

Volleyball skills study: Men should serve, women dig

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Knowing which skills to develop and use is a key element to an athlete's success. Brigham Young University statistics professor Gilbert Fellingham recently published an article in the [Journal of Quantitative Analysis in Sports](#) that answered such questions as: Which skills matter most for women volleyball athletes? What is most important: hitting or passing?

In Fellingham's study, every touch of the ball, regardless of whether it was a serve, dig, set or spike, was graded by judges observing from the sidelines. Quality passes were given high scores, while poor passes were assigned low values. Fellingham and two of his graduate students studied these grades and more particularly, the outcome when several graded

touches were used in a sequence.

“So you’ve got a series of graded touches leading to an outcome,” Fellingham explained. “Did this sequence of [skills](#) end in a point? Did it end in a continuation of play? Or did it end in a point for the opposition? Which skill in the sequence was most important in determining the outcome?”

Using statistical models, he studied the [probability](#) of scoring and continuing play with many different sequences and patterns. By determining which hits or series of hits were the most influential, Fellingham was able to identify the skills that matter most, allowing him to give coaches guidelines relative to how practices should be structured.

“The point of this [project] was a way to look at skills, to grade skills, so that as a coach you can decide what you ought to focus on in a practice,” Fellingham said. “What’s the skill set that I should be spending the most time on? Because these are the ones that are going to be making the most difference.”

Historically, volleyball practice for women has paralleled volleyball practice for men. However, based on Fellingham’s study of both men and women volleyball players and comparing their different strengths, he has found that the key skills for male victory are not the same as those for women.

“Women play a different game than men do,” he said. “Rather than focus on the skill set that makes a man a good player, women’s coaches should focus on the skill set that will optimize a woman’s chance of success.”

According to Fellingham’s research, because men can generally hit the ball harder, jump serves prove to be a critical part of their game.

Powerful serves can destabilize the opposition and claim quick points. Women, however, usually do not serve with enough force to produce the same effect.

So what skills should women volleyball players focus on? Fellingham has determined they should really spend less time serving and spend more time on digging, the ability to keep a ball from touching the floor after an attack from the opposition.

“Volleyball is this game where you can have big, exciting moments that may or may not really influence the outcome,” Fellingham noted. “[The players] get excited, and the fans get excited and it turns out, yeah, that’s not going to make any difference.”

Women earn fewer quick points than men due to differences in arm strength, so digging becomes essential to victory for women. With the ball in play longer, staying alive determines the winner of a match.

It remains certain that physical abilities are indispensable in the world of sports. However, to maintain a competitive edge, it is becoming more and more beneficial to apply the findings from statistical analyses to one’s game plan. Thus, statisticians such as Gilbert Fellingham are becoming an increasingly vital resource in athletics.

Provided by Brigham Young University

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