

Quantitative Evaluation

The objective is analyze the technical gesture headline on the collective sports game that is Volleyball.

Condition Evaluation

For the evaluation of the technical gesture, the headline that was selected to shoot two athletes, the first with 61kg of body mass and height of 1.63m and the second with 68.2kg of body mass and height of 1.75m. It was to asked to athletes who performed the execution of the technical gesture that with use of upper and lower limbs without balance.

The film camera that was used to film (Sony Cyber-Shot), was put to 3m-site testing and perpendicular to the movement . The images were captured at 50Hz, in. Mov. Later, the files were converted to the. Avi in order to be used in motion analysis software: Utiulus fairplay 5. Additionally filmed a calibration system was used (1x2m), as shown in figure 1 and allowing to calibrate the images.



Figure 1. Calibration system adopted.

In the table below the coordinates of the calibration system are presented:

Point	X (m)	Y (m)
1	0.0	0.0
2	1.0	0.0

3	1.0	2.0
4	0.0	2.0

Results and Discussion



Figure 2. Preparatory phase for implementation of the headline.

We can see that the two athletes (Clara, left image and Dinis, right image) have different postures at the time before contact with the ball. In the following figures we observe the main differences.



Figure 3. Projection height of the ball.

I can verify that upon receipt, Dinis throws the ball which is 1.09 meters above the ground, at the time this image was captured, the Clara is 0.89 meters above the ground. However, I did not extract these images valid grounds, since the two athletes have different heights logo, the heights of projection would be different. Thus we verify the projection angle, as can be seen in the images below.



Figure 4. Angle of the ball.

Through the analysis of the output angle of the ball we can see that the athlete on the right has a smaller angle than the left logo, it performs the closest desired technical gesture, since the ball can more protrudes vertically. When designing the ball more vertically and not horizontally so the athlete can become framed with the ball and that means it hosted the ball better. Therefore, the athlete from the right was able to perform more accurate and effective technical gesture, since the ball could best be approved, which is the main objective of the headline for this study. I will look then where did the athlete won the right edge over the left.



Figure 5. Forward inclination of the torso and the difference in distance has a foot relative to each other before the reception of the ball.

We can fix, through these images, the angle of the trunk of Clara (22) is less than the Dinis (25th), then Dinis has the most stem tilted forward, which will facilitate a better reception to the ball. Despite being a small difference between the two athletes, I think this difference in the inclination of the torso will influence the contact with the ball. We can also measure through the brands present on the gym floor that Dinis have the worry of having a more advanced foot the other, unlike Clara, which will help in the frame with the ball and a better reception of the ball, since this orientation of the foot allows the athlete to be more cautious to change the position if the ball is not well received.



Figure 6. Bending angle of the legs, before receiving the ball.

In this figure, I note that the bending angle of the legs in Dinis is slightly smaller than the Clara. We believe that this minimal difference between the two athletes, with respect to bending of the legs cannot be seen as a factor that determined the performance of each athlete to perform the headline.

References

- Software: Kinovea
- Software: Utilius fairplay