

# Creativity and Tactical Skill Profiles of Handball Players

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## **ABSTRACT**

The purpose of this study is to examine the creativity and tactical skill levels of the athletes ( $n = 259$ ) who actively continued their sports life in handball in Turkey in the 2020–2021 season. In order to determine athlete's creativity levels, we used the "Creativity Questionnaire for Athletes" and for tactical skills, we used the "Tactical Skills Questionnaire for Sports". We examined the relationships between these two dependent variables and the independent variables of gender, sports age and league category. As a result of the regression analysis, it was determined that the creativity level of the athletes was predicted by tactical skills at a level of approximately 74%. In terms of the variable of the handball players' years of playing handball, a low positive correlation was found in the sub-dimensions of the Tactical Skills Questionnaire. This relationship is statistically significant in other sub-dimensions, except for the Knowledge of Ball Movements sub-dimension of the Tactical Skills Questionnaire. The same variable was examined in terms of the creativity level and a low level of positive correlation was found. This relationship was found to be statistically significant. Appropriate training settings and environments should be designed in order to develop the creativity skills of the athletes. The similarity of the training environment to real competition conditions can greatly contribute to the development and use of creativity and tactical skills in sports.

**Keywords:** creativity, tactical skills, handball

## INTRODUCTION

The ability of an artist, composer, and scientist to discover or develop something new in their field is seen as a basic quality (Bohm, 2005, pp. 2). The same measure is sought and desired in a teacher, politician or an administrator. Just like these, creativity is a sought-after phenomenon in the nature of sports and athletes. As a matter of fact, it is this creative, forward-looking and exciting continuity of sports that keeps its place in our lives alive. According to Craith (2009), creativity is expressed as having the quality or power of an individual to express himself in an original way. In another definition, creativity is stated as the ability to produce an original (new) and useful (appropriate) work (Sternberg, 1988; Sternberg, & Lubart, 1999).

Creativity requires both originality and effectiveness. Something must be exceptional or distinctive in order to qualify as original. Otherwise it is ordinary. However, if an original (novel) idea or product is not effective, it cannot take its creative name on its own (Runco, & Jaeger, 2012). Therefore, the creativity level of an idea/product necessitates it to be both new and useful/appropriate.

Although the concept of creativity is often thought to be related only to art, it is also a phenomenon needed in all areas of life, from science (MacKinnon, 1963), religion to sport (Bohm, 2005, pp. 78). Creativity has been one of the important concepts that have developed in recent years and on which many researches have been made. Another area where this concept is the subject of research is sports sciences (Furley, & Memmert, 2015; Hristovski et al., 2011; Hristovski et al., 2012; Vaughan et al., 2019). Creativity is an extremely important trend in everyday life (Runco, 2014) as well as in environments where sportive performance is shown (Memmert, 2015). Definition of creativity in sports sciences; It can be done as the ability to make variable, flexible and extraordinary decisions in complex game situations (Memmert, & Roth, 2007). The ability to think creatively in sports is highly desired by coaches and trainers (Memmert, Baker, & Bertsch, 2010), and it can also be visually impressive by the audience.

From the perspective of the sport-specific interpretation of creativity; creativity arises only when there are offensive plays (as the Attacker initiates the action) during the match. Creativity is not expected in defensive situations, as the defender must wait for the opponent's move and react accordingly (Memmert, Baker, & Bertsch, 2010). From this point of view, the concept of creativity plays an important role in sports branches with defensive and offensive variations, namely in team games (Roca, & Ford, 2021). In the literature, it is stated that the concept of creativity in sports cannot be thought independently with convergent and divergent thinking (Guilford, 1959; Memmert, 2011). Convergent thinking (tactical intelligence) is expressed as the ability to find the ideal solution to a certain problem in a certain situation at the behavioral level in sports. Divergent thinking (tactical creativity) is defined as the ability to find unusual, innovative, rare and even unique solutions specific to the relevant sport at the behavioral level (Memmert, 2011). It is stated that participation in various sports and physical activities and gaining experience in different fields for a few years are ideal for the development of creativity (Csikszentmihalyi, 1999; Dietrich, 2004; Runco, 2007). The fact that a creative movement to be applied in the field of sports is effective and at the same time has a positive effect on the result makes the concept of creativity very important.

Another dependent variable of the research is tactical skills. It is stated that in order to perform at a high level in competitive sports, the athlete must have advanced tactical skills along with technical and physiological parameters (Helsen, & Starkes, 1999; Nougier, & Rossi, 1999; Williams, & Ford, 2013). Tactical skills are seen in anticipation sports where the athletes compete against the opponent in the same action area during the game. While trying to reach the goal by entering the field of the opposing team, the players also have to adapt to the complex and rapidly changing game conditions. In this sense, tactical skill, which is a cognitive skill, refers to the ability of players to adapt to the flow of the game and the circulation of the ball by performing the right movements at the right time in anticipation sports (basketball, handball, football, ice hockey, etc.) (Elferink-Gemser et al., 2004; Grehaigne & Godbout, 1995).

The level of creativity and tactical skills of the players can be very effective in terms of winning the game in the face of various environmental factors and variability in the areas where sportive performance is exhibited. Accordingly, the fact that the players are experienced in offensive games such as basketball, handball and football, where original solutions and tactical skills come to the fore, increases the applicability of these two variables. Thus, players' capacity to cope with unexpected situations can increase (Memmert, Baker, & Bertsch, 2010). The purpose of this study is to evaluate handball player's creativity and tactical skills levels selected by their gender, sport age, national team experience and league levels. For this purpose, the relations between the creativity and tactical skills of the handball players with some variables were examined.

## **METHOD**

### ***Research Model***

In this study, which was designed in a relational screening model, the relationships between the tactical skills and creativity levels of individuals who continue their sports life as handball players were examined. In this model, it is aimed to determine the existence and/or degree of co-variance between two or more variables (Creswell, & Creswell, 2017; Fraenkel, Wallen, & Hyun, 2012).

### ***Participants***

Participants were selected by convenient sampling method, considering easy accessibility and affordability (Gravetter & Forzano, 2012). As this study was conducted in Turkey, having a national experience in sport gives plenty of opportunities to athletes and it is an important matter. It was chosen the Super League and 1st League category for using the national team experience as a variable in this study is the assumption that these athletes are in an advantageous position in terms of social status and that might affect their cognitive skills. No limitations were determined except that the athletes participating in the research were licensed athletes in the Turkish Handball Super League and 1st League and were over the age of 18.

### ***Research Procedure***

The two of the questionnaires (Tactical Skills Questionnaire and Creativity Questionnaire for Athletes) have been uploaded to Google Forms and the link of the questionnaires had been sent to athletes by email. We reached out handball players through their team captains. An explanation

were also attached in the link about the importance of the research and athletes were informed how to fill the questionnaires.

### **Data Collection Tools**

#### **Tactical Skills Questionnaire for Sports (TSQ)**

The Tactical Skills Questionnaire was developed by Elferink-Gemser, et al., (2004) to evaluate tactical skills in sports. Its adaptation to Turkish was made by Yarayan, Esenturk, and Ilhan (2019). The original form consists of 4 sub-dimensions and 22 items, namely Positioning and Decision Making (9 items) ( $\alpha=0.89$ ), Knowledge of Ball Movements (4 items) ( $\alpha=0.75$ ), Knowing the Opponents (5 items) ( $\alpha=0.74$ ), and Acting in Changing Situations (4 items) ( $\alpha=0.72$ ). The inventory, which has a 6-point Likert type structure, is “Very Poor” (1), “Poor” (2), “Average” (3), “Good” (4), “Very Good” (5) and “Excellent” (6) is scored in the format. High scores indicate that the tactical skills of the athlete are good. An important element of anticipation sports is possession of the ball. For this reason, the questionnaire distinguishes tactical moves with the ball from tactical moves without the ball. While the sub-dimensions of Positioning and Decision-Making in the questionnaire and Knowledge of Ball Movements are related to the skills during the attack when having the ball, the sub-dimensions of Knowing the Opponents and Acting in Changing Situations are related to the tactical skills during the defense in the off-ball game.

#### **Conceptual Explanations of Sub-Dimensions of Tactical Skills Inventory in Sports:**

*Positioning and Decision Making (Attacking) (PDM):* This dimension, which is related to the tactical skills to take a good position when having the ball, focuses on perceived procedural knowledge and choosing the right actions during the game (Elferink-Gemser et al., 2004).

*Knowledge of Ball Movements (Attacking) (KBM):* This dimension, which is related to tactical skills when the ball is in possession, perceives declarative knowledge and focuses on game knowledge (Elferink-Gemser et al., 2004).

*Knowing Opponents (Defense) (KO):* This dimension, which is related to the tactical skills related to the movements of the opponents in the ball game, perceives the declarative knowledge and focuses on the game knowledge (Elferink-Gemser et al., 2004).

*Acting in Changing Situations (Defense) (ACS):* This dimension, which is related to tactical skills related to different situations in the ball game, focuses on perceived procedural knowledge and choosing the right actions during the game (Elferink-Gemser et al., 2004).

#### **Creativity Questionnaire for Athletes (CQA)**

The Creativity Questionnaire for Athletes was developed by Gungor, et al., (2020) in Turkish. The questionnaire consists of a single sub-dimension and a total of 19 items ( $\alpha=.91$ ). During the development of the scale, it was determined that there was a high level, positive and significant relationship between the first and second application of the questionnaire as a result of test-retest reliability ( $r=.89$ ,  $p<.01$ ). The 5-point Likert-type questionnaire is scored as “I strongly disagree” (1), “I do not agree” (2), “I am undecided” (3), “I agree” (4) and “I totally agree” (5).

#### **Ethical Procedure**

Permission was obtained from Gazi University Ethics Committee to conduct the study. In addition, the participants signed a voluntary consent form stating that they participated in the research.

### ***Analysis and Interpretation of the Data***

Microsoft Excel and SPSS 22.0 computer program were used for the statistical analysis of the data obtained from the inventories. Normality assumptions were checked with the Kolmogorov-Smirnov test and it was determined that the data did not meet the normality assumptions. However, there is an increasing number of opinions in the related literature that normality tests are not sufficient in Likert-type scales (Hair et al., 2013; Tabachnick & Fidell, 2013). For this reason, the prominent skewness and kurtosis values for the normality assumptions were examined. In this context, the skewness and kurtosis values (-1.5, +1.5) suggested by Tabachnick & Fidell (2013) were taken into account and the distribution was found to be normal. In this direction, the T-Test was used to determine the differences between individuals' creativity and tactical skill levels according to the gender variable and national team experience. In addition, Pearson Product-Moment Correlation analysis was used to determine the relationships between the variables, and Multiple Linear Regression analysis was used to determine the power of the independent variable (Creativity) in predicting the dependent variable (Tactical Skills). The significance value was set as  $p < .05$  for each test performed.

## **RESULTS**

In the research, 137 men (52.9%) ( $\bar{X}_{age} = 23.90 \pm 5.17$ ) and 122 (47.1%) women ( $\bar{X}_{age} = 24.13 \pm 5.25$ ) continuing their professional handball life in the Super League and 1st League category in the handball in Turkey were included. A total of 259 athletes participated voluntarily. In addition, the mean of years of playing handball for male athletes was determined as  $\bar{X}_{year} = 11.97 \pm 5.60$ , and female athletes as  $\bar{X}_{year} = 12.63 \pm 5.37$ .

**Table 1.** Information on Descriptive Characteristics of the Participants

<b>Variables</b>	<b>n</b>	<b>%</b>	
Gender	Male	137	52.9
	Female	122	47.1
	Total	259	100.0
League Category	Super League	129	49.8
	1st League	130	50.2
	Total	259	100.0
National Team Experience	Yes	146	56.4
	No	113	43.6
	Total	259	100.0

n: Sample size

In table 2, information on the mean, standard deviation, minimum and maximum scores obtained by the participants from both scales is presented.

**Table 2.** Average, Standard Deviation, Minimum and Maximum Values of the Inventories Used in the Scope of the Research

Scales	Sub-Dimensions	n	$\bar{X}$	Sd	Minimum	Maximum
TSQ	PDM	259	4.395	0.654	5.56	6.00
	KBM	259	4.312	0.519	2.25	5.00
	KO	259	4.476	0.722	2.80	6.00
	ACS	259	4.525	0.729	2.75	6.00
CQA	CQA Total	259	4.233	0.374	2.89	5.00

TSQ: Tactical Skills Questionnaire, PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, CQA: Creativity Questionnaire for Athletes,  $\bar{X}$  mean, Sd: Standard deviation

In table 3, the tactical skill levels of the participants in sports are examined in terms of gender variable. It is seen that positioning and decision making ( $t = .482, p > .05$ ), having knowledge about ball movements ( $t = -1.950, p > .05$ ), recognizing opponents ( $t = .745, p > .05$ ), acting in changing situations ( $t = .160, p > .05$ ) and the total score of TSQ ( $t = .551, p > .05$ ) did not show statistically significant difference. The creativity levels of the participants in sports according to the gender variable did not show statistically significant difference in the total score of CQA ( $t = -1.371, p > .05$ ).

**Table 3.** T-Test Results of Tactical Skills and Creativity Levels by Gender Variable

Sub-Dimensions	Gender	n	$\bar{X}$	Sd	t	df	p
PDM	Male	137	4.413	.653	.482	257	.708
	Female	122	4.374	.657			
KBM	Male	137	4.253	.563	-1.950	257	.148
	Female	122	4.379	.458			
KO	Male	137	4.508	.734	.745	257	.788
	Female	122	4.441	.709			
ACS	Male	137	4.518	.789	-.160	257	.054
	Female	122	4.532	.660			
TSQ Total	Male	137	4.535	.605	.551	257	.975
	Female	122	4.494	.589			
CQA	Male	137	4.203	.398	-1.371	257	.288
	Female	122	4.267	.344			

PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, TSQ: Tactical Skills Questionnaire, CQA: Creativity Questionnaire for Athletes, t: t-value, df: degrees of freedom

In table 4, the tactical skill levels of the participants in sports were examined in terms of the league category variable. Positioning and decision making ( $t = -1.774, p > .05$ ), knowing about ball movements ( $t = -.620, p > .05$ ), knowing the opponents ( $t = -1.808, p > .831$ ), acting in changing situations sub-dimensions ( $t = -2.890, p > .05$ ) and the total score of TSQ ( $t = -2.257, p > .05$ ) were not statistically significant. The creativity levels of the participants in sports according to the league category variable did not show statistically significant difference in the total score of CQA ( $t = -.293, p > .05$ ).

**Table 4.** T-Test Results of Tactical Skills and Creativity Levels by League Category Variable

Sub-Dimensions	League Category	n	$\bar{X}$	Sd	t	df	p
PDM	Super League	129	4.323	.622	-1.774	257	.507
	1st League	130	4.466	.678			
KBM	Super League	129	4.292	.506	-.620	257	.828
	1st League	130	4.332	.533			
KO	Super League	129	4.395	.723	-1.808	257	.831
	1st League	130	4.556	.714			
ACS	Super League	129	4.395	.734	-2.890	257	.910
	1st League	130	4.653	.705			
TSQ Total	Super League	129	4.433	.588	-2.257	257	.825
	1st League	130	4.599	.596			
CQA	Super League	137	4.226	.380	-.293	257	.504
	1st League	122	4.240	.370			

PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, TSQ: Tactical Skills Questionnaire, CQA: Creativity Questionnaire for Athletes

In table 5, the tactical skill levels of the participants in sports are examined according to the variable of national team experience. Positioning and decision making ( $t = 2.117$ ,  $p > .05$ ), know opponents ( $t = 1.083$ ,  $p > .05$ ), acting in changing situations ( $t = .272$ ,  $p > .05$ ) sub-dimensions, and TSQ total score ( $t = 1.559$ ,  $p > .05$ ) did not indicate statistically significant difference. The scores obtained by the participants from the sub-dimension of having knowledge about ball movements ( $t = .624$ ,  $p < .05$ ) were found to be statistically significant. The creativity levels of the participants in sports according to the variable of national team experience did not show statistically significant difference in the total score of CQA ( $t = 1.999$ ,  $p > .05$ ).

**Table 5.** T-Test Results of Tactical Skills and Creativity Levels According to the Variable of National Team Experience

Sub-Dimensions	National Team Experience	n	$\bar{X}$	Sd	t	df	p
PDM	Yes	146	4.470	.623	2.117	257	.178
	No	113	4.297	.682			
KBM	Yes	146	4.330	.566	.624	257	.016*
	No	113	4.289	.453			
KO	Yes	146	4.519	.706	1.083	257	.310
	No	113	4.421	.741			
ACS	Yes	146	4.536	.728	.272	257	.361
	No	113	4.511	.734			
TSQ Total	Yes	146	4.567	.575	1.559	257	.089
	No	113	4.450	.620			
CQA	Yes	137	4.274	.396	1.999	257	.120
	No	122	4.180	.338			

PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, TSQ: Tactical Skills Questionnaire, CQA: Creativity Questionnaire for Athletes

The correlation analysis results between the tactical skill and creativity levels are analyzed according to the variable of the participants' years of playing handball in table 6, there is a positive low level correlation between the year of playing handball and PDM ( $r = .214, p < .05$ ). there is a positive low level correlation between the year of playing handball and KO ( $r = .181, p < .05$ ), there is a positive low level correlation between the year of playing handball and ACS ( $r = .159, p < .05$ ) and there is a positive low level correlation between the year of playing handball and TSQ ( $r = .212, p < .05$ ) and there is a positive low level correlation between the year of playing handball and CQA ( $r = .222, p < .05$ ) and this relationship was statistically significant. Although a low level positive correlation was found between the year of playing handball and KBM ( $r = .054, p > .05$ ), it was found that this relationship was not statistically significant.

**Table 6.** Correlation Analysis Results of Tactical Skills and Creativity by Years of Playing Handball Variable

Variable		PDM	KBM	KO	ACS	TSQ Total	CQA
Sport Age	r	.214	.054	.181	.159	.212	.222
	p	.001*	.383	.003*	.010*	.001*	.000*
	n	259	259	259	259	259	259

PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, , TSQ: Tactical Skills Questionnaire, CQA: Creativity Questionnaire for Athletes, \* $p < .05$ , r: Correlation co-efficient, p: Reliability co-efficient, n: Sample size

**Findings Related to Regression Analysis**

During the analysis of the data, first of all, Pearson Product-Moment Correlation analysis was conducted in order to test the relationships between the predictive variable of the research, “Creativity Questionnaire for Athletes” and the predicted variable (Sub-Dimensions of Tactical Skills Questionnaire).

There is a moderate positive correlation between creativity and PDM ( $r = .549, p < .05$ ), KO ( $r = .575, p < .05$ ), and ACS ( $r = .471, p < .05$ ). It was found that there was a high level of positive correlation between creativity, and KBM ( $r = .809, p < .05$ ). These relationships were statistically significant (Table 7). After the relationships between the variables were determined, multiple regression analysis was analyzed in the Table 8.

**Table 7.** Correlation Analysis Results on Creativity and Tactical Skill Levels

	Sub-Dimensions of TSQ	CQA
PDM	r	.549
	p	.000*
	n	259
KBM	r	.809
	p	.000*
	n	259
KO	r	.575
	p	.000*
	n	259
ACS	r	.471
	p	.000*
	n	259

PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, CQA: Creativity Questionnaire for Athletes, \* $p < .05$



It is seen that the multiple linear regression model established in Table 8 is significant. In this context, when the results of the analysis are examined, it is seen that the tactical skill levels of the participants in sports are not significantly predicted by the ACS sub-dimension. However, it was determined that PDM, KBM and KO sub-dimensions significantly predicted tactical skill levels in sports and explained approximately 74% of the variance ( $R = .865$ ;  $R^2 = .748$ ,  $p < .05$ ). In line with this result, it can be said that the use of creativity in sports is the determinant of tactical skills.

**Table 8.** Multiple Linear Regression Analysis Results on the Prediction of Tactical Skills by the Level of Creativity

Predictive Variables	B	Std. Error	Beta	t	p	Tolerance	VIF
(Stable)	1.277	.111		11.547	.000*		
PDM	.087	.026	.153	3.404	.001*	.494	2.023
KBM	.483	.025	.670	19.213	.000*	.816	1.226
KO	.111	.025	.215	4.406	.000*	.419	2.387
ACS	-.002	.022	-.004	-.097	.923	.517	1.935

$R = .865$ ;  $R^2 = .748$ ;  $F = 188.248$ ; Durbin Watson = 1.822;  $p < .05$ , PDM: Positioning and Decision Making, KBM: Knowledge of Ball Movements, KO: Knowing Opponents, ACS: Acting in Changing Situations, \* $p < .05$

## DISCUSSION

In the current study, the scores obtained by the handball players from the creativity and tactical skill questionnaires were examined in terms of gender, year of playing handball and league category.

As a result of the t-test analysis, it was found that the scores of the participants from the creativity and tactical skill questionnaire were not statistically significant in terms of gender variable. Based on this result, it can be interpreted that the gender difference does not have an effect on the creativity and tactical skill levels of the handball players.

The scores obtained by the participants from the TSQ according to the league category of the team in which they play handball are analyzed, although the scores obtained from all sub-dimensions are high in favor of the handball players competing in the 1st league, this difference was not found to be statistically significant. Although the scores were higher in favor of the athletes competing in the 1st League, this difference was not statistically significant. Assuming that the competition and level of competitiveness between the handball teams competing in the Super League is higher, it is expected that the tactical skills and creativity levels of the athletes competing in this league are higher. However, on the contrary, it was found that the athletes in a lower league got higher scores in TSQ and CSA, and their tactical skill levels were slightly higher than the athletes in a higher league. From this point of view, it may be that the athletes in a lower league did not evaluate themselves objectively when filling out the scales, and thus their tactical skill and creativity levels were higher than the athletes competing in the higher league.

As a result of the t-test analysis of the scores of the participants in the KBM sub-dimension of the TSQ according to the variable of having national team experience, it was determined that the difference was statistically significant in favor of the national handball players. However, there was

no statistically significant difference in the scores obtained by the handball players in other sub-dimensions (PDM, KO, ACS) of TSQ. The more successful national handball players in the KBM may be associated with their higher tactical capacity for offensive and attacking games than non-national handball players. Although there is an increase in favor of national handball players in the scores obtained from the CSA, this difference is not statistically significant.

As a result of the correlation analysis made according to the variable of the handball players' years of playing sports, according to the scores they obtained from the other sub-dimensions except for the KBM sub-dimension of TSQ; It has been determined that the high sports age of the handball players also affects the tactical skill levels positively. Likewise, it was concluded that the high sports age of the handball players positively affects their creativity levels. Memmert, Baker and Bertsc (2010) conducted an experimental study supporting the same result in their research. The increase in the time spent by the players competing in team sports played with the ball in that sport also positively affects the creative thinking skills of the athletes.

As a result of the correlation analysis made in the light of the data collected from the current research, it was concluded that as the creativity levels of the handball players increase, their tactical skill levels will also increase. Especially in offensive games (Memmert, Baker & Bertsc, 2010; Roca, & Ford, 2021), the athlete will be able to correctly fulfill the tactics given to him as long as he uses his creativity skills at the right time and place. Thus, the element of winning, which is one of the most important satisfying features of sports, will not depend on random factors, but will enable the athlete to reach the desired result by using his cognitive skills together with his physical capacity.

## CONCLUSION

In the development of creativity in sports, unstructured activities applied in training are considered very important in terms of developing this cognitive feature (Kurtzberg & Amabile, 2000). As with the development of some cognitive processes, participation in various sports and physical activities plays an important role in the development of creative thinking (Dietrich, 2004; Runco; 2007; Sternberg & Lubart, 1998). According to Piaget, symbolic games seen in childhood are very important for the cognitive development of the individual. During this period, the child's playing with imaginary characters develops his/her creative thinking skills by pushing the limits of his/her cognitive capacity by physically manipulating reality by dreaming of the non-existence (Piaget, 1962).

In conclusion, we found a level of moderate relation between creativity and tactical skills of handball players. Thus, the more they play handball, the more they have creativity and tactical skills. By the years pass in handball, they become more experienced in handball, and also given tactics by coaches can be applied effectively by athletes. Today, with the development of technology, a more sedentary lifestyle has begun to be adopted. As a result of this, street sports are no longer as they used to be, irregular training programs and lack of game knowledge are seen as some factors that limit the creative thinking potential of athletes (Memmert, 2013). In addition, the necessity of complying with a predetermined plan and strategy during the competition, the fact that the athletes struggle in a strict game environment and environmental conditions can be shown among some of the obstacles to producing creative solutions.

As a suggestion, the creativity and tactical skill levels of handball players can be evaluated by using different variables such as their positions in the game for further research.

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