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# Comparative study of the tactical indicators that characterize the fast break in male and female under-16 Basketball teams

Isabel Monteiro\*, Fernando Tavares\* and Américo Santos\*

## COMPARATIVE STUDY OF THE TACTICAL INDICATORS THAT CHARACTERIZE THE FAST BREAK IN MALE AND FEMALE UNDER-16 BASKETBALL TEAMS

KEYWORDS: Basketball, Female, Male, Learning phase, Fast break.

ABSTRACT: The purpose of this study was to analyze and compare, in youth Basketball, the offensive technical and tactical indicators which contribute to the development of fast break situations. The sample consisted of 12 games, regarding female and male Under-16 during the 2009/2010 season. The variables studied were: a) fast break development form, b) recovery of ball possession (form and zone), c) distance of the outlet pass, d) fast break situations, e) fast break finalization (form and zone) and f) fast break finalization. For the overall results of this study, we used descriptive statistics procedures for presentation of frequencies and percentages of variables. For comparison of the results between male and female teams we used the *Chi-Square Test* ( $\chi^2$ ), with a significance level of  $p \leq .05$ . The results showed that for female teams the fast breaks were mostly initiated by defensive rebounds in areas near the basket as for the male teams it was through interceptions. For both groups fast breaks were mostly developed by pass and the outlet pass most often delivered to the offensive midfield. Also, for female and male teams the most common fast break situation was the 1x1 followed by the 1x0 and the lay-up was the most frequent form of finalizing ball possessions, mostly, in areas near the basket. Finally, male teams have completed a larger number of fast break and more efficiently, compared with the female teams. These results confirm that fast break is an indicator of the game with great importance and provide relevant information that can help planning and organizing the training of fast break at youth level guards; these differences were not observed in the playoffs.

The dynamic of the Basketball game grants it a special status among other sports, when considering the velocity that's required to execute the technical and tactical aspects that must be performed during the game. In this perspective several authors give particular emphasis to the fast break (Fotinakis et al., 2002; Tsamourtzis et al., 2005; Ortega and Palao, 2007; Parra, 2010). Further, the majority of authors indicate that the use of game styles centered in fast break and quick attacks are the most adequate for youth (American Sport Education Program, 2001).

The fast break is considered, as refer Fotinakis et al. (2002), the best "offensive weapon" because it allows, in most cases, to end the fast break in a radius of five meters away from the basket, usually in situations of numerical superiority, not giving the defense time to be organized (Rabaz, 1990).

Particularly in under-16 teams the fast break is an easier system to implement and easier to be learned by the players because it uses a wider space of the court and provides less defensive opposition, it is also an attractive game style that allows players to surprise the opponent, change the pace of the game and consequently its result.

Therefore, the objective of this study is to analyze the variables involved in each stage of the fast break in order to gather relevant information for planning and organization of training in

under-16 teams, considering the specific aspects of the fast break in order to develop them and better use them during the game allowing the players and the teams to improve and get an edge on the competition.

In our study we will analyze and compare the phases of the fast break (origin, development and finalization) in under-16 female and male basketball teams, that participated in the District Championship Finals of the Basketball Association of Porto.

## Method

### Sample

In this study we analyzed twelve games from the 2009/2010 season, regarding the male and female final four of the Under-16 District Championship of the Porto Basketball Association.

Our sample consisted of eight teams, four female with an age average of 15.40 years and four male with an age average of 15.54 years. As for the average of years of Basketball practice we verified that the female teams had an average of 5.1 years while the male teams had an average of 6.8 years.

In our fast break approach we restricted our attention to the different sub-phases analyzing the beginning, development and finalization (Parra, 2010; Smith, 1981).

The studied variables regarding the fast break were the following:

a) Recovery of ball possession (form and zone);

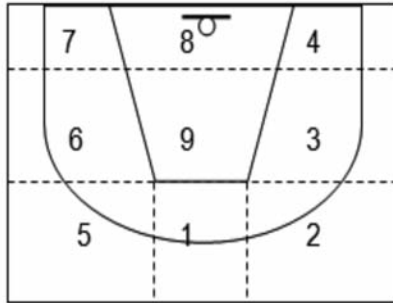


Figura 1. Ball recovery zones (Mikes, 1987).

b) Fast break development form;

c) Distance of outlet pass;



Figura 2. Distance of outlet pass (Fotinakis et al., 2002).

d) Fast break situations;

e) Finalization (form and zone);

f) Fast break efficiency.

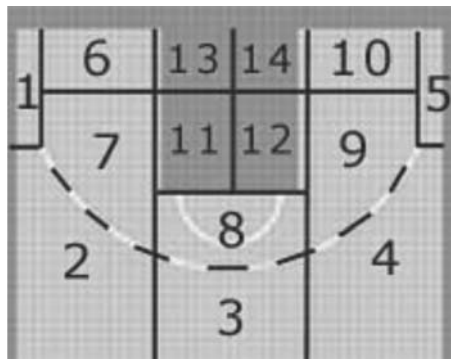


Figure 3. Finalization zones (www.82games.com).

### Data Analysis

The statistical analyses were performed using SPSS software 17.0 and significance level was set at  $p \leq .05$ . For the overall results of this study, we used descriptive statistics procedures for presentation of the frequencies and percentages of the variables. For comparison of the results obtained by male and female teams it was used the *Chi-Square Test* ( $\chi^2$ ).

### Results

Considering, in Table 2, all the fast breaks developed by the observed teams we realize that male teams carried out more fast breaks per game than the female teams.

	Fast break		Total
	Female Teams	Male Teams	
Frequency (n)	81	129	210
Percentage (%)	38.6%	61.4%	100%

Table 1. General analysis of observed fast breaks.

Comparing the results regarding the form of recovering the ball possession between genders, by observing Figure 4, we realize that while the female teams registered the offensive rebound as the most frequent form of winning ball possession followed by interception (38.3% and 27.2%) the male teams obtained inverse results (32.6% and 36.4%).

Considering the values presented on Figure 5 we can see that zone 8 was the most used by the female teams (26%). As for the male teams the highest value was registered on zone 9 (25.8%) although this was very close to the one registered on zone 8 (25%).

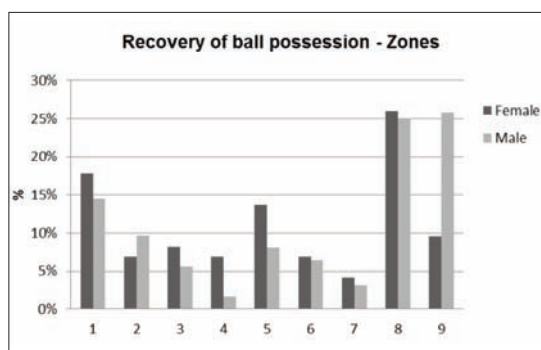
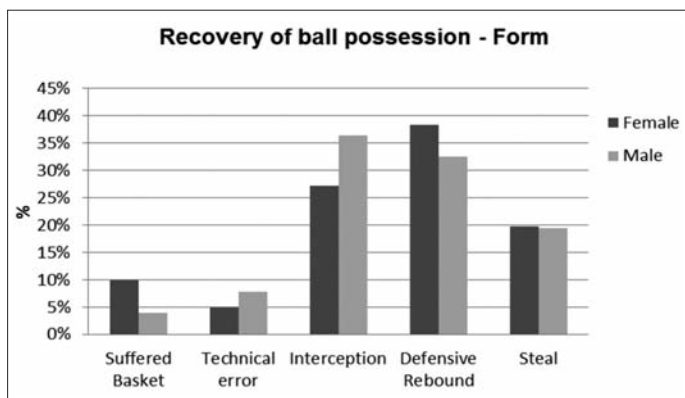


Figure 4 and 5. Analysis and comparison by gender of the form and zones where the recovery of ball possession occurred.

Regarding the fast break development forms, by observing Figure 6, we verified that female and male teams used preferably the pass rather than the dribble (64.2% e 51.9%, respectively).

it was executed to zone 4 (56.7%). As for the female teams although showing the highest percentage of passes also to zone 4 (34.6%) they did not diverge much from the number of passes made to zone 1 (32.7%).

Analyzing Figure 7 we found that when the male teams developed their fast break using pass in more than half the times

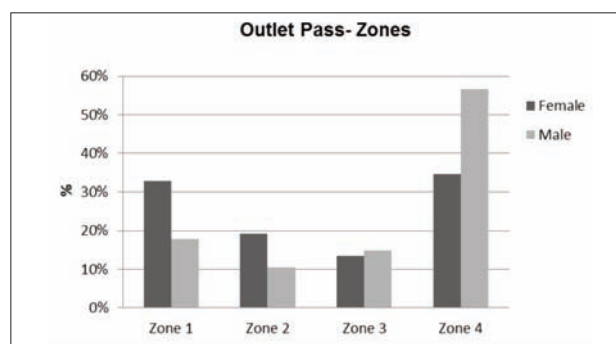
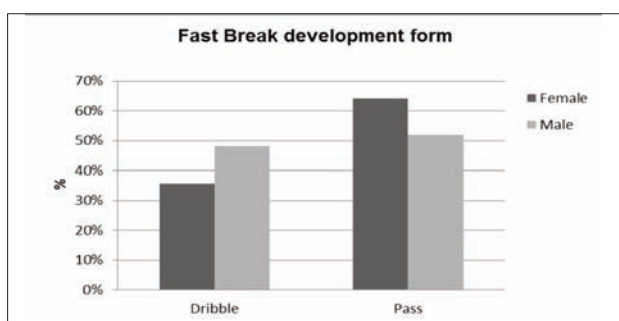


Figure 6 and 7. Analysis and comparison by gender of the fast break development forms and distance of the outlet pass.

On Figure 8 we observed that the most frequent fast break situation for both groups was the 1x1 (female teams 34.6% and male teams 33.3%) followed by the 1x0 (27.2% and 28.7%, respectively), while de 2x1 was the least frequent situation with similar percentages for female (16%) and male teams (17.1%).

Considering Figure 9 we verified that the layup was the most frequent form of finalizing the fast breaks for both female (74.1%) and male (77.5%) teams. This was the only variable in which we found significant differences ( $p \leq .05$ ) in the results between genders, more specifically in the suspension shot, with a 6.2% registered by the male teams and 0% by the female teams.

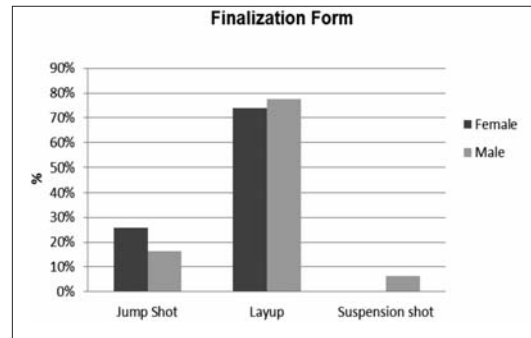
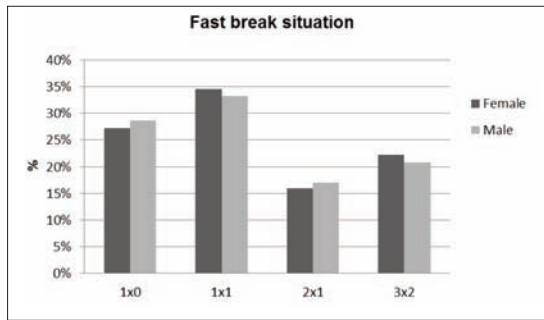


Figure 8 and 9. Analysis and comparison by gender of the fast break situations and the ending form. \* $p \leq .05$

Regarding the fast break end zones presented in Figure 10 we observed that the favorite zones for both groups were clearly number 13 and 14, corresponding to about 80% of all shots analyzed, with a slightly higher percentage registered on zone 14 for both female (51.9%) and male (56.6%) teams.

Finally, analyzing the fast break efficiency on Figure 11 we verified that the highest percentage of successful fast breaks was obtained by the male teams with a 60.5% against 46.9% of the female teams.

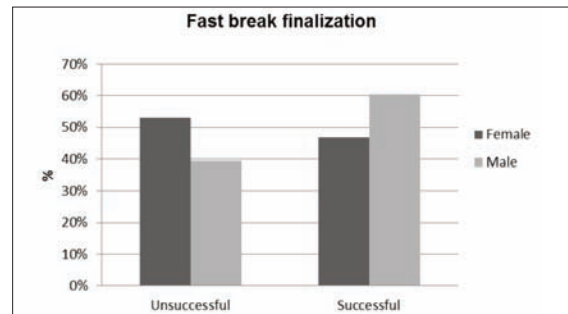
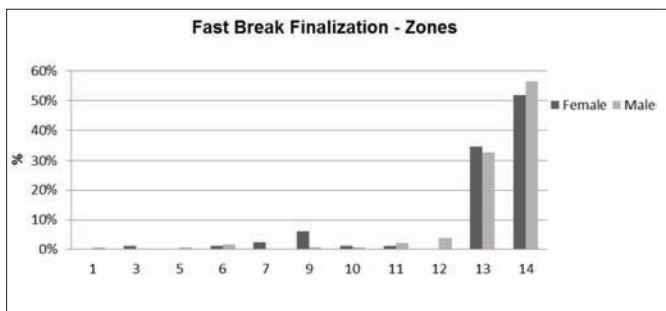


Figure 10 and 11. Analysis and comparison by gender of the fast break ending zones and efficiency.

## Discussion

Considering our results we realize that overall during the observed games male teams executed more fast breaks than female teams (129 vs. 81). Similar results were obtained by Gómez et al. (2007) although with senior teams. This outcome was possibly due to the fact that male teams present higher values of force, resistance and speed, since younger ages, than female teams. Thankfully to these capabilities male teams are able to apply stronger defenses during the game (resulting in a higher number of ball recoveries) and to play at a higher speed during a longer period of time than female teams, therefore creating more fast break situations during the game.

Regarding the most frequent form of recovering ball possession we verified that although for the female teams observed most ball possessions resulted of defensive rebounds, resembling Wooden (1988), Mikes (1988), Cruz and Tavares (1998), Fotinakis et al. (2002), Tsamourtzis et al. (2005) and Parra

(2010) studies, for male teams it was through ball interception that more often ball possession was regained, resembling what happened in the study of Ortega et al. (2007).

The higher percentage of interceptions registered by the male teams might be related to the fact that these teams often use very aggressive defense systems, in which players are very aggressive in their one-on-one defense promoting more turnovers by interception of the ball for the opposite team (Ortega et al., 2007).

Also in the initial phase of the fast break we analyzed the zones in which more ball possessions were recovered and verified that male teams preferably used zones closer to the basket (zones 8 (25.4%) and 9 (19.8%)) similar to what happened in Ortega and Palao (2007) and Refoyo et al. (2009) studies. On the other hand female teams registered the highest percentages in zone 8 (26%) and in zone 1 (17.8%) possibly related to a strong defense on the ball carrier, particularly on zone 1, resulting in the loss of ball possession by the opposite team and consequently fast break situations.

In our study we also analyzed the development of fast breaks, observing a clearly higher use of the pass by both groups, contrary to the results obtained by Refoyo et al. (2009) and Parra (2010) that registered the dribble as the most used form of development of the fast break.

The higher use of the pass registered might be related to the fact that, according to Parra (2010), in general when a fast break starts with a defensive rebound or a successful basket the pass is the fastest form of moving the ball down the court not giving the opposite team the chance to be organized on defense in time to prevent the fast break.

In our study the similar use of the pass (51.9%) and the dribble (48.1%) registered by the male teams is possibly explained by the fact that the main forms of ball recovery were interception (use of dribble) and defensive rebound (use of pass).

Continuing our analysis, regarding the location of the outlet pass of the fast break, both groups preferably used zone 4, similar to what happened in Fotinakis et al. (2002) study in which they concluded that when the outlet pass was executed to the offensive half court (zone 4) teams had more chances of developing the fast break. However, the female teams had a similar percentage of passes to zone 1, which may be explained by the high number of defensive rebounds performed (38.3%) usually followed by an outlet pass made to secure zones situated closer to the defended basket (zone 1), just outside the restricted area.

Another variable examined in our study was the fast break situation, we observe that for both gender the most frequent situation was the 1x1, similar to what happened in the study of Tavares and Veleirinho (1999), followed by the 1x0 and finally the 2x1 and the 3x2 situations. However, according to other studies (Fotinakis et al., 2002 and Tsamourtzis et al., 2005) conducted with senior athletes the most common fast break situation was the 3x2.

The differences between our study and the studies mentioned above we believe may be related to the fact that in those studies the athletes observed were adults (senior level) while ours and Tavares and Veleirinho (1999) consisted on youngsters (under-16 and under-14 levels, respectively) that are still developing the technical skills of the game, therefore showing a greater concern with the ball and a more limited ability to "read the game" and observe the position of the teammates on the court, missing out on favorable offensive situations such as 3x2 or 2x1.

Moving on to the final moment of the fast break we verified that both groups used the layup was the most frequent form of finalization, similar to what happened in the studies of Tsamourtzis et al. (2005), Ortega and Palao (2007) and Parra (2010). The more frequent use of the layup may be explained by the fact that often the fast breaks resulted in 1x1 and 1x0 situations that facilitate the use of the layup.

In this perspective, Araujo et al. (2004) refers that shooting in areas closer to the basket improve the percentage of success (since the difficulty of the shot is lower due to the proximity of the basket), therefore the layup is the most sought to finish fast breaks.

This was the only variable in which we verified statistically significant differences between the groups ( $p \leq 0.05$ ), more

precisely in relation to the suspension shot. This result may be explained by a lower physical capacity of female athletes often unable to make a considerable vertical jump to carry out the suspension shot, in contrast with the male teams that at this age already have higher levels of strength and coordination.

Also the fact that the suspension shot might not be an objective for the under-16 female teams, therefore not included in their training process due to the complexity it demands. In contrast, the jump shot and the layup not only are less complicated to execute but also achieve higher percentages of success, therefore is more important for them to dominate these kinds of shots.

When considering the zones where fast breaks are finalized we conclude both gender mostly used areas closer to the basket, corresponding in our study to zones 13 (33.3%) and 14 (54.8%). These findings are in agreement with the study of Refoyo et al. (2009) in which 75% of the fast breaks were finished within the restricted area.

Finally, comparing the percentage of successful fast breaks between male and female teams we found that, as seen in the studies of Gómez et al. (2007) and Refoyo et al. (2009), the number of fast breaks that were successfully completed is higher among male teams (60.5%) when compared to the female teams (46.9%).

Possibly, these results might be explained by the fact that the male teams showed greater tactical discipline in their offensive strategy, conducting more structured fast breaks which result in better shooting options and consequently in higher success rates (Gómez et al., 2007), when compared to the female teams.

These differences in the fast break efficiency could also be explained by the gap between male and female teams regarding the years of Basketball practice. Thus, male players have more years of practice and have a better grasp of the technical-tactical fundamentals of game and a more developed ability to "read the game", which translates into a greater number of appropriate motor responses and a higher success percentage of fast breaks.

## Conclusion

Regarding the fast break situations performed in our sample we withdraw the main conclusions:

Female teams recovered more ball possessions through offensive rebounds while male teams did so through interceptions;

For both groups fast breaks were mostly developed by pass, the outlet pass was most often delivered to the offensive midfield, the most common fast break situation was the 1x1 and the layup was the most frequent form of finalizing ball possessions, generally, in areas near the basket.

Male teams perform a greater number of fast breaks per game and with higher success rate than female teams;

Also the only significant statistical difference found between groups was in the form of finalizing fast breaks more specifically regarding the suspension shot.

### CONTRAATAQUE EN BALONCESTO MASCULINO Y FEMENINO EN ETAPAS DE FORMACIÓN

PALABRAS CLAVE: Baloncesto, Femenino, Masculino, Etapas de Formación, Contraataque.

RESUMEN: El presente trabajo tiene como objetivo analizar y comparar los elementos técnicos y tácticos ofensivos que contribuyen a la realización de contraataques en el contexto del baloncesto de formación.

La muestra la constituyeron 12 partidos de las fases finales masculina y femenina del Campeonato de distrito de la asociación de baloncesto de Oporto, de la categoría sub-16, de la temporada 2009-2010. Las variables estudiadas fueron: a) forma y zona de recuperación de la posesión del balón; b) forma de salida del contraataque; c) zona de primer pase del contraataque; d) situación de contraataque; e) forma y zona de finalización, y f) porcentaje de anotación del contraataque.

Para el análisis general de los resultados de este estudio se usó estadística descriptiva para la presentación de frecuencias y porcentajes de las variables. Para la comparación de los resultados obtenidos por los equipos femeninos y masculinos se utilizó el *Test de Chi-cuadrado* ( $\chi^2$ ), con una significación de  $p < .05$ . Los resultados indicaron que fue a través del rebote en zonas próximas al aro (zona 8) donde más veces se inició el contraataque. El pase de salida predominante fue hacia la zona de medio campo ofensivo (zona 4). La situación de contraataque más frecuente fue la de 1x1, seguido del 1x0. En el momento de la finalización, el lanzamiento tras un pase fue lo más frecuente, consecuentemente a las zonas más utilizadas fueron las más próximas al aro (zonas 13 y 14). Finalmente, los equipos masculinos realizaron y finalizaron un número mayor de contraataques, comparado con los equipos femeninos.

Estos resultados confirman que el contraataque es un elemento de juego de gran importancia y permiten extraer informaciones relevantes que pueden ayudar al planteo y la organización del entrenamiento del contraataque en las etapas de formación.

### O CONTRA-ATAQUE EM BASQUETEBOL. ESTUDO DESCRITIVO E COMPARATIVO NO ESCALÃO SUB-16 FEMININO E MASCULINO DA ASSOCIAÇÃO DE BASQUETEBOL DO PORTO

PALAVRAS-CHAVE: Basquetebol, Feminino, Masculino, Escalões de formação, Contra-ataque.

RESUMO: O presente artigo tem como objetivo, no contexto do Basquetebol de formação, analisar e comparar os elementos técnicos e tácticos ofensivos que contribuem para a realização do contra-ataque.

A amostra foi constituída por 12 jogos relativos às fases finais feminina e masculina do Campeonato Distrital da Associação de Basquetebol do Porto, no escalão de sub-16, referentes à época desportiva de 2009/2010.

As variáveis analisadas foram: a) forma e zona de recuperação da posse de bola, b) forma de saída do contra-ataque, c) zona de 1º passe do contra-ataque, d) situação de contra-ataque, e) forma e zona de finalização e f) percentagem de concretização do contra-ataque.

Para a análise geral dos resultados deste estudo foram utilizados procedimentos da estatística descriptiva para apresentação das frequências e percentagens das variáveis em estudo. Para a comparação dos resultados obtidos pelas equipas femininas e masculinas foi utilizado o *Teste do Qui-Quadrado* ( $\chi^2$ ), com um nível de significância de  $p \leq 0,05$ .

Os resultados indicaram que foi através do resalto em zonas próximas do cesto (zona 8) que mais vezes se iniciou o contra-ataque. A utilização do passe no momento de saída do contra-ataque foi predominante com o 1º passe a ser realizado para a zona do meio-campo ofensivo (zona 4). A situação de contra-ataque mais frequente foi o 1x1 seguido do 1x0. No momento da finalização o lançamento na passada foi o mais frequente e por consequência as zonas mais próximas do cesto foram as mais utilizadas (zona 13 e 14). Por fim, as equipas masculinas realizaram e concretizaram um maior número de contra-ataques, em comparação com as equipas femininas.

Estes resultados confirmam que o contra-ataque é um elemento do jogo de grande importância e permitem retirar informações relevantes que poderão auxiliar no planeamento e organização no treino do contra-ataque em escalões de formação.

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