

EFFECTIVENESS AND SHOOTING ERRORS IN BASKETBALL

Master's student gr. 7-06-1012-01 Jingye Hu
PhD in Technical Sciences, Associate Prof. Burak V. A.
Belarusian National Technical University, Minsk, Belarus

The evaluation of shooting results is a critical component in basketball technique research, directly tied to the validation of training efficacy and the optimization of game strategies. As the primary means of scoring in basketball, shooting outcomes reflect not only a player's technical proficiency but also their integration into tactical execution and team coordination [1]. Traditionally, shooting result evaluation has relied heavily on the singular metric of shooting percentage. However, with the advent of digital technologies, assessment methodologies have evolved from qualitative observations to multidimensional quantitative analyses [2].

Proper shooting mechanics and effective power transfer are critical for improving accuracy. Below is a detailed breakdown of common mistakes:

1. Insufficient Lower Body Engagement. Many players fail to fully utilize leg power, resulting in disjointed movements and inefficient energy transfer. For example, a delayed or weak push-off from the toes, combined with inadequate hip and knee flexion, disrupts the kinetic chain from the lower to upper body.

2. Lack of Core Activation. Weak core engagement compromises stability during the shot. Players who arch their spine backward mid-shot often lose balance, highlighting the importance of core strength in linking upper and lower body movements.

3. Upper Body Coordination Issues. Poor synchronization between the arms and torso leads to erratic shooting motions. A common flaw is elbow flaring paired with overly aggressive arm movements, which destabilizes the release.

4. Incorrect Finger and Hand Mechanics. Improper finger control negatively impacts ball rotation and trajectory. Shots with insufficient backspin or sideways drift often stem from fingers failing to guide the ball cleanly off the hand.

5. Improper Foot Positioning and Movement. Misaligned feet (e.g., toes pointed outward) or excessive heel lift disrupts balance and power flow. Stable footwork forms the foundation for consistent shooting.

6. Excessive Forward Lean. Overleaning the upper body shifts the center of gravity forward, compromising balance. This often occurs when players reach toward the basket instead of shooting vertically.

7. Tension and Anxiety. Mental strain manifests physically through stiff mechanics. Nervous shooters frequently exhibit robotic motions rather than fluid, natural form.

8. Incorrect Timing of Power Generation. Initiating the shot with the arms instead of the legs breaks the kinetic sequence. Proper shooting requires legs to generate force, which the upper body then channels into the release.

9. Suboptimal Release Point and Arc. A release point too low reduces shot arc, while an excessively high release wastes energy. Finding the «golden ratio» of height and distance is key for efficient shooting.

10. Interference from the Guide Hand. Poor placement of the non-shooting hand (too high/low or uneven pressure) can alter the ball's path. The guide hand should stabilize without any influencing the release.

Effective shooting in basketball combines biomechanical precision with mental relaxation and focus. By addressing these technical and psychological elements, players can systematically improve their accuracy.

References

1. Yang, X. Research on free throw shooting skills in basketball games / X. Yang // BioTechnol. Indian J. – 2014. – Vol. 10. – P. 11800–11805.
2. Smith, J. Technology in Sports Training // Journal of Sports Science. – 2020. – Vol. 38, № 5. – P. 678–685.