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CURRICULAR UPDATE IN THEORY AND METHODOLOGY OF SPORTS TRAINING (TMED): VALIDATION OF A QUESTIONNAIRE USING THE CRONBACH ALPHA COEFFICIENT

ACTUALIZACIÓN CURRICULAR EN TEORÍA Y METODOLOGÍA DEL ENTRENAMIENTO DEPORTIVO (TMED): VALIDACIÓN DE UN CUESTIONARIO MEDIANTE EL COEFICIENTE ALPHA DE CRONBACH

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ABSTRACT

The curricular update study in the subject of Theory and Methodology of Sports Training (TMST) at the Higher Pedagogical School of Bié, aimed to validate, using Cronbach's Alpha coefficient, a questionnaire that evaluates skills and competencies in fifth grade students. year of the degree in Physical Education and Sports at the ESPB, to justify the need for a curricular update at the TMST, for which it was conducted from a quantitative approach. The sample design adopted the census category once all the fifth-year students of the degree in Physical Education and Sports participated, consisting of 29 students, of them 25 male and five (5) female. The fundamental instrument used was the TMST competency questionnaire; the internal consistency of the questionnaire items was validated using Cronbach's Alpha coefficient. The validation results indicated a high level of reliability of ($\alpha = 0.858$), corroborating internal consistency. The results of the measures of central tendency, dispersion and correlation between items, using tools such as the Friedman test and ANOVA, showed significant differences, confirming the existence of several dimensions, strong, moderate and low correlations between items, as well as an understanding of the areas in which students show greater or lesser mastery. Weak correlations between items were found as limitations, which infers the need for a review and corroboration with other methods such as item factor analysis (IFA).

RESUMEN

El estudio actualización curricular en la asignatura de Teoría y Metodología del Entrenamiento Deportivo (TMED) en la Escuela Superior Pedagógica de Bié, tuvo como objetivo validar mediante el

Palabras clave:

Alpha de Cronbach, validez, competencias, actualización curricular, Teoría y Metodología del Entrenamiento Deportivo (TMED)	coeficiente Alpha de Cronbach, un cuestionario, que evalúe las habilidades y competencias, en estudiantes de quinto año de la licenciatura en Educación Física y Deportes en la ESPB, para justificar la necesidad de una actualización curricular en la TMED, para lo cual fue conducido a partir de un enfoque cuantitativo. El diseño de la muestra adoptó la categoría de censo una vez que participaron la totalidad de los estudiantes de quinto año de la licenciatura en Educación Física y Deportes, constituidos por 29 estudiantes, de ellos 25 del sexo masculino y cinco (5) femeninas. El instrumento fundamental empleado fue el cuestionario de competencias en TMED, la consistencia interna de los ítems del cuestionario se validó mediante el coeficiente Alpha de Cronbach. Los resultados de la validación indicaron un alto nivel de confiabilidad de (α = 0.858) corroborando la consistencia interna. Los resultados de las medidas de tendencia central, dispersión y correlación entre ítems, utilizando herramientas como la prueba de Friedman y ANOVA mostró diferencias significativas, confirmando la existencia de varias dimensiones, correlaciones fuertes, moderadas y bajas entre ítems, así como una comprensión de las áreas en que los estudiantes muestran mayor o menor dominio. Se encontraron como limitaciones correlaciones débiles entre ítems lo que infiere la necesidad de una revisión y corroboración con otros métodos como el análisis factorial de ítems (IFA).

Introduction

The integration of theory and practice is crucial in the formation of competencies in Physical Education and Sports, this study emphasizes the role of the Theory and Methodology of Sports Training (TMED), not only as a subject, but as a fundamental learning strategy for those trained in the sphere of sports performance, to be able to organize, structure, plan, regulate and control the sports training process in each of the stages of sporting life. At the Bié Higher Pedagogical School, TMED has gained relevance for the professional practice of future trainers.

The development plan for Angola 2023-2027, Government of Angola (2023) declares the need to strengthen programs to improve the quality of higher education and the development of scientific research, while highlighting the need to create the basis for better competitive performance of the athletes of the national teams in international events, considering the generalization of sports practice and the improvement of high performance sports, with emphasis on the training of sports instructors and agents. In this sense, it is important to explain that, in the Theory of Sports Training, the ideas of several sciences are articulated, such as descriptive anatomy, neurophysiology, biomechanics and experimental psychology (Rodriguez, Leon and de la Paz, 2022), as a whole, characterized by the search for performance and productivity of the body, logically, guided by teachers.

The updating of curricular content is fundamental, especially in higher education, facilitating the design of educational programs aimed at training professionals prepared for contemporary challenges, with relevance in the field of sports. Within the TMED, an update is essential for students in physical education and sports of the ESPB to develop the necessary competencies for a performance in correspondence with the socio-cultural context, also achieving social inclusion, related to the attention to diversity (Oroceno, 2008).

The need to address curricular transformation, and as part of it, the updating of contents, leads to an approach to some assumptions of curriculum theories, of which Malagón et al. (2019) highlight the order, which then transits to the category of method, which was conceived as a teaching approach, a discipline oriented to rigor, respect and compliance with academic commitments, these modified elements can be part of indicators for updating the curriculum gives the TMED in the ESPB. Basantes (2019) for his part highlight the socio-political perspectives of the curriculum and ponders the relationship between pedagogical theory and practice, this author this vision defining the curriculum as an essential tool to transform curricula into teaching programs, facilitating pedagogical implementation. This articulation between method and context can provide a set of principles and indicators to update the contents of the TMED.

An academic program can be considered high quality when students acquire the necessary skills to face the challenges of their environment, likewise it is crucial that the curriculum can reflect the characteristics of the knowledge society, integrating the competency-based approach (Barzaga et al., 2019 and Santiago et al., 2019).

Curricular revision from a theoretical perspective has become a global demand (Paz and Padrón, 2020), in the context of university education in the 21st century, a continuous process of improvement and transformation is observed, related to the demands of the contexts and social realities. The TMED in the ESPB requires an update that responds to these demands, as described in the PDN in Angola 2023-2027, and that the approach also corresponds to the educational and professional context of the region.

This adaptation ensures that TMED contributes to the training of skilled professionals (Government of Angola, 2023) to apply theoretical and practical knowledge.

Considering the above, it is important that the updating of the TMED with support in the theories of curricular transformations, be supported by the pillars of curriculum design, this process involves making decisions that cover the creation, implementation and evaluation of the study plan, based on theoretical foundations, aligned to social demands and institutional circumstances (Paz and Padrón, 2020),

On the other hand, Monasterios et al. (2020) point out that Higher Education Institutions face challenges due to a society in constant transformation, these authors highlight the importance of continuous updates in curriculum formulation, emphasizing the dynamics experienced by the contexts, which is why an evolving curriculum vision is needed. This perspective is relevant for the ESPB where the updating of the TMED curriculum must be in correspondence with the changes and needs of the educational and sports field.

Despite the assumptions found in the scientific literature on curricular transformation, the findings in research related to physical education and sports are limited. The theoretical systematization as part of the secondary data does not reveal that there is any research related to curricular modifications in physical education and sports in general, and in TMED in particular, both in the national and international context, making evident the scientific novelty of this study.

In order to delimit the needs for updating the TMED curriculum at the ESPB, it is crucial to think of instruments that allow the diagnosis of professional skills and competencies, as well as to emphasize that the measurements of the method ensure quality so that areas for improvement can be found. In the perspective of Arias & Sireci (2021) validity is a fundamental concept in the context of educational and psychological tests, once they justify the degree to which theoretical and empirical requirements support the interpretations of the scores obtained in a test, for a specific purpose. Validity is considered the most important aspect in test development and evaluation, reiterating the need for this process to ensure a sound scientific basis for the interpretations the researcher intends to make (AERA, APA, & NCME, 2014).

Considering the above, it can be affirmed that the validation of a questionnaire to diagnose competencies in TMED is an essential step for the measurements made to be accurate, and therefore relevant. It is an inescapable fact that updating the TMED curriculum requires a clear understanding of the knowledge and skills that future professionals must acquire, which demands a rigorous diagnosis of the necessary competencies, trying to cover both classical and contemporary theoretical assumptions. In the context where this study is being developed, a rigorous diagnosis of the necessary competencies is crucial, so the development of a solid questionnaire validated and aligned with the curricular objectives not only allows the identification of gaps in teaching, but also acts as a tool to guide continuous improvements in the training of students. Validation should include, content validity, construct validity and criterion validity, ensuring that the questionnaire items are relevant and representative of the desired skills (AERA, APA, & NCME, 2014).

Reliability is one of the essential psychometric properties in research instruments, especially in classical test theory (CTT). In this sense, Cronbach's Alpha is one of the best known methods for measuring the internal consistency of scales. This coefficient gives a clear indication of how well the items of a questionnaire are related to each other, reflecting the homogeneity of what they are intended to measure (Uyanah & Nsikhe, 2023,

p.17; Passafiume et al., 2024; Prodromidis et al. 2024), these authors state that a high Cronbach's Alpha, generally above seven-eight, suggests that the items measure the same construct, which is considered fundamental for the assessment of skills and competencies in TMED.

It is important to highlight the contributions of Chaves et al. (2024), weighting inter-item variability as an element to be considered, Shoushtari-Moghaddam (2024) highlights the robustness of inter-item correlations, as does Lira et al. (2024) explain the impact of inter-item differences, similarly in the estimates of Doğan et al. (2024) explain intraindividual variability, in which Husebø et al. (2023); Peipert et al. (2018) also highlight benefits and unfavorable criteria of high item-to-item correlation, while Kanbay et al. (2022) make their contributions to the moderate correlations between items, at the same time as Kennedy (2022); Cook and Beckman (2006) elaborate on the negative correlations.

Given the importance of a curriculum that adequately prepares future professionals, the validation of this questionnaire is presented as a relevant initiative to contribute to quality training in the field of sport, both for initiation and high performance, based on the update of the TMED.

Considering all of the above, the purpose is to validate, by means of Cronbach's Alpha coefficient, a questionnaire that evaluates the skills and competencies in fifth year students of the degree in physical education and sports at the ESPB, in order to justify the need for a curricular update in the TMED.

Method

This study with the objective of diagnosing the skills and competencies of students in their fifth year of training in the degree in physical education and sport of the ESPB, adopted a quantitative approach considering the way of approaching the problem (Prodanov and Freitas, 2013), this criterion is efficient in studies related to questionnaire or psychometric validation, likewise it is considered descriptive considering its gnoseological and applied objective due to its nature. The IMRyD methodology (Villegas et al. 2023), considering at all times the conceptual management of the variables, which made it possible to contextualize the results obtained with previous studies. [1]

The sample design adopts the census category once the totality of the fifth year students of the degree in Physical Education and Sports, who received the subject Theory and Methodology of Sports Training (TMED) during their formation, constituted by 29 students, 25 of them male and five (5) female, were studied.

The fundamental instrument used was the TMED skills and competencies questionnaire. The internal consistency of the questionnaire items was validated using Cronbach's Alpha coefficient. The application of the instrument was carried out in a single section, after clarifying the research objectives and guaranteeing the reliability of the data. Data analysis was performed using descriptive techniques, such as standard deviation and mean values. Statistical analysis included Friedman's test and ANOVA.

[1] Research where the contents are structured in some way into introduction, methods, result and discussion. https://dialnet.unirioja.es/servlet/articulo?codigo=8632827

Results

The application of Cronbach's Alpha coefficient, to the fifth-year students of the degree in physical education and sports of the ESPB, to evaluate the reliability of the questionnaire applied to diagnose the development of skills and competencies in TMED, which justifies a curricular update, was performed using the statistical software SPSS version 25, the same yielded a value (α = 0.858) indicating a high level of internal consistency. The alpha based on standardized items was (α = 0.877), a result that supports that the questionnaire adequately measures the construct of skills and competencies in TMED. The detailed results extracted from the SPSS version 25 statistical software can be corroborated in Table 1.

Table 1
Reliability statistics of Cronbach's Alpha coefficient

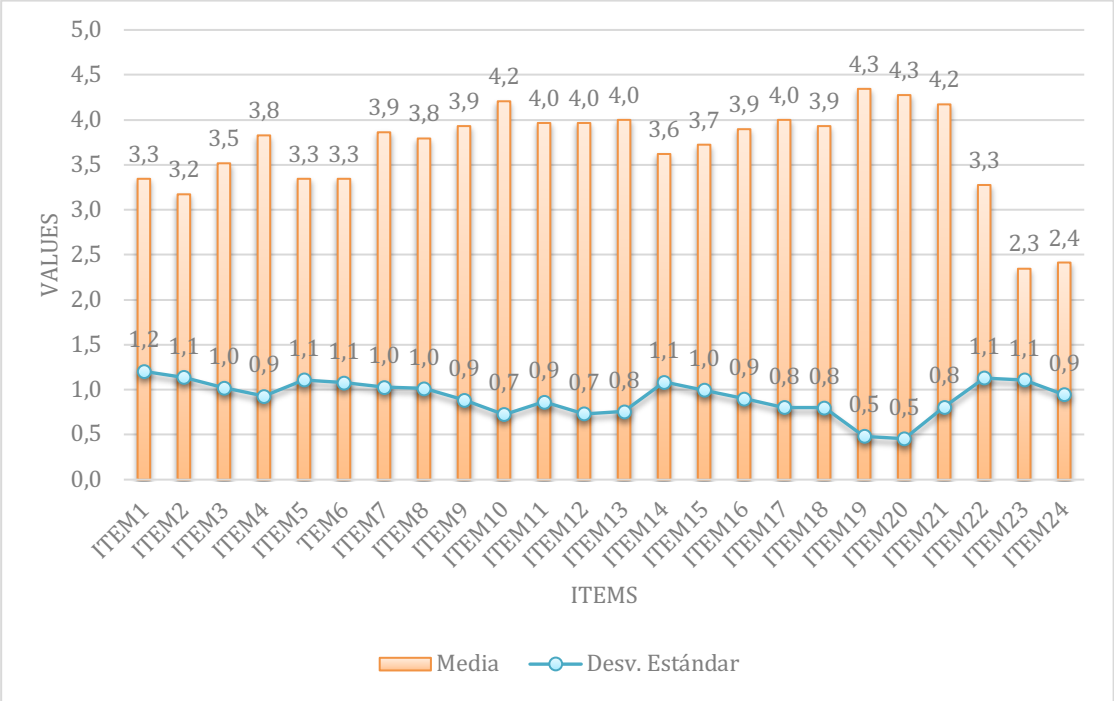
Cronbach's alpha	Cronbach's alpha based on standardized items	N of elements
,858	,877	24

Note. Taken from SPSS software version 21, adapted by Cruz (2024)

The measures of central tendency and dispersion made it possible to place the group studied in a level of difficulty around the data set. In this sense, the item measures range between ($\bar{X}$= 2.3 and $\bar{X}$= 4.3), with an overall mean of (μ= 3.68) on the scale, where the level of difficulty increases as the response values approach five (5). Item 10 ($\bar{X}$= 4.2), which represents the level of difficulty in applying the methods of sports training in correspondence with the time of functional orientation of the load, item 11 ($\bar{X}$=4), which is related to the difficulties in selecting the means and exercises in correspondence with each content of the preparation of the athlete, for its part, item 19 ($\bar{X}$= 4.3) shows high difficulties in elaborating the planning of sports training considering the periodic and cyclic structure of Matveev. The dispersion observed in the standard deviations with ranges between σ = 0.5; σ = 1.2, suggests variability in the perception of difficulty, indicating that some students find some items more difficult than others. Both the results of the measures of central tendency (mean) with the measures of dispersion (standard deviation) can be seen represented in Figure 1.

Figure 1

Measures of central tendency and dispersion



Note. Prepared by Cruz (2024)

On the other hand, the Friedman test with (Chi-square = 188.031, $p < 0.001$) corroborated that there are significant differences between the items of the questionnaire, a result that indicates that students present different levels of difficulty in the competencies evaluated. Similarly, ANOVA shows significant between-subjects variability with a sum of squares (SN= 138.241) and within-subjects (SN= 176.943), confirming differences in perceived difficulty among students. These differences represent the varying degree of challenge experienced by students in relation to the TMED competencies assessed. These results are shown in Table 2.

Table 2
ANOVA results with Friedman's test and Tukey's test for non-additivity

			Sum of squares	gl	Root mean square
Inter subjects			138,241	28	4,937
Intrasubjects	Between elements		176,943[a]	23	7,693
	Waste	Non-additivity	,118[b]	1	,118
		Balance	450,606	643	,701
		Total	450,724	644	,700
	Total		627,667	667	,941
Total			765,908	695	1,102

Note. Taken from SPSS software version 21, adapted by Cruz (2024)

The intraclass correlation coefficient (ICC) for average means is 0.858 with a confidence interval of 0.772 to 0.923, which ensures the stability of the measurement in terms of difficulty. On the other hand, the ICC for individual means is 0.201, which confirms the differences in the perception of item difficulty. The results are confirmed in Table 3.

Table 3
Intraclass correlation coefficient

		95% confidence interval		F test with true value 0	
	Intraclase[b] correlation	Lower limit	Upper limit	Value	gl1
Single measures	,201[a]	,123	,334	7,054	28
Average measurements	,858[c]	,772	,923	7,054	28

Note. Taken from SPSS software version 21, adapted by Cruz (2024)

An analysis of the correlation matrix (Appendix 2), presented between items (Appendix 1), was also carried out, in which strong relationships were observed, but weak relationships were also noted.

Strong positive correlations were confirmed between items 11 and 12 (r = 0.788), items 10 and 11 (r = 0.637). Negative correlations with salience were also found in items 22 and 21 (-0.172); items 22 and 19 (-0.180). Other items indicated low or moderate correlations with others, items 15 with item 9 and with item 23 (0.018 and 0.089) respectively. Another analysis is related to the subgroups and dimensions, as in the case of items 11 to 14, while items 17 to 20 also show high correlations.

Discussion and Conclusions

In the context of the present study, a questionnaire was validated by Cronbach's Alpha coefficient, applied to fifth year students of the ESPB Bachelor's Degree in Physical Education and Sports.

The results show that students face greater difficulty in applied competencies, evidenced mainly in the items that evaluate the difficulties to elaborate training planning considering periodic and cyclic models, as well as the difficulty to apply training methods in relation to the functional orientation of the load. This suggests difficulties in the connection between the theory taught in the corresponding classes and the ability to apply it in practice, which supports the approach of Basantes et al. (2019), authors who reveal the need to articulate theory and practice.

On the other hand, the significant variations among the competencies evaluated reflect that certain aspects of the curriculum do not respond to training needs, coinciding with the perspective of Monasterio et al. (2020), authors who highlight the importance of adapting the curriculum to changing demands.

The validation results from Cronbach's Alpha coefficient indicated a high level of internal consistency supporting the reliability of the questionnaire for assessing TMED competencies. This criterion is important in an educational context, according to Passafiume et al. (2024) reliability allows us to interpret the difficulty in terms of consistency in the students' answers. Cronbach's values above 0.8 in educational questionnaires reflect a solid psychometric structure, especially in contexts where multiple skills are to be assessed simultaneously, these criteria are indicative of robust reliability, which strengthens item cohesion and construct validity.

On the other hand, the value of the standardized items confirms the internal consistency, highlighting that the scale used in the questionnaire is appropriate to assess multiple competencies of students effectively. In this regard, Prodomidis et al. (2024) indicate that high standardized Cronbach's Alpha values confirm stability and absence of significant variations in consistency between subgroups of items.

The application of Friedman's test and the ANOVA reflect significant differences among the items, indicating that students present different levels of difficulty in the competencies evaluated. It should be noted that variability is common in instruments with multiple dimensions (Chaves et al., 2024), as in the case of TMED skills and competencies, which allows for the validation of Friedman's test. The sum of squares between subjects by means of ANOVA showed variability among the students evaluated, as did the intrasubject sum, showing the variability among items. This analysis allowed us to conclude that the items measure different dimensions. Lira et al. (2024) explain that differences between items are common in instruments that span several dimensions.

The results of the intraclass correlation coefficient (ICC) reaffirm that the instrument is suitable for assessing competencies in a stable manner over time. In the educational context, as explained by Doğan et al. (2024) a high ICC for average means, support the use of the difficulty measure as a reliable diagnostic tool, allowing the results to accurately reflect the perception of the group. Shoushtari-Moghaddam (2024) highlights in her study that ICC values close to 0.9 indicate that the instrument can provide reliable measurements, an essential element for the temporal validity of the data, especially in academic contexts.

However, the ICC scores on individual means were low, indicating variability in individual responses, suggesting significant differences in how students perceive the difficulty of each item. Gulliksen's (2013) study highlights that variability may be a reflection of differences in preparation, experience or self-perception of skills and competencies among students, highlighting the need to use averages in the interpretation of perceived difficulty.

The results of the ICC show a limitation found in the study. From these criteria emerges the need to consider personalization, student diversity and inclusion in

curricular updating. "Educational inclusion constitutes an ethical imperative and a complex practical challenge in the context of higher education" (Cedeño et al. 2024, p.70), conceptions that pursue the effective integration of diversity, which leads to the development of a culture of equity in the educational environment (Lewis and Olshansky, 2016), continuing with this line of thought, the characterization of inclusive practices in universities is crucial (Zárate-Rueda, Díaz-Orozco, & Ortiz-Gumán, 2017), once student diversity is recognized and addressed, which transcends individual capabilities, including sociocultural, economic, and ethnic aspects (Pedrero-García, Moreno-Fernández, & Moreno-Crespo, 2017).

The overall mean on the scale suggested a high level of difficulty in the development of skills and competencies in TMED, with some items approaching five, indicating greater difficulty, as in the case of the difficulty of applying training methods related to the load and the challenge to elaborate classical planning models, an important competence in the stage of the athlete's life, related to sports initiation. This coincides with the studies of Lira et al. (2024) who indicate that assessments of complex competencies, measures tend to be related to areas involving greater cognitive effort, this is beneficial since it allows indicating specific needs in the curricula, reinforcing the criteria highlighted, related to inclusion and educational diversity (Cedeño et al. 2024).

Analysis of the inter-item correlation matrix showed both strong and weak correlations, suggesting possible groupings into dimensions, as well as independent items. Positive correlations indicate that the items measured a similar construct; these criteria are consistent with previous studies. Kline (2015) suggests that it is common that in scales assessing several dimensions, positively correlated items suggest underlying factors, whereas negative correlations may indicate opposing dimensions, similarly Husebø et al. (2023), highlight the importance of strong inter-item correlation to strengthen construct validity and psychometric robustness (Peipert et al., 2018).

The results also showed moderate correlations between items of which the study by Kanbay et al. (2022) that moderate correlations provide variety to the construct, contributing to content validity, especially in multivariate questionnaires, which is appropriate for the proposed questionnaire to assess skills and competencies in TMED.

In addition, items with low correlation may require revision in terms of wording or adjustments in order to adequately represent the construct; it is also possible that they are measuring particular aspects that do not necessarily correlate with other more general aspects (Field, 2009) and may even impair the reliability of the scale (Cook and Beckman, 2006).

The presence of negative correlations constitutes a limitation of this study, suggesting a review of the items, in terms of content and structure, which according to Tabachnick and Fidell (2014), these discrepancies may indicate the need for an exploratory factor analysis, to better understand the latent structure of the instrument and adjust items with negative, low or no correlations. Even so, Asún, Rdz-Navarro & Alvarado (2016) in their study explain that for complex scales the use of item factor analysis (IFA) achieves equivalent parameter estimates, preventing biases, and the achievement of a more accurate representation of the constructs evaluated.

This study not only validates an instrument to measure competencies in TMED, but also provides a roadmap to adjust curricula according to the demands of contemporary sport, allows the formation of more competent teachers capable of facing sport challenges, both in initiation and high performance.

The results have significant practical implications for physical education and

sports programs. The high difficulty in training planning suggests the need to include specific methods that simulate real training planning and control scenarios.

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Annexes

Annex 1

Questionnaire Portuguese version

Item	Question	1	2	3	4	5
1	Quão difícil você acha compreender a evolução do treinamento desportivo ao longo do tempo?	◯	◯	◯	◯	◯
2	Avalie sua dificuldade em explicar os principais conceitos relacionados à evolução do treinamento desportivo.	◯	◯	◯	◯	◯
3	Quão desafiador é para você identificar as mudanças no organismo perante os efeitos da carga de treinamento?	◯	◯	◯	◯	◯
4	Avalie sua dificuldade em interpretar a lei de adaptação biológica ou a síndrome de Seyle.	◯	◯	◯	◯	◯
5	Como você classifica sua habilidade em aplicar os princípios pedagógicos dentro da preparação do desportista?	◯	◯	◯	◯	◯
6	Quão complicado é para você aplicar os princípios biológicos dentro da preparação do desportista?	◯	◯	◯	◯	◯
7	Avalie seu nível de dificuldade em identificar os componentes da carga segundo as diferentes teorias clássicas e contemporâneas.	◯	◯	◯	◯	◯
8	Como você classificaria o nível de dificuldade para avaliar sua capacidade de controlar as cargas de treinamento segundo sua orientação funcional?	◯	◯	◯	◯	◯
9	Quão complicado é para você identificar o papel dos métodos na dosificação, regulação e controle da carga de treinamento desportivo?	◯	◯	◯	◯	◯
10	Como você classificaria as dificuldades em aplicar os métodos do treinamento desportivo em correspondência com o tipo de orientação funcional da carga e os meios de treino?	◯	◯	◯	◯	◯

11	Avalie sua dificuldade em determinar os meios (exercícios) da preparação do desportista em correspondência com cada conteúdo.	○	○	○	○	○
12	Quão complicado é para você aplicar os componentes da carga de treinamento a cada conteúdo de preparação?	○	○	○	○	○
13	Quão desafiador é compreender as particularidades da preparação do desportista nas etapas da vida do atleta?	○	○	○	○	○
14	Avalie sua dificuldade em explicar o treino desportivo como processo pedagógico a longo prazo na base.	○	○	○	○	○
15	Quão complicado é para você elaborar a fundamentação teórica de um programa dirigido ao ensino desportivo?	○	○	○	○	○
16	Quão desafiador é elaborar um programa gráfico de ensino desportivo tendo em conta todos seus componentes?	○	○	○	○	○
17	Avalie seu nível de dificuldade em elaborar planos de treino a partir das tendências tradicionais.	○	○	○	○	○
18	Quão complicado é para você elaborar planos de treino a partir das tendências contemporâneas?	○	○	○	○	○
19	Quão desafiador é para você utilizar a metodologia para a elaboração da planificação do treinamento a partir da Estrutura periódica e cíclica de Matveev?	○	○	○	○	○
20	Avalie sua dificuldade em elaborar um plano escrito a partir da Estrutura periódica e cíclica de Matveev.	○	○	○	○	○
21	Quão complicado é para você aplicar os diferentes testes de controle da preparação do desportista?	○	○	○	○	○
22	Avalie sua dificuldade em aplicar os métodos, técnicas e instrumentos da seleção de talentos.	○	○	○	○	○
23	Quão desafiador é para você melhorar a competência pessoal e o controle emocional para orientar o treinamento e a competição de forma adequada?	○	○	○	○	○

24	Como você classificaria sua habilidade para orientar o treinamento e a competição de forma adequada?	◯	◯	◯	◯	◯

Annex 2

Correlation matrix between elements

	ITEM 1	ITEM 2	ITEM 3	ITEM 4	ITEM 5	TEM6	ITEM 7	ITEM 8
ITEM1	1,000	,451	-,266	,247	,442	-,067	,127	,324
ITEM2	,451	1,000	-,080	,063	,234	-,167	,420	,094
ITEM3	-,266	-,080	1,000	,474	,089	-,006	,479	,004
ITEM4	,247	,063	,474	1,000	,025	,383	,312	,264
ITEM5	,442	,234	,089	,025	1,000	-,312	,169	,383
TEM6	-,067	-,167	-,006	,383	-,312	1,000	,109	,296
ITEM7	,127	,420	,479	,312	,169	,109	1,000	,178
ITEM8	,324	,094	,004	,264	,383	,296	,178	1,000
ITEM9	,325	,261	-,236	,072	,353	,176	,423	,422
ITEM10	,324	,215	,043	,267	,484	-,140	,136	,594
ITEM11	,595	,442	-,302	,081	,384	-,063	-,006	,440
ITEM12	,582	,480	-,310	,044	,279	-,075	,232	,231
ITEM13	,550	,208	-,092	,305	,170	,219	,184	,420
ITEM14	,460	,403	-,139	,039	,350	,024	,209	,349
ITEM15	,410	-,051	,110	,178	,541	-,174	,066	,401
ITEM16	,430	,158	-,095	,234	,430	,185	,023	,485
ITEM17	,407	-,078	-,131	,288	,080	,578	,174	,352
ITEM18	,434	-,026	,089	,561	,310	,153	,380	,511
ITEM19	,279	,148	,277	,535	,236	,380	,459	,442
ITEM20	,407	,181	-,087	,286	,017	,455	,391	,361
ITEM21	,305	,396	,018	,280	,091	-,071	,463	,133
ITEM22	,190	,045	-,282	-,225	,433	-,022	-,243	,239
ITEM23	,095	-,020	-,194	-,010	,219	,315	-,239	,256
ITEM24	,247	,097	-,192	-,038	,301	,205	-,050	,204

	ITEM 9	ITEM 10	ITEM 11	ITEM 12	ITEM 13	ITEM 14	ITEM 15	ITEM 16
ITEM1	,325	,324	,595	,582	,550	,460	,410	,430
ITEM2	,261	,215	,442	,480	,208	,403	-,051	,158
ITEM3	-,236	,043	-,302	-,310	-,092	-,139	,110	-,095
ITEM4	,072	,267	,081	,044	,305	,039	,178	,234
ITEM5	,353	,484	,384	,279	,170	,350	,541	,430
TEM6	,176	-,140	-,063	-,075	,219	,024	-,174	,185
ITEM7	,423	,136	-,006	,232	,184	,209	,066	,023
ITEM8	,422	,594	,440	,231	,420	,349	,401	,485
ITEM9	1,000	,246	,417	,604	,160	,345	,018	,215
ITEM10	,246	1,000	,637	,552	,456	,421	,427	,635
ITEM11	,417	,637	1,000	,788	,546	,519	,320	,637
ITEM12	,604	,552	,788	1,000	,517	,569	,232	,537
ITEM13	,160	,456	,546	,517	1,000	,480	,474	,420
ITEM14	,345	,421	,519	,569	,480	1,000	,264	,288
ITEM15	,018	,427	,320	,232	,474	,264	1,000	,286
ITEM16	,215	,635	,637	,537	,420	,288	,286	1,000
ITEM17	,403	-,061	,103	,183	,530	,370	,000	,247
ITEM18	,347	,395	,203	,240	,473	,134	,604	,337
ITEM19	,308	,400	,285	,338	,781	,327	,353	,331

ITEM20	,493	,037	,297	,459	,519	,510	,253	,159
ITEM21	,319	,303	,368	,557	,587	,160	,418	,124
ITEM22	-,088	,276	,193	,098	,000	,205	,133	,520
ITEM23	-,084	,130	-,061	-,117	,000	,083	,089	,287
ITEM24	,078	,079	-,026	-,030	,000	,159	,125	,094

	ITEM 17	ITEM 18	ITEM 19	ITEM 20	ITEM 21	ITEM 22	ITEM 23	ITEM 24
ITEM1	,407	,434	,279	,407	,305	,190	,095	,247
ITEM2	-,078	-,026	,148	,181	,396	,045	-,020	,097
ITEM3	-,131	,089	,277	-,087	,018	-,282	-,194	-,192
ITEM4	,288	,561	,535	,286	,280	-,225	-,010	-,038
ITEM5	,080	,310	,236	,017	,091	,433	,219	,301
TEM6	,578	,153	,380	,455	-,071	-,022	,315	,205
ITEM7	,174	,380	,459	,391	,463	-,243	-,239	-,050
ITEM8	,352	,511	,442	,361	,133	,239	,256	,204
ITEM9	,403	,347	,308	,493	,319	-,088	-,084	,078
ITEM10	-,061	,395	,400	,037	,303	,276	,130	,079
ITEM11	,103	,203	,285	,297	,368	,193	-,061	-,026
ITEM12	,183	,240	,338	,459	,557	,098	-,117	-,030
ITEM13	,530	,473	,781	,519	,587	,000	,000	,000
ITEM14	,370	,134	,327	,510	,160	,205	,083	,159
ITEM15	,000	,604	,353	,253	,418	,133	,089	,125
ITEM16	,247	,337	,331	,159	,124	,520	,287	,094
ITEM17	1,000	,335	,553	,588	,000	-,039	,160	,141
ITEM18	,335	1,000	,618	,447	,519	-,018	,068	,039
ITEM19	,553	,618	1,000	,526	,576	-,180	-,030	-,089
ITEM20	,588	,447	,526	1,000	,548	-,014	-,124	-,026
ITEM21	,000	,519	,576	,548	1,000	-,172	-,348	-,238
ITEM22	-,039	-,018	-,180	-,014	-,172	1,000	,547	,457
ITEM23	,160	,068	-,030	-,124	-,348	,547	1,000	,879
ITEM24	,141	,039	-,089	-,026	-,238	,457	,879	1,000