

MATHEMATICS AND COLLEGIATE WRESTLING: Wrestling with Byes

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FREQUENTLY ASKED QUESTIONS

Disclaimer: The answers given here reflect my own opinions and observations, and should not be construed as official EIWA policy.

Frequently Asked Questions

1. **Why doesn't the conference distribute the three byes to the top-three seeds in each weight class?**

ANSWER: Such a method guarantees a big a drop-off in the treatment of the #3- and #4-seeds.

The #4-seed (in fact, all seeds #4-#8) would be guaranteed not to get a first-round bye. This means that teams with many seeds in the range #4-#8 have a much greater chance for first-round bonus points. The teams (typically the top teams in the conference) with many #1-#3 seeds will have disproportionately fewer chances for those bonus points.

The effect is more pronounced when there are 14 teams in the conference, as has been the case for several years. There is little difference between being seeded #2 or #3, as far as chances for advancing to the semi-finals. But with 14 teams, if we guarantee byes to seeds #1 and #2, then the #3-seed has a much greater chance to score first-round bonus points. The coaches vote on the seeds just before the tournament starts. If byes are guaranteed to the #1-#2 seeds, then a coach has incentive to lobby for his wrestler to be seeded #3 instead of #2, to increase his team's chance of placing higher in the team championship race.

2. **Why not set the penalty cut-off close to 0. This would guarantee that the teams are treated fairly with respect to byes.**

ANSWER: A cut-off close to 0 does indeed treat the teams most fairly. However, such draws are no longer random. The bye-probabilities of the 8 seeded wrestlers within a weight class will not be equal to each other. This is unacceptable because the wrestlers are competing for the same berths to the NCAA championship meet.

From a practical viewpoint, using a cut-off close to 0 means that many complete draws will have to be made before an acceptable one is found. We want to produce the final bracket quickly.

3. **Why not distribute the byes at random among all entrants in a weight class? Why are the byes restricted to just the 8 seeds?**

ANSWER: The EIWA tournament is a qualifier for the NCAA championship meet. In recent years, the wrestlers in the top 4-6 places at the EIWA tournament qualify for the

NCAA meet. If wrestler X gets a first-round bye, he is already close to placing in the top-6. For instance, X's opponent in the next round (quarter-finals) could sustain an injury, or suffer a fluke loss, putting X into the semi-finals, where he has a very good chance of placing in the top-6 and qualifying for the NCAA meet. The seeded wrestlers have established strong records within the conference and nationally in the months leading up to the EIWA tournament. Any extra chance of qualifying for the NCAA "by luck" should be accorded to them.

Note: Places 3 through 6 in each weight class are determined by a consolation bracket. The wrestlers who lose in the championship bracket drop to the consolation bracket and continue competing.

4. Could the bye-distribution method now used by EIWA be used for other conference tournaments?

ANSWER: Yes. The main criteria for using the new EIWA method are:

- (a) Number of wrestlers in each weight class is somewhat less than a power of 2.
- (b) Byes are distributed at random among a fixed number of top seeds in each weight class.
- (c) The conference is unhappy with with past uneven distribution of byes among the teams.

It is important to note, however, that the penalty cut-off has to be computed in advance to apply the method correctly. This requires extensive analysis and computer simulation using historical data for at least 4 years of seeding and bye data from the actual conference. You can send me such data to analyze—several months in advance of the tournament: tsm@usna.edu

5. Could this same bye-distribution method be used at the NCAA meet?

ANSWER: No. The issues at the NCAA meet are different. First, the number of wrestlers (33) in each weight class is slightly more than a power of 2. So "pigtailed" are used in the brackets, instead of byes. Second, due to the large number of teams represented in the meet, disproportionate distribution of pigtailed/byes is unlikely to occur.