisted of 58 student-athletes with disabilities from various sports disciplines, aged between 11 and 60 years (Mean = 26.2 ± 11.3 years),

with 67% identifying as male. All participants were scholarship holders in the Olympic and Paralympic Generation Program (GOP), covering different support categories offered by the state of Paraná, Brazil. GOP is an initiative of the Government of the State of Paraná under the responsibility of the State Department of Sports, in collaboration with the autonomous public entity Paraná Esporte, funded through its own resources, sponsorships, tax incentives, and donations. Recognized as the largest scholarship program for athletes in the country, its goal is to support athletes and coaches from Paraná in developing their sports careers through performance-based financial aid. The program also contributes to emotional well-being by enabling athletes to remain close to their families, which encourages their continued residence in the state and enhances performance in competitions, including the Olympic and Paralympic Games. The inclusion criteria comprised student-athletes with disabilities who were formally enrolled in an educational institution (school or university), held a valid functional classification in their respective sport, and were active scholarship holders of the Olympic and Paralympic Generation Program (GOP). Athletes were excluded if they were not enrolled in an educational institution, did not possess a valid functional classification, or failed to complete the questionnaire in its entirety.

In the current study, the scholarships received by the athletes were distributed according to competitive level: State (25.9%), School Development (22.4%), National (36.2%), and International (15.5%). Athlete eligibility required national or international functional classification. In addition, most participants competed in individual sports (68%), with the remainder participating in team sports (32%). The athletes' ages varied across scholarship categories, with mean ages of 15.3 ± 1.6 years for the school-level group, 21.7 ± 8.4 years for the state-level group, 34.9 ± 10.6 years for the national group, and 29.8 ± 7.9 years for the international group. Educational levels also reflected a progressive trend according to competition level: most school-level athletes were attending middle school (61.5%), state-level athletes were primarily in high school (60%), and the majority of national (42.9%) and international (33.3%) athletes were undergraduate students. Regarding types of impairment, physical disabilities were predominant at all levels, accounting for 100% of school-level, 93.3% of state-level, 85.7% of national, and 55.6% of international athletes, with visual impairments and cerebral palsy appearing more frequently in higher competitive levels.

Instrument

The *Dual Career Competency Questionnaire for Athletes (DCCQ-A)* aims to support student-athletes

and their supporters in developing key competencies for managing dual careers. This tool enables the setting of goals focused on long-term growth, while avoiding an exclusive focus on immediate sports performance. Originally developed by Defruyt et al.¹, the questionnaire was translated into the languages of the countries involved in the project (Catalan, Spanish, Dutch, French, Italian, Polish, Slovenian, and Swedish). It comprises 29 items distributed across four inter-related theoretical factors: *Dual Career Management*, *Career Planning*, *Emotional Awareness and Social Intelligence*, and *Adaptability*¹⁷. Responses are given on a five-point Likert scale (1 = "Not at all true" to 5 = "Extremely true") and assess both perceived importance and the athlete's level of mastery or commitment to each competency. In the interpretation of the factor scores, higher values indicate better perceived competencies and greater mastery in dual career management, while lower values reflect greater difficulties in these behaviors. The European version demonstrated good psychometric properties ($\chi^2(296) = 2699.61$; RMSEA = 0.049; CFI = 0.952; TLI = 0.934; $\alpha = 0.75$ –0.87)¹⁹. In addition, the Brazilian version showed statistical reliability ($\chi^2(371) = 1239.755$; RMSEA = 0.056; CFI = 0.982; TLI = 0.980; $\omega = 0.90$)¹⁷.

Procedures

Data collection occurred in three stages. First, contact was established with the Paraná General Sports Superintendence and the GOP to present and align the study's objectives. Next, with the support of the partnership between the Study Group on Physical Activity, Psychology, and Health (GEAPS/Uel) and the GOP, researchers and coordinators provided detailed explanations to the participants. This stage took place between April and August 2022. Finally, in September 2022, the questionnaire was distributed via email, with a two-month window for responses, through Google Forms. Participants over 18 years of age signed the Informed Consent Form. For minors, an Assent Form was signed by their legal guardians. The study was approved by the Research Ethics Committee on Human Subjects of the State University of Londrina, under opinion with the number CAAE 13654719.2.0000.5231, dated October 4, 2021.

Statistical analysis

For statistical analysis, the Kolmogorov-Smirnov test was applied to assess normality. In descriptive statistics, data are presented as mean and standard deviation, while for inferential statistics, a one-way Analysis of Variance (ANOVA) was used to compare means among the different groups. The assumption of homogeneity of variances was verified using Levene's test, and when this assumption was violated, Welch's

ANOVA was applied as a robust alternative. When the ANOVA test indicated statistically significant differences, Hochberg's post hoc test was applied to identify which groups differed from one another, ensuring proper control of Type I errors. Effect sizes (η^2) were also calculated to estimate the magnitude of group differences. The statistical package used was SPSS, version 20.0, and a significance level of $p \leq 0.05$ was adopted.

Results

The descriptive analysis of the study participants included 58 student-athletes with disabilities from various sports disciplines. Participants' ages ranged from 11 to 60 years, with a mean of 26.2 years (± 11.3). Regarding sex, there was a predominance of male participants, with 39 individuals (67.2%), while female participants accounted for 19 athletes (32.8%).

All athletes were part of the Olympic and Paralympic Generation Program (GOP), receiving different categories of financial assistance. Scholarships were distributed according to competitive level, as follows: State-Level Grant (25.9%), School Development Grant (22.4%), National Grant (36.2%), and International Grant (15.5%).

Concerning time spent practicing their sport, 24 athletes (41.4%) reported more than seven years of experience, 15 athletes (25.9%) between four and six years, 14 (24.1%) between two and four years, three (5.2%) between one and two years, and only two participants (3.4%) reported having practiced for up to one year. Regarding educational attainment, most athletes had completed high school (31%) or were currently pursuing higher secondary education (24.1%). Additionally, 15 (25.9%) had completed lower secondary education, eight (13.8%) had already completed higher secondary education, and three (5.2%) had only completed primary education. When asked about the educational institution they currently or most recently attended, 26 athletes (44.8%) indicated the state school system, followed by 24 (41.4%) from private schools, five (8.6%) from municipal schools, and three (5.2%) from federal institutions.

The athletes' ages varied across scholarship categories, with mean ages of 15.3 ± 1.6 years for the school-level group, 21.7 ± 8.4 years for the state-level group, 34.9 ± 10.6 years for the national group, and 29.8 ± 7.9 years for the international group. Educational levels also reflected a progressive trend according to competition level: most school-level athletes were attending middle school (61.5%), state-level athletes were primarily in high school (60%), and the majority of national (42.9%) and international (33.3%) athletes were undergraduate students. Regarding types

of impairment, physical disabilities were predominant at all levels, accounting for 100% of school-level, 93.3% of state-level, 85.7% of national, and 55.6% of international athletes, with visual impairments and cerebral palsy appearing more frequently in higher competitive levels.

Finally, with regard to employment status, the majority of athletes were not employed at the time of data collection (79.3%), while 12 (20.7%) reported being currently employed, which indicates that a subgroup of participants faced the demands of a 'triple career', balancing work, education, and sport. Participants were involved in both individual (68%) and team (32%) sports, and the most represented disciplines were Athletics (22.4%), Swimming (15.5%), and Wheelchair Basketball (13.8%), as detailed in Table 1.

Figure 1 presents the age distribution across competition levels. School-level athletes were the youngest group, concentrated in adolescence (12-17 years), while National-level athletes represented the oldest group (21-60 years). State-level athletes showed the widest age variability, and International-level athletes were intermediate in age. Significant age differences also were found among the competition levels (Levene's test: $F(3,54) = 6.33$, $p < 0.001$). Due to heterogeneity of variances, Welch's ANOVA was reported, indicating a strong effect of group on age

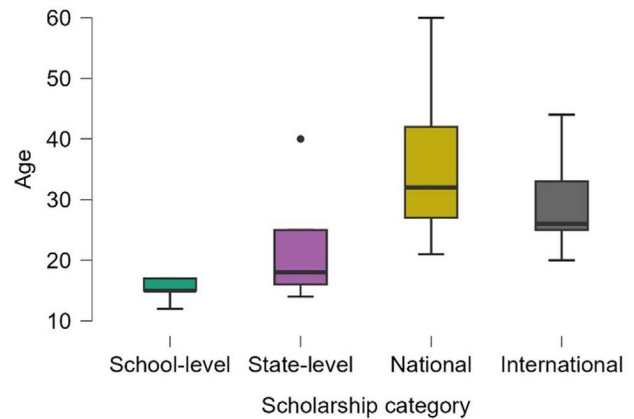


Figure 1 - Boxplot of age by competitive level.

($F(3,21.53) = 31.84$, $p < 0.001$, $\eta^2 = 0.48$). School-level athletes were significantly younger ($M = 15.31 \pm 1.60$) compared to National ($M = 34.86 \pm 10.60$; $p < 0.001$) and International athletes ($M = 29.78 \pm 7.87$; $p < 0.001$). Additionally, State-level athletes ($M = 21.67 \pm 8.43$) were younger than National-level athletes ($p < 0.001$). No other pairwise comparisons reached significance after correction.

The Table 2 presents the descriptive statistics (mean and standard deviation) for each competency factor according to competition level. Overall, the mean scores across the sample indicated moderate to high competencies in all factors, ranging from 3.88 ± 0.72 in Career Planning (CP) to 4.24 ± 0.55 in Social Intelligence and Adaptability (SIA). Specifically, School-level athletes reported lower mean scores in Dual Career Management (DCM: 3.82 ± 0.54), Career Planning (CP: 3.62 ± 0.52), Emotional Awareness (EA: 3.57 ± 0.57), and SIA (3.99 ± 0.59), compared to National-level athletes (DCM: 4.26 ± 0.47 ; CP: 3.92 ± 0.62 ; EA: 4.12 ± 0.50 ; SIA: 4.45 ± 0.37). International-level athletes obtained the highest mean values in CP (4.24 ± 0.42), EA (4.13 ± 0.64), and SIA (4.44 ± 0.44).

The Levene's test (Table 3) indicated that the groups showed homogeneity of variances for the factors: Dual Career Management (DCM) [(Levene (3, 54) = 0.82; $p > 0.05$)], Career Planning (CP) [(Levene (3, 54) = 0.99; $p > 0.05$)], Emotional Awareness (EA) [(Levene (3, 54) = 0.57; $p > 0.05$)], and Social Intelligence and Adaptability (SIA) [(Levene (3, 54) = 2.09; $p > 0.05$)]. Thus, the test indicated no violations of the homogeneity of variance assumption for any of the factors analyzed. Since all variables yielded $p > 0.05$, we can assume homogeneity of variance, satisfying the ANOVA assumptions.

The Figure 2 presents the One-Way ANOVA results for the dual career competency factors: Dual Career Management (DCM), Career Planning (CP),

Table 1 - Sports practiced by the study participants (n = 58).

Sports	n	%
Athletics	13	22.4
Badminton	2	3.4
Wheelchair basketball	8	13.8
Boccia	1	1.7
Canoeing	1	1.7
Cycling	2	3.4
Fencing	1	1.7
Wheelchair fencing	3	5.2
Blind Football	3	5.2
Golf	1	1.7
Powerlifting	2	3.4
Swimming	9	15.5
Taekwondo	3	5.2
Table tennis	4	6.9
Wheelchair tennis	1	1.7
Shooting	1	1.7
Triathlon	1	1.7
Sitting volleyball	1	1.7
Volleyball	1	1.7

Table 2 - Descriptive statistics for all categories and levels by competence factor.

		N	Mean	Std. deviation	Std. error	95% Confidence interval for mean		Minimum	Maximum
						Lower	Upper		
DCM	School-level	13	3.8231	0.54338	0.15071	3.4947	4.1514	2.60	4.60
	State-level	15	3.9533	0.81053	0.20928	3.5045	4.4022	2.30	5.00
	National	21	4.2619	0.47273	0.10316	4.0467	4.4771	3.50	5.00
	State-level	9	4.2556	0.60850	0.20283	3.7878	4.7233	3.30	5.00
	Total	58	4.0828	0.62468	0.08202	3.9185	4.2470	2.30	5.00
CP	School-level	13	3.6154	0.51937	0.14405	3.3015	3.9292	2.80	4.40
	State-level	15	3.8267	1.03335	0.26681	3.2544	4.3989	1.20	5.00
	National	21	3.9238	0.62121	0.13556	3.6410	4.2066	2.60	5.00
	State-level	9	4.2444	0.42164	0.14055	3.9203	4.5685	3.60	5.00
	Total	58	3.8793	0.71959	0.09449	3.6901	4.0685	1.20	5.00
EA	School-level	13	3.5714	0.57143	0.15849	3.2261	3.9167	2.43	4.29
	State-level	15	3.8952	0.47829	0.12350	3.6304	4.1601	3.14	4.86
	National	21	4.1224	0.49546	0.10812	3.8969	4.3480	3.14	5.00
	State-level	9	4.1270	0.64462	0.21487	3.6315	4.6225	3.14	5.00
	Total	58	3.9409	0.56452	0.07412	3.7925	4.0893	2.43	5.00
SIA	School-level	13	3.9890	0.58746	0.16293	3.6340	4.3440	2.71	5.00
	State-level	15	4.0286	0.66613	0.17199	3.6597	4.3975	2.43	4.86
	National	21	4.4490	0.37331	0.08146	4.2791	4.6189	3.71	5.00
	State-level	9	4.4444	0.44288	0.14763	4.1040	4.7849	3.57	5.00
	Total	58	4.2365	0.55396	0.07274	4.0908	4.3821	2.43	5.00

Note: DCM = Dual Career Management; CP = Career Planning; EA = Emotional Awareness; SIA = Social Intelligence and Adaptability.

Table 3 - Levene's test for homogeneity of variances.

	Levene	df1	df2	p
DCM	0.823	3	54	0.487
CP	0.990	3	54	0.405
EA	0.572	3	54	0.636
SIA	2.091	3	54	0.112

Note: DCM = Dual Career Management; CP = Career Planning; EA = Emotional Awareness; SIA = Social Intelligence and Adaptability.

Emotional Awareness (EA), and Social Intelligence and Adaptability (SIA). The results showed that dual career competencies vary according to the competition level of the student-athletes with disabilities. The statistical analysis revealed significant differences across groups for the factors Emotional Awareness (EA) and Social Intelligence and Adaptability (SIA). As also shown in [Figure 1](#), the test indicated statistically significant differences for EA [$F(3) = 3.294$, $p < 0.05$; $\eta^2 = 0.155$] and SIA [$F(3) = 3.404$, $p < 0.05$; $\eta^2 = 0.159$]. These results suggest significant differences among the groups in these two factors, justifying the application of a post hoc test to identify which groups differed from one another.

Accordingly, Hochberg's post hoc test ([Table 4](#)) indicated significant differences in the EA factor between student-athletes receiving the School Development Grant and those receiving the National Grant [$\Delta M = -0.55$; $SE = 0.18$; $p < 0.05$; 95% CI (-1.06–0.03)]. For the SIA factor, a marginally significant difference was observed [$\Delta M = -0.45$; $SE = 0.18$; $p = 0.061$; 95% CI (-0.96–0.04)].

Discussion

The general objective of the current study was to compare the dual career competencies of Paralympic student-athletes from the State of Paraná, according to their level of competition. It is important to note that the groups also differed significantly in chronological age, with school-level athletes being substantially younger than their national and international counterparts. This age gradient may partly explain the higher scores in Emotional Awareness and Social Intelligence observed among athletes competing at higher levels, as older individuals tend to exhibit more developed socioemotional regulation and adaptability.

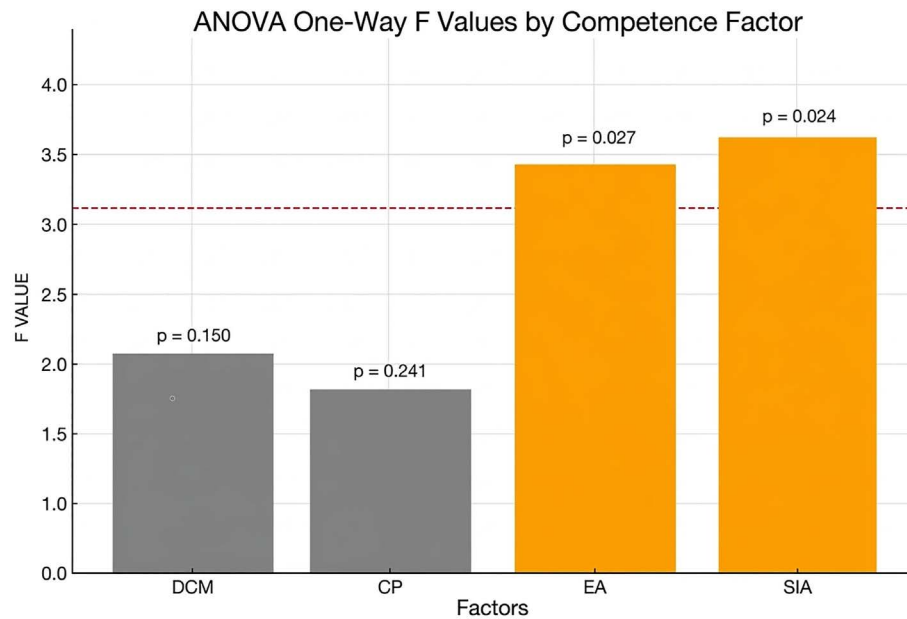


Figure 2 - One-Way ANOVA F-values by competency factor.

Table 4 - Hochberg post hoc test results.

Variable	Scholarship category	Scholarship category	Mean Difference	Std. Error	p	95% CI	
						Lower	Upper
EA	School-level	State-level	-0.32	0.20	0.508	-0.87	0.22
		National	-0.55*	0.18	0.029	-1.06	-0.03
		International	-0.55	0.23	0.111	-1.18	0.07
	State-level	School-level	0.32	0.20	0.508	-0.22	0.87
		National	-0.22	0.18	0.751	-0.71	0.26
		International	-0.23	0.22	0.882	-0.84	0.38
	National	School-level	0.55*	0.18	0.029	0.03	1.06
		State-level	0.22	0.18	0.751	-0.26	0.71
		International	-0.01	0.21	1.000	-0.58	0.57
	International	School-level	0.55	0.23	0.111	-0.07	1.18
		State-level	0.23	0.22	0.882	-0.38	0.84
		National	0.01	0.21	1.000	-0.57	0.58
SIA	School-level	State-level	-0.03	0.19	1.000	-0.57	0.49
		National	-0.45	0.18	0.088	-0.96	0.04
		International	-0.45	0.22	0.255	-1.07	0.16
	State-level	School-level	0.03	0.19	1.000	-0.49	0.57
		National	-0.42	0.17	0.116	-0.90	0.06
		International	-0.41	0.22	0.321	-1.01	0.18
	National	School-level	0.45	0.18	0.088	-0.04	0.96
		State-level	0.42	0.17	0.116	-0.06	0.90
		International	0.01	0.20	1.000	-0.56	0.57
	International	School-level	0.45	0.22	0.255	-0.16	1.07
		State-level	0.41	0.22	0.321	-0.18	1.01
		National	-0.01	0.20	1.000	-0.57	0.56

Note: * Mean difference is significant at the 0.05 level. Legend: DCM = Dual Career Management; CP = Career Planning; EA = Emotional Awareness; SIA = Social Intelligence and Adaptability.

The observed differences in dual career competencies across competition levels may also be interpreted in light of participants' educational attainment and type of impairment. Younger athletes at the school-level are still developing socioemotional and organizational skills, which may contribute to their lower scores in Emotional Awareness and Social Intelligence. In contrast, older athletes at national and international levels have greater academic experience and are exposed to more complex training and social contexts, fostering adaptive skills. Additionally, the variation in types of impairment across groups suggests that athletes with visual or multiple disabilities may face distinct challenges that further shape their socioemotional competencies. These factors highlight the importance of considering individual and contextual characteristics when analyzing dual career development, as differences in age, education, and disability type can interact with competitive exposure to influence the acquisition of key skills.

Overall, the results indicate that student-athletes at early stages of competition present lower scores in factors related to emotional regulation and social adaptation compared to national-level athletes. This may suggest that progression in sport contributes to the development of these competencies, or that athletes with stronger emotional and social skills are more likely to reach higher competitive levels. Future studies should control for age (e.g., using stratified analyses) to better disentangle the effects of age and sport progression.

In the case of Paralympic sports, the need for a more robust support structure is even more evident, given the additional challenges faced by these athletes, such as accessibility barriers and specific demands related to training and recovery³. The literature indicates that a dual career relies on various competencies, such as time management, career planning, and emotional resilience - key factors for academic and athletic success¹.

This relationship can be understood through the lens of the ecological model of career transitions in sports proposed by Wylleman and Lavallee⁴, which considers athlete development as a result of interactions among individual factors (such as emotional competencies), psychosocial factors (support from coaches and family), and contextual factors (school and sport environments). As athletes progress in their careers, they are exposed to more complex situations, that demand greater self-regulation, resilience, and adaptability. This process promotes the consolidation of socioemotional skills, as highlighted by Wylleman et al.⁵, who emphasize the importance of progressive exposure to challenges and continuous support for emotional maturity.

The pre-transition phase, corresponding to sports initiation, requires growing commitment and is often accompanied by barriers such as a lack of institutional support and difficulties with school integration, demanding coordinated actions that foster the development of emotional and organizational skills from the early stages of the career⁵. During the transition, emotional impacts tend to be intense, often associated with feelings of insecurity, loss of athletic identity, and uncertainties regarding professional futures. The absence of proactive strategies during an active career intensifies the challenges of this stage, increasing the risk of mental health issues⁸. In the post-transition phase, concern with entering new professional activities becomes central, and it is common for former athletes to move into roles related to sports management or institutional support in adaptive sports. This factor underscores the importance of career-long preparation grounded in the development of transferable skills and the expansion of identity beyond sport⁷.

Additionally, athletes who already possess high levels of emotional and social competencies may be better equipped to handle academic and athletic demands, making them more likely to attain higher competitive levels. Guirola Gómez et al.¹⁵ support this hypothesis by demonstrating that intrinsic motivation, psychosocial support, and stress management are key to career longevity, particularly in high-demand contexts. Similarly, Checa et al.¹⁴ observed that even when life skills are not explicitly addressed by coaches, athletes recognize that their sporting experiences - especially those that are more challenging - promote the development of skills such as perseverance, teamwork, and emotional intelligence. These findings reinforce the notion that the competitive sports environment can serve as a privileged setting for experiential learning, provided that adequate support structures are in place to maximize this formative process.

In contrast, no significant differences were found across competition levels in Dual Career Management (DCM) and Career Planning (CP). One possible explanation is that these competencies are more strongly influenced by structural and contextual factors - such as scholarship programs, family support, and access to educational opportunities - than by the competitive level itself. In Brazil, initiatives like the Olympic and Paralympic Generation Program (GOP) provide a standardized framework of financial and institutional support for athletes across all levels, which may reduce variability in these competencies¹³. Previous studies have also highlighted those structural conditions, such as economic barriers and access to institutional support, play a decisive role in shaping how athletes manage their dual careers, independently of their competitive status^{10, 11}. Another explanation is that

planning and management skills, unlike emotional and social competencies, tend to be more stable and less dependent on competitive exposure. These competencies are often strengthened through guidance from family, coaches, and teachers, rather than through progression in sport itself^{14,15}. Thus, while emotional awareness and adaptability may evolve as athletes face increasing psychosocial challenges at higher competition levels, career management and planning appear to be supported early by structural and educational contexts, resulting in more homogeneous scores across competition levels.

It is also relevant to note that approximately one-fifth of the athletes were employed while studying and training, thus engaging in a 'triple career'. This additional demand may have influenced their dual career competencies, particularly in terms of time management, stress regulation, and career planning. Previous studies have highlighted that athletes who combine work with academic and sporting commitments may experience increased pressure, which can interfere with both performance and well-being. Therefore, this contextual factor should be considered when interpreting the present findings.

Another relevant aspect is the psychophysiological stress arising from the reconciliation of sporting and academic demands. Recent studies indicate that interventions such as yoga have proven effective in promoting well-being and managing anxiety among student-athletes engaged in dual careers⁸. In this context, continuous support is essential to foster the well-being and social inclusion of Paralympic athletes in new personal and professional spheres⁹. Time management, emotional and personal competency development, and maintaining intrinsic motivation are among the main challenges faced by elite student-athletes. Moreover, economic factors play a decisive role, as the costs associated with dual careers may hinder the continuation of academic and athletic pursuits. The support of social agents, such as family members, teachers, and coaches, is crucial to the success of these athletes, highlighting the importance of a well-structured support network⁹⁻¹⁰.

The current findings align with the literature, which points to these competencies as essential for success in a dual career^{1,12}. Effective management of these aspects is critical for balancing athletic performance demands with academic obligations, particularly in high-competition environments.

Additionally, the organizational dimension of sport psychology service provision must be considered. The effectiveness of these services depends not only on the technical competence of the relevant professionals, but also on the institutional support and organizational structure that enable them⁷. Despite the

topic's relevance, the scientific literature has not yet thoroughly examined the promotion of dual careers for athletes with disabilities, making it a scarce and underexplored theme³. This gap reveals the urgency for actions that address the lack of knowledge and support in this field.

High-performance sport for people with disabilities requires intense dedication, a trait common to other elite modalities. However, such a routine may hinder reconciliation with academic training, increasing the risk of social exclusion due to uncertainty about the athlete's professional future. In this sense, the Spanish model stands out as a relevant reference: in Spain, institutional measures such as curriculum flexibility and intersectoral support between education and sport have been implemented¹¹.

The advancement of elite sport for people with disabilities represents a milestone in the process of social inclusion, with the dual career playing a central role in this context. High-level athletes develop valuable competencies, such as leadership and commitment, which can significantly contribute to their educational paths. To ensure this integration, higher education institutions need to adapt their pedagogical models to an increasingly inclusive society⁷⁻¹². In Europe, studies conducted under the Erasmus+ Sport program indicate that dual career success does not depend solely on universities but rather on coordinated actions among various sectors, including sports federations, clubs, coaches, government agencies, and disability support organizations¹². This intersectoral articulation, when considered together with goal alignment, is fundamental to providing effective support for the academic and athletic development of athletes with disabilities.

In Brazil, the debate on dual careers is still incipient, particularly regarding student-athletes with disabilities. Despite promising initiatives, such as the Paraná Olympic and Paralympic Generation Program, which offers financial support to athletes pursuing academic and sports training¹³, few studies have systematically assessed the impact of such policies. According to some authors, factors such as training overload, lack of flexibility in educational institutions, and the absence of consolidated national policies hinder the compatibility between sport and education¹⁴⁻¹⁵. Although these studies did not include athletes with disabilities, its conclusions may be extrapolated, given that challenges tend to be intensified by accessibility barriers and the scarcity of specialized programs.

A systematic review of the national literature reinforces this diagnosis, highlighting the absence of articulated public policies, lack of psychosocial support, and shortage of institutional strategies to foster the development of personal and academic compe-

tencies¹⁶. The absence of a national policy aimed at Paralympic dual careers compromises the sustainability of these athletes' trajectories, making it difficult for them to remain in sport and then transition academically and professionally after retirement.

Furthermore, it is important to highlight the diversity among athletes with disabilities, encompassing varying types and degrees of physical, visual, auditory, intellectual, and motor impairments. This heterogeneity requires individualized follow-up, trained professionals, and accessible physical and organizational structures, that minimize barriers within the academic environment. The implementation of inclusive protocols and training initiatives is essential to foster an educational setting that values diversity³.

The literature also shows that the development of emotional and social competencies is directly linked to the resilience and well-being of student-athletes. Ongoing emotional support is key to maintaining motivation and managing stress, which impact both athletic and academic performance. Several authors emphasize that social inclusion and support from family and coaches are crucial to success in a dual career, as they contribute to a favorable environment for personal and athletic development.

In this context, emotional and social support strategies aimed at the early stages of athletic careers are particularly important. Psychological support programs and social inclusion initiatives can promote balanced dual career development, ensuring greater sustainability in both sporting and academic pathways. A notable initiative is the *Euphoria Project*, launched in 2025 in Europe, which brings together experts from Belgium, France, Spain, and Sweden to develop a comprehensive mental health promotion framework in the sporting environment²⁰. Additionally, adapting academic curricula and schedules is a measure suggested by the literature to reduce stress and boost athlete motivation¹², facilitating the reconciliation between educational and sporting spheres.

The results of the current study make relevant contributions by addressing a topic still underexplored in Brazil: dual career competencies among student-athletes with disabilities. Focusing on this population provides visibility to a group frequently overlooked in academic research. Another strength lies in the comparative analysis across different competition levels, enabling reflection on the progressive development of competencies throughout the athletic journey. However, some limitations must be considered. The sample is restricted to the state of Paraná, which may limit the generalizability of the results to other Brazilian regions or international contexts, particularly as Brazil presents significant regional disparities, which could influence access to public policies and competency develop-

ment. Additionally, the cross-sectional design limits the ability to observe changes over time. Finally, reliance on self-reporting may introduce bias, affecting data accuracy.

Social inclusion is a central element in ensuring equitable opportunities for student-athletes with disabilities, especially in the early stages of their careers. Public policies and educational institutions need to foster inclusive environments that address the specific needs of this group, ranging from physical accessibility to psychosocial support. In this regard, it is urgent to expand research on athletes with disabilities, in order to better understand their challenges and propose more effective interventions for their athletic and academic development.

For future research, it is recommended that: longitudinal studies be conducted to track the development of dual career competencies over time, allowing for more detailed analysis of changes and contextual influences; research be expanded to include student-athletes from different regions of Brazil and other countries, in order to compare competencies and identify cultural and structural factors influencing dual careers; and researchers investigate the effectiveness of various educational interventions and emotional support programs in enhancing dual career competencies, using experimental methods to evaluate their impact.

Conclusion

The results of the current study indicate that dual career competencies vary according to the competitive level of student-athletes with disabilities. Specifically, it was observed that school-level athletes had lower *Emotional Awareness (EA)* and *Social Intelligence and Adaptability (SIA)* scores compared to national-level athletes. These findings suggest that sporting progression may be associated with the development of these competencies, which are fundamental to emotional regulation and adaptation to social and sporting demands.

The competencies that showed significant differences are directly related to the mental health and socialization of student-athletes. This finding underscores the importance of strategies aimed at emotional and social strengthening, especially in the early stages of the athletic journey. Psychological support programs and inclusion and integration initiatives may contribute to balanced dual career development, facilitating both retention and transition in sporting and educational environments.

In addition, significant age differences were found among the groups, with school-level athletes being considerably younger than national and international athletes. This indicates that part of the differ-

ences in socioemotional competencies may also reflect age-related psychosocial maturation, and not only the effects of sport progression. Future studies should therefore control for age to better understand its influence on dual career development. The presence of athletes engaged in a triple career (work-study-sport) represents an additional challenge that may have affected competency development and should be further examined in future research.

Given this context, it is essential to foster new research that deepens understanding of the relationship between mental health and dual careers, with special attention to the difficulties faced by student-athletes in the early stages of their sporting paths. Furthermore, the evidence presented here reinforces the need for coordinated action among sports institutions, educational entities, and health professionals, to provide appropriate support, enabling athletes to manage their activities in a sustainable and effective way.

AI use statement

No AI was used in this research.

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Author contributions (CRediT)

Guilherme Alves Grubertt: investigation, resources, visualization, writing - review and editing. **Murilo Luiz Burim:** writing - original draft, data curation, methodology, visualization, writing - review and editing. **Maria Angélica Alves Morais:** review and editing. **Sara Márquez:** conceptualization, supervision. **Helio Serassuelo Junior:** conceptualization, supervision, writing - review and editing.

Data availability statement

The data is available upon request from the reader.

Conflict of interest statement

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report.

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Corresponding author

Guilherme Alves Grubertt. Instituto Federal de Educação, Ciência e Tecnologia de Mato Grosso do Sul, Departamento de Educação Física e Esporte, Aquidauama, MS, Brazil.

E-mail: guilherme.grubertt@ifms.edu.br.

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