

Using NewsHour Extra Feature Stories

STORY

Math Madness: Statistics Might Help Choose NCAA Brackets, 03/17/08

http://www.pbs.org/newshour/extra/features/us/jan-june08/ncaa_3-17.html

Estimated Time: One 45-minute class period with possible extension

[Student Worksheet](#) (reading comprehension and discussion questions without answers)

PROCEDURE

1. WARM UP

Use initiating questions to introduce the topic and find out how much your students know.

2. MAIN ACTIVITY

Have students read NewsHour Extra's feature story and answer the reading comprehension and discussion questions on the student handout.

3. DISCUSSION

Use discussion questions to encourage students to think about how the issues outlined in the story affect their lives and express and debate different opinions.

INITIATING QUESTIONS

1. **What is a statistic?**

2. **How do people use statistics outside of school?**

3. **What is a prediction?**

4. **How do people make predictions about a political event? A sporting event?**

READING COMPREHENSION QUESTIONS – [Student Worksheet](#)

1. **What happens each March that allows fans to participate indirectly in college basketball?**

ANSWER

Every March, the NCAA tournament allows committed college hoops fans, as well as casual observers, to predict the outcome of 63 tournament games.

2. **What are the odds of choosing the winner of each and every game in the tournament? Has this ever happened?**

ANSWER

Like the outcome of any wager, there are odds for correctly picking tournament game winners, Final Four teams and the champion. The chances of picking every outcome correctly – the perfect bracket – are staggeringly low.

If you assumed that each game was a toss-up, like a coin flip, your chances of picking every game correctly would be .5 to the 63rd power – one in 9 million trillion, explained Wall Street Journal columnist Carl Bialik.

No one has ever filled out a perfect bracket, according to his research.

3. **What is one way of improving your bracket? What information should you consider?**

ANSWER

Studying the outcome of past tournaments is one way to improve your bracket.

Pete Tiernan, who runs bracketscience.com, uses a database of statistics from the past 23 years of the 64-team tournament to help his customers outperform the average bracket.

Tiernan compiles coaching records, each seed number's past performance and school histories on his old Macintosh computer. He analyzes individual odds for different factors without the use of sophisticated math programs: how does a team do in the tournament if it has won six of its last 10 games? What about seven of the last 10?

4. What can limit a statistician's ability to predict a winning bracket?

ANSWER

"Some of the more clever kids in stats class ask if my sample size is large enough. And sometimes, admittedly its not," Tiernan said. "There's been 23 tournaments in the modern era since [the] field expanded to 64 and sometimes our sample size is limited."

5. What must you do in order to have a better chance of wining a pool with a large number of people?

ANSWER

To win a large pool, you must go out on a limb and pick some upsets, he said.

"I think that's what people like to do, be the clever person who picks that upset. You also risk being the dumbest person in your pool," he explained.

DISCUSSION QUESTIONS (more research might be needed)

1. What are some problems statisticians face when trying to predict real-world outcomes?

2. What are some parallels between the ways the statisticians in the article try to predict the outcome the men's NCAA basketball tournament and how political analysts try to predict the outcome of an election? Using this year's presidential election as an example, make a list of ways an analyst might use past elections to predict the upcoming one.

3. What other types of real-world events can be better understood by looking at statistics? How do economists, advertisers and business analysts use statistics?

4. Interview adults in different jobs—do they make predictions at work? Do they use statistics, intuition or something else to make predictions?

Extension Activity

Have students write a 300-500 word essay on this topic providing clear examples. Send your completed editorial to NewsHour Extra (extra@newshour.org). Exceptional essays might be published on our Web site.