

Objective and subjective assessment of declarative tactical knowledge among young female basketball athletes throughout a season

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Abstract:

Introduction: In sports declarative tactical knowledge (DTK) refers to the athlete's ability to verbalize or narrate the facts relevant to task performance, referred to as “knowing what to do” in a given game situation. Understanding this variable is a relevant factor for progression of content in training sessions. **Purpose:** This study aimed to assess DTK levels among young basketball athletes in U14 and U17 categories throughout a season, which we objectively and subjectively obtained through participation of coaches and athletes (self-assessment). **Materials and methods:** Sixty-seven female basketball athletes (average age, 14.6±1.2) considering U14 (n=29) and U17 (n=38), and seven coaches (average age, 32.7±7.9) from respective teams participated in the study. The DTK Test in Basketball was used for objectively assessing DTK. The Subjective Assessment of the Coach (SAC) and Athlete's Subjective Self-Assessment (ASS) were used for promoting subjective assessment. **Results:** Our results demonstrated significant differences in DTK levels regarding SAC and ASS throughout the season. Furthermore, most of the coaches overestimated DTK levels of their athletes in both categories and were more precise in the SAC in the U17 category. The ASS showed that the players overestimated themselves in both categories at all moments throughout the season. **Conclusions:** It is concluded that most of the coaches had difficulties in recognizing the DTK level of their U14 and U17 athletes, as well as the athletes, as they overestimated their knowledge when assessed subjectively. Thus, coaches and athletes were clearly found to have difficulty acknowledging tactical potential, important construct in the assessment of tactical ability.

Key Words: Tactic, sport, performance assessment, training, athletes.

Introduction

In the area of Sports Science, especially when we refer to team sports, current research aims to understand the interrelationships between the capabilities of sports performance, particularly in the way they manifest themselves in play (Marios et al., 2020). With the evolution of sports, it has been observed that in recent years, the tactical skills have shown interest in researchers as a way to assess and monitor sports teaching-learning-training process in soccer (Andrade et al., 2021; Praça et al., 2017; Rodrigues et al., 2020; Américo et al., 2016), handball, (Ribeiro et al., 2021; Amaral et al., 2018), volleyball (Fonseca et al., 2019; Mazzardo et al., 2018), and tennis (Aburachid et al., 2018). In this regard, tactic is related to the knowledge of the athlete and game logic, named as tactical knowledge evaluated here in basketball studies (Jiménez et al., 2009; Greco et al., 2010; Bourbousson et al., 2010; Leite et al., 2011; Gray & Sproule, 2011; Tallir et al., 2012; Folle et al., 2017; Pagé et al., 2019), which is an important requisite to measure performance in sport disciplines and it is considered a predictor of success in invasion team sports (Kannekens et al., 2011).

The simultaneous participation of the players in the same space require speed in the tactical comprehension of the game, better understanding and use of the information, better anticipation of their opponent actions, better interpretation of situational actions, better speed in decision-making (DM) for the resolution of the problem found in the game, and better emotional control in face of adverse events (Ericsson, 2003; Mann et al., 2007). In this perspective, one of the constructs we used to assess tactical knowledge of the athletes was the declarative tactical knowledge (DTK) (Mitchell et al., 2006). The DTK refers to knowledge that athletes can verbalize regarding skills and game strategies (Gameiro et al., 2021), and it is obtained during sports practice and improved along with time of practice and experience in high-performance competitions (Aburachid et al., 2014; Kannekens et al., 2011; Serra-Olivares et al., 2015). In basketball, Folle et al. (2017) and Jiménez et al. (2017) show that amateur athletes to winning teams are those who have high levels of tactic capacities.

The tactical skill assessment occurs, in various sports, through the use of validated instruments to measure DTK (Gameiro et al., 2021). The objective assessment happens with results obtained through

quantitative tests and protocols (Aburachid et al., 2014; Kannekens et al., 2011; Serra-Olivares et al., 2015). The subjective assessment happens through the attribution of scores or self-reports provided by the comprehension of the athletes, also known as metacognitive assessment (Chatzipanteli et al., 2015; Theodosiou et al., 2008). Instruments for objective and subjective assessment of DTK of athlete were used in previous studies in tennis (Aburachid et al., 2018), soccer (Aburachid et al., 2013; Dugdale et al., 2020), futsal (Silva et al., 2014) and volleyball (Mazzardo et al., 2018). However, there were no studies analyzing DTK level with objective and subjective assessments in basketball. Therefore, this study aims to fill this gap in literature by assessing female basketball athletes during a sports season in sequential training categories.

Thus, the aim of this study was to objectively and subjectively assess the DTK level in female basketball athletes belonging to U14 and U17 categories throughout a sports season. This study moves forward longitudinally (throughout a season) in order to assess DTK, which allows the use of objective and subjective tools as resources to monitor and control DTK of athletes at different moments of the season. It also becomes important to mention that this is the first study to evaluate a subjective assessment of the coach and the athlete (self-report) in order to assess DTK level of these basketball athletes. Good knowledge about basketball was reported by Sniras and Uspuriene (2019) as the third most important skill coaches should possess. Also this kind of analysis over the course of a season can contribute to evaluate the failure or the success of the participating teams (Antonis et al., 2019; Matulaitis et al., 2021; Marković & Milošević, 2023). We hypothesize that coaches may demonstrate higher perception towards the subjective assessment of the athletes due to the follow up of the teaching-learning-training process, and that athletes may show difficulties in having a precise self-report regarding tactical skills as a consequence of a lower DTK level of the age range we investigated.

Material & methods

Participants

The sample was composed of 67 athletes (average age of 14.6±1.2), of seven female basketball amateur sports teams, participants of the 2018 sports season in the state of Mato Grosso, Brazil. They were competing on a state level (winning teams would represent the state on a national level) in U14 (n=29) and U17 (n=38) categories. Team coaches (n=7; average age of 32.7±7.9) also participated in this study, with an average experience in basketball training of 11.1 (±8.1) years, national competitive (n=6) and international experience (n=1), academic background of specialists (n=4) and masters (n=3). The sample was probabilistically determined and we calculated its sample size from a finite population, proportionally stratified (Barbetta, 2002), according to the number of athletes who participated in the previous 2017 season (n=72). We defined a statistical power of 95% and 5% of alpha, and obtained a minimum necessary number of 61 individuals. In order to participate in this study, legal representatives of the athletes signed the free and informed consent form, and the athletes signed the informed assent one. Inclusion criteria listed were: (1) athletes and coaches belonged to scholar or amateur sport teams and (2) were properly enrolled in basketball competitions in the state of Mato Grosso during 2018 season, considering U14 or U17 categories. We excluded athletes who (1) did not take part in any of the data collation and/or who (2) did not respond to one or more instruments correctly.

Instruments

We utilized the Declarative Tactical Knowledge Test from Basketball (TCTD:Bb) (Rosso et al., 2020) considering the objective analysis of the DTK level. The TCTD:Bb makes it possible to identify the DTK level through real game situation scenes. The test is composed of two anchoring scenes (used by the researcher to explain the test) and 14 scenes to be used for the assessment. After projecting each of the scenes, the image stills for five seconds and, during this time, the one assessed must, on an answer sheet, respond which is the best decision to solve that situation (DM) and identify which signs in the scene (perception) led them to make that decision. Scoring occurs hierarchically as described: the 1st option is the most correct related to DM and perception = 100 points; the 2nd option = 75 points; the 3rd option = 50 points; the 4th option = 25 points; and a mistake, comprehending zero points. We consider the total score as the level of the DTK of the participants (Rosso et al., 2020). The DTK score was relativized from zero (0) to ten (10) from the total score in which 10 = 140 points (the maximum score of the test). We utilized the Subjective Assessment of the Coach (SAC) (Aburachid et al., 2018) considering the subjective analysis of the DTK level and the Athlete's Subjective Self-assessment (ASS), which consists of a DTK assessment of the coaches and athletes, respectively. We obtained SAC using a scale from zero (0) to ten (10) points, in which ten points represented the maximum DTK level reached in a discipline. With this instrument, the coach assesses each one of the athletes in relation to the construct. In the ASS, the athletes are the ones who assess themselves in relation to DTK, using the same scale.

Procedures

This work comprehends an ex post facto descriptive observational study. The study respected the norms established by the National Health Council (Res. CNS 196/96) and the 1975 Declaration of Helsinki for research with human beings, and it was approved by the Ethics Research Committee of the Federal University of Mato Grosso under protocol number 2.327.700/2017. The collation happened three times throughout the 2018 sports season, and it happened once each competitive event (start, middle and end of season), before the beginning of

its competitions. For data collation, athletes and team coaches (one team at a time with its respective coach) were allocated in a classroom with all necessary conditions and no external interference. Students sat at their own school desk chairs. On those desks were the demographic questionnaire (to obtain information on sample characterization), the ASS form, the TCTD:Bb answer sheet, and a pen. On those determined for the coaches were the demographic questionnaire, the SAC form, and a pen. We did not allow any communication among participants and they filled in the forms as the order described. Athletes received two sheets of paper in order to fill in the ASS. The first one contained protocol explanation, the concept description of the construct (DTK) and examples of game situations that elucidated practice. In the second one there was a table to be graded (representative concept) according to their believed DTK level. To fill the TCTD:Bb answer sheet (Rosso et al., 2020), we projected images using a high definition data show projector, XGA screen resolution of 2x2 meters, and dimensions of 3.04x2.28 meters. We would present the scenes and, at a certain time, pause for five seconds. At this time, athletes should observe and picture themselves in the same function as the athlete with the ball in the video, and then write, on their answer sheet, what they would do to solve the situation presented (1st option of answer to solve the problem = DM) and further information (referring to relevant perceived signs that would take to the decision made = perception). Thus, our aim was to analyze DTK of the athletes considering DM and the perception of the environment. To fill in the SAC, coaches also received two sheets of paper. The first one was as athletes did in ASS, and the second one contained a spreadsheet with each name of athlete, their team name, and cells to grade the estimate DTK level of the athletes. Subsequently, we performed the correction of the answers according to the TCTD:Bb score and the one obtained from the subjective analysis instruments (ASS and SAC).

Statistical analysis After verifying the normality of the data by the Kolmogorov-Smirnov test ($p > 0.05$), the DTK grade obtained from the TCTD:Bb was relativized by the SAC and ASS grades. Data were presented in a descriptive way (mean, standard deviation, standard error, absolute, and relative frequency). For the inferential analysis, we used the two-way ANOVA with the Bonferroni post hoc test and used significance of $p < 0.05$.

Results

Table 1 presents mean DTK values of the athletes, SAC and ASS by categories and teams, as well as different moments throughout the season. Ranking was determined from standard error value calculation, which generated an interval between minimum and maximum limit, in order to determine the difference between relativized DTK grade and SE. This calculation collaborated to assess reliability and enabled us to identify if the assessment was within (approximates), under (underestimates), or over (overestimates) the interval. At the end of the season, there was no data from coach #3 and coach #7 and their respective teams for they were absent at this stage of the competition.

Table 1. Mean values and DTK classification of female basketball, SAC and ASS during the season.

	Start				Middle				End			
	DTK		SAC		DTK		SAC		DTK		SAC	
	M	M	SE (low-up)	Classification	M	M	SE (low-up)	Classification	M	M	SE (low-up)	Classification
U14												
C 1	1.8	4.8	(0.57-3.04)	1	3.4	4.4	(2.74-4.09)	1	4.1	4.9	(3.12-5.14)	2
C 2	3.7	4.1	(3.21-4.13)	2	3.4	6.1	(2.78-4.01)	1	2.7	6.1	(1.36-4.09)	1
C 3	0.7	7.9	(2.70-5.67)	1	2.4	6.5	(4.98-7.12)	1	--	--	--	--
U17												
C 4	4.2	7.4	(2.99-5.38)	1	6.0	7.1	(4.98-7.12)	2	4.1	7.0	(2.95-5.35)	1
C 5	5.2	4.3	(4.25-6.18)	2	4.9	5.2	(4.14-5.69)	2	5.2	5.7	(4.71-5.69)	2
C 6	4.5	4.0	(3.89-5.16)	2	3.7	5.7	(3.05-4.40)	1	3.8	6.2	(3.18-4.43)	1
C 7	1.0	6.0	(0.42-1.59)	1	2.7	5.6	(2.24-3.08)	1	--	--	--	--
	DTK		ASS		DTK		ASS		DTK		ASS	
	M	M	SE (low-up)	Classification	M	M	SE (low-up)	Classification	M	M	SE (low-up)	Classification
U14												
T 1	1.8	7.6	(0.87-2.74)	1	3.4	6.0	(2.75-4.08)	1	4.1	6.0	(3.23-5.03)	1
T 2	3.7	3.4	(2.72-4.62)	2	3.4	5.2	(2.74-4.05)	1	2.7	5.4	(2.02-3.42)	1
T 3	0.8	5.0	(0.54-3.74)	1	2.5	5.5	(0.00-3.50)	1	--	--	--	--
U17												
T 1	4.2	4.4	(3.36-5.01)	2	6.0	6.7	(5.33-6.76)	2	4.1	5.6	(3.26-5.03)	1
T 2	5.2	6.1	(4.21-6.23)	2	4.9	6.1	(4.29-5.55)	1	5.2	5.9	(4.56-5.84)	1
T 3	4.5	7.1	(3.76-5.29)	1	3.7	6.6	(3.23-4.23)	1	3.8	6.2	(2.77-4.84)	1
T 4	0.7	5.9	(0.63-1.50)	1	3.6	2.5	(3.69-7.31)	1	--	--	--	--

C: coach; T: team; DTK: declarative tactical knowledge; SAC: Subjective Assessment of the Coach; ASS: Athlete's Subjective Self-assessment; M: mean; SE (low-up): Standard Error (lower-upper limit); Classification: 1. Overestimates, 2. Approximates.

In the U14 category, coaches, most of the time, overestimated the DTK of athletes and approximated results only twice. In the U17 category, coaches approximated, more often and at different moments, their subjective assessment results of the DTK of athletes.

In Table 2, there was a DTK comparison, using the two-way ANOVA, considering the ASS and the SAC throughout the season divided into U14 and U17 categories and team classification. At the end of the season, there was no data from one U14 and one U17 team because of their absence at this stage of the competition.

Table 2. Comparison of relativized DTK with the assessment of coaches and athletes.

Moment	CAT	TEAM	DTK		ASS		SAC		F	p	
			M	SD	M	SD	M	SD			
Start	U14	1	1.804	0.530	7.600 ^a	0.455	4.750 ^{bc}	0.481	32.117	<0.001*	
		2	3.673	0.593	3.375	0.509	4.125	0.538	0.569	0.569	
		3	0.729	0.506	5.773 ^a	0.434	7.909 ^{bc}	0.459	57.910	<0.001*	
	U17	1	4.188	0.559	4.444	0.480	7.611 ^{bc}	0.507	15.467	<0.001*	
		2	5.218	0.559	6.111	0.480	4.278 ^c	0.507	3.758	0.029*	
		3	4.523	0.559	7.111 ^a	0.480	4.000 ^c	0.507	11.678	<0.001*	
		4	1.000	0.506	5.955 ^a	0.434	8.000 ^{bc}	0.459	55.118	<0.001*	
	Middle	U14	1	3.414	0.351	6.05 ^a	0.414	4.4 ^c	0.451	13.826	<0.001*
			2	3.391	0.393	5.187 ^a	0.463	6.125 ^b	0.504	12.037	<0.001*
			3	2.43	0.335	6.455 ^a	0.395	8.045 ^{bc}	0.43	73.266	<0.001*
		U17	1	6.044	0.37	6.667	0.437	7.111	0.475	1.959	0.150
			2	4.911	0.37	6.056	0.437	5.222	0.475	2.363	0.103
3			3.711	0.37	6.556 ^a	0.437	5.667 ^{bc}	0.475	16.034	<0.001*	
4			2.659	0.335	5.636 ^a	0.395	7.636 ^{bc}	0.43	52.625	<0.001*	
End		U14	1	4.129	0.548	6.05 ^a	0.497	4.9	0.542	0.417	0.023*
	2		2.723	0.613	5.375 ^a	0.556	6.125 ^{bc}	0.606	10.173	<0.001*	
	U17	1	4.147	0.578	5.611	0.524	7 ^b	0.571	6.438	0.004*	
		2	5.198	0.578	5.889	0.524	5.667	0.571	0.506	0.607	
		3	3.804	0.578	6.167 ^a	0.524	6.222 ^{bc}	0.571	7.276	0.002*	

DTK: declarative tactical knowledge; SAC: Subjective Assessment of the Coach; ASS: Athlete's Subjective Self-assessment; CAT: category; M: mean; SD: standard deviation; F: variation between means; p: significance value; a: p<0.05 DTK to ASS; b: p<0.05 DTK to SAC; c: p<0.05 ASS to SAC; *: p≤0.05.

By analyzing Table 2 data, after Bonferroni post hoc, we verified that there are statistically significant differences between the performances obtained in the DTK combined with ASS and SAC in each moment of the season for both categories we investigated. The most frequent differences were DTK combined with ASS, and then DTK combined with SAC.

Table 3 compares SAC considering the final classification obtained in the sports season by team and category. At the end of the season, there was no data from one U14 and one U17 team because of their absence at this stage of the competition.

Table 3. Comparison of the final classification of the season with SAC by category and teams.

Cat	Moment	Classification in competition								F	p	Classification effect
		1 st place		2 nd place		3 rd place		4 th place				
		M	SD	M	SD	M	SD	M	SD			
U14	Start	4.75	0.48	4.13	0.54	7.91	0.46	--	--	17.80	<0.000*	3° x 1° e 2°
	Middle	4.40	0.45	6.13	0.50	8.05	0.43	--	--	17.17	<0.000*	1° x 2° x 3°
	End	4.90	0.54	6.12	0.61	7.95	0.45	--	--	2.274	0.139	
U17	Start	7.61	0.51	4.28	0.51	4.00	0.51	8.00	0.46	18.70	<0.000*	1° x 2° e 3°; 4° x 2° e 3°
	Middle	7.11	0.48	5.22	0.48	5.67	0.48	7.64	0.43	6.31	<0.001*	1° x 2°; 4° x 2° e 3°
	End	7.00	0.57	5.67	0.57	6.22	0.57	--	--	1.376	0.264	

SAC: Subjective Assessment of the Coach; M: mean; SD: standard deviation; F: variation between means; p: significance value; *: p≤0.05.

Table 3 results demonstrate that SAC presents statistically significant differences at the start and mid-season, as well as in final ranking in both categories among the best teams in the classification, when compared to the worst ones. However, at the end of the season there were no differences in any of the categories we investigated.

Dicussion

The aim of this study was to assess the DTK level of female basketball players belonging to U14 and U17 categories throughout the 2018 sports season, which was objectively and subjectively obtained by their coaches and themselves (self-assessment).

Regarding the Subjective Assessment of the Coach (SAC), results showed that, in both categories (U14 and U17), most of the coaches we investigated ($n=6$; 85.7%) overestimated the DTK of their athletes in different moments (start, middle, and end) and there were no results of underestimation. These results corroborate to the ones presented by Silva et al. (2014) that assessed U20 female futsal athletes and demonstrated that coaches overestimated DTK level of losing teams and underestimated winning teams during matches.

Nonetheless, previous studies found different results (Aburachid et al., 2018; Aburachid et al., 2013; Mazzardo et al., 2018). Aburachid et al. (2018) demonstrated that tennis coaches underestimated the tactical level of 48.6% of their athletes aged between 11 and 18 years old, including male and female athletes. Regarding soccer, coaches underestimated 89.6% of their U14, U15, U17, and U20 DTK level of male players (Aburachid et al., 2013). Mazzardo et al. (2018), in volleyball, demonstrated that coaches underestimated the DTK of 69% of their young athletes, including male and female athletes.

The overestimation of DTK levels presented by the subjective assessment of the coaches might be related to professional experience differences, time dedicated to the teams, variations among investigated teams related to categories, disciplines, gender, which hampers the assessment of the coaches regarding tactical skills of their teams (Silva et al., 2014). The understanding of the tool designed for the subjective assessment can also present a limiting factor, as the coaches might not understand skills that subsidize tactical skills, which can, thus, misrepresent the understanding of the construct (DTK) we assessed. That might aggregate other competences to the score of the athletes, such as technical skills and competitive results (Aburachid et al., 2018).

In relation to analyses divided into categories and considering frequency of assessments by coaches, we observed that coaches overestimated U14 teams six times (75%), concerning the DTK level of their athletes when compared to scores obtained with the DTK test. All coaches assessed their athletes like this during mid-season. Only twice (25%) did coaches approximate the objective assessment, once at start and another at the end of the sports season. We also identified a disparity in SAC in relation to the scores obtained by the teams in the objective test of DTK, which was similar to the findings conducted by Silva et al. (2014), in which coaches demonstrated they did not have knowledge on the real tactical potential of their athletes and overestimated results.

The U17 category received better subjective assessment by their coaches as there were six overestimated assessments (54.5%) throughout the season, and five (45.5%) approximate assessments to the results obtained by athletes in the DTK test. We highlighted results presented by coach #5, which was near the ASS results considering the three moments of collation during season. Coach #5 had a 24-year experience in basketball, international competitive experience and higher academic degree (master) compared to the others, which might have influenced the results obtained.

These results might be linked to a low use of DTK assessment throughout the teaching-learning-training process, to the experience of the coach in the discipline and to the low importance given to tactical skills by less experienced coaches. Leite et al. (2011) emphasized that more experienced coaches spend more time in tactical training and less experienced coaches prioritize technical training. Gameiro et al. (2021) highlighted the need of instruments and tools that enable an initial assessment, aiming to pay special attention to the previous knowledge of their students, as well as formative assessments throughout the entire learning process.

ASS-wise, we observed that most of the athletes investigated by teams ($n=4$; 57.1%), during the three moments of the season, overestimated their DTK level in relation to the objective assessment result. Those results were similar to the ones in the study conducted by Aburachid et al. (2018) on tennis, in which 75% of tennis players overestimated their own tactical knowledge. Such results might be associated with factors such as comprehension of the protocol, investigated age range, different competitive experiences and time of experience in the discipline as well.

ASS works as an alternative tool that intends to measure self-perception of athletes on the competence they acquired or have been acquiring over training process, also called metacognitive assessment.

Furthermore, the athletes might have low comprehension of tactical skills, a directly related factor to methodological characteristics of the teaching-learning-training process (Gamero et al., 2021). In their study on high school basketball players, Chatzipanteli et al. (2015) found superior statistical differences in the metacognitive assessment concerning the experimental group that received the Teaching Games for Understanding (TGfU) method, facing the control group that received an approach based on the teaching of the

technique (considered as the traditional method), after four weeks of intervention. In addition, Theodosiou et al. (2008) assessed metacognition of 510 students who took part in Physical Education classes in Greece and found better results for the DTK and problem solution for girls in comparison to boys and for younger students facing the older ones. Nonetheless, the teaching method was not informed in this second study. They used the Metacognitive Process in Physical Education Questionnaire in both studies, which includes six items concerning the DTK assessment.

Leite et al. (2011) and Silva et al. (2021) emphasize that the teaching of tactics in sports is used as a marginal objective in the teaching-learning-training process, due to the fact that most traditional teaching methodologies emphasize technique as the main competence for the education of the athletes. Thus, there is a predominance in tactical training concerning offensive fundamentals when compared to defensive fundamentals given by basketball coaches to U14 e U17 categories (Campos-Vieira et al., 2020). Leonardi et al. (2017) and Cañadas et al. (2013) highlight the importance of assessment instruments that dialogue with new methodological directions of Sport Pedagogy demonstrating uses of the same content of pedagogical knowledge, through feedback and self-assessment, which obtains better assessment of educational practice.

This study herein presents limitations, such as the specificity of the sample towards gender (female athletes), the competitive level and two age ranges (U14 and U17). Besides, we did not assess variables that might influence levels of DTK as an experience and the type of training and visual behavior of the athletes. Thus, we emphasize that our results must be understood carefully and we recommend new studies to explore the relation between the DTK assessed objectively and subjectively in both genders, different age ranges and competitive levels, and expect more funding and discussions on possible relations between these assessments and performance.

In a practical way, this present study assists coaches, athletes and other professionals in Sports Science to think and incorporate new processes on the assessment of the tactical knowledge with the aid of tools that enable comprehension of athletes and coaches in a processual and continuous way. Therefore, subjective assessing tools of DTK, for instance, are an interesting resource to be used in formative assessment and the tactical teaching-learning-training process in sports.

Conclusions

We have concluded that most of the coaches and female U14 and U17 basketball players overestimate DTK level in subjective assessments towards an objective assessment, according to the results in this present study. It reinforces that coaches and athletes are not able to precise their real DTK levels, which is an important construct of tactical skill assessment.

Detailed information about teams and athletes regarding the variables that influence tactical-technical behavior is important for coaches in conducting content progression in the basketball teaching-learning-training process and therefore needs investigation in different contexts.

We recommend further studies on basketball in order to achieve more consistency regarding results on a national level, as well as proceeding with assessments in other categories, gender, different time of practice and experience. The application of different instruments of objective and subjective assessment of DTK must also be performed in different situations of training and competition, being used as a type of assessment, monitoring, and control of the teaching-learning-training process in favor of evolution and a higher stimulation of tactical skills of athletes.

Conflicts of interest - The authors declare no conflicts of interest.

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