How Good Are You?

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I wrote this article to propose a different way to evaluate how good a bowler is....It was published in Bowlers Journal in 2003. This article is an attempt to do just that - separate the sport from the game while finding a way to measure the true skills of the sport. At the very least, the proposals outlined here are designed to get the collective tenpin community to reflect on how we can measure overall performance with an increased use of statistics. By introducing more statistics into competitive play, as well as creating a bowling rating system, we can shift the measure of quality back on the complete game of strikes and spares. Such a system could lead to rewarding those who make an effort to excel in all dimensions of the game while providing incentive to improve.

How Good Are You? Rating Yourself Bowlers Journal International, June 2003

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HOW GOOD ARE YOU?   By Joe Slowinski
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How do we measure performance quality in today's game? First, we must factor in high-friction bowling balls and dynamic weight blocks. Then, add in a technology that allows anyone to "grow an extra hand" on a sanctioned "adult bumper" shot. What have you got? Nothing that can really be measured by any known means. Instead, you've just defined a credibility issue!

Simply put, bowling averages become less meaningful as credibility decreases. As a result, we can no longer tip our 3-unit top hat in unqualified respect to most "honor" scores because they are simply so outrageous. According to the American Bowling Congress, John Chacko of Larksville, Pa., has shot eighty (80!) sanctioned 800 series. Further, Jeff Carter of Springfield, Ill., averaged 261 last year, while the women's record book shows that Jodi Musto, Schenectady, N.Y., averaged 240 in 1998-99.

True, these athletes are good. But is anyone that good?

More to the point, in an era of hyper-inflated scores, how do we measure individual performance so we know just how good these bowling athletes really are?

The Sport Bowling motto probably says it all on this issue: "[I]t's time to separate the sport from the game, to separate skill from technology, placing the impetus for performance where it belongs - on the bowler's accuracy, and ability to read lanes and adjust speeds."

This article is an attempt to do just that - separate the sport from the game while finding a way to measure the true skills of the sport. At the very least, the proposals outlined here are designed to get the collective tenpin community to reflect on how we can measure overall performance with an increased use of statistics. By introducing more statistics into competitive play, as well as creating a bowling rating system, we can shift the measure of quality back on the complete game of strikes and spares. Such a system could lead to rewarding those who make an effort to excel in all dimensions of the game while providing incentive to improve.

A Humble Start

First, we propose the introduction of additional statistics into league play to increase interest and enhance the quality of the experience. You can catch a glimpse of the possibilities in the "new look" PBA shows on ESPN. During the telecasts, viewers are privy to match play strike

percentages, and conversion rates for single pins and splits. Data provides those who tune in with a much richer view of a bowler's overall performance.

This is not new in professional sports. Baseball, football and basketball collect and analyze a significant number of statistics that provide a rich array of information about player quality (free-throw percentage, assist-to-turnover ratio, quarterback rating, slugging percentage, etc). For example, most sports fans understand the significance of Barry Bonds' slugging percentage during the 2001 season (when he broke Babe Ruth's 81-year-old record). Why can't league bowling do the same thing? And why can't the PBA add more performance statistics to differentiate performance characteristics? In both cases, the answer is they can.

Bowling leagues could be rejuvenated with the collection of individual performances in a number of additional categories: strike percentage, spare percentage, single-pin conversion percentage, split conversion percentage, 10th frame strike-out percentage. Data such as these would provide information that illustrates the ability of bowlers to perform the fundamental elements of the game (i.e., not only strikes, but spares as well).

Few would argue that bowling on a legalized wall has increased everyone's ability to strike, but it has also made us all softer in the spare-making domain. How many new 200-plus average bowlers have you seen miss a 10-pin by over ten boards?

Bowling needs a performance rating system. By collecting some of the information noted earlier, a simple bowling performance rating emphasizing the holistic elements of the game could be used to measure overall quality.

A Simplified Bowling Rating (SBR) could be equal to a bowler's strike percentage (X %) + spare percentage (/ %) + split conversion percentage (SPLC %). As an equation, the Simple Bowling Rating would be:

SBR = X % + / % + SPLC %

A league could include individual performances in each category, as well as a bowling rating, in addition to providing recognition for weekly and seasonal high ratings. The league could award prize funds for the highest spare percentage or the highest strike percentage. Most improved awards could take into consideration average as well as most improved spare-shooting. Increasing our record-keeping is the catalyst we need to increase performance. Would you make an effort to improve if these stats were published in your league?

Median and Standard Deviation

Two other statistics that have a logical home in the game - at least in regard to measuring performance and quality - are median and standard deviation. The median is the value at which 50 percent of the scores are above and the other half are below. An important concept to understand is that the median is far less sensitive to extreme scores (high or low) than the average. In other words, the median will not fluctuate due to a very high or low score like your average will. How many seasons has your average jumped due to one or two outstanding weeks, or plummeted due to a few poor performances or games? With a 66-game minimum, the average is not as good an indicator of performance as the median.

Standard deviation is the measure of how far scores are from the average, whether below or above. In other words, the standard deviation illustrates the amount of variation in all of your scores. So, with the standard deviation, it is possible to measure how consistent you are as a bowler during league play.

For illustrative purposes, a bowler with a low standard deviation is far

more consistent than a bowler with a higher standard deviation because his overall scores are closer to the average.
As an example, let's look at two bowlers to illustrate these ideas. Let's use a nine-game sample so it is possible to more clearly see the numerical relationships among average, median and standard deviation. Assume Bowler A shoots games of 210, 199, 185, 212, 205, 216, 195, 190, 207, for a 202.1 average. Meanwhile, Bowler B shoots games of 231, 185, 243, 201, 210, 205, 175, 164, 256 for a 207.7 average.

OK, who is the better bowler?

In our current traditional system of data collection and stats use, Bowler B has the highest average and would be considered the better bowler. Is he?

If we look at the two bowlers' median scores, both have identical scores of 205 (four scores exceed 205 for each bowler, and four are less than that score). This leads back to the original question: Is Bowler B really better than Bowler A? The equivalent median score suggests that both bowlers have 50 percent of their games above 205 and 50 percent of their games below 205. Doesn't this offer evidence that they are more evenly matched than their averages, expressed in isolation, suggest? What about the bowler who has a median below his average (Bowler B) or vice versa (Bowler A)? If we look at Bowler B, his high scores have skewed his average upward. Isn't the median a better indication of his bowling?

Comparing the standard deviations reveals more information about their performance. The standard deviation for Bowler A is 10.5 pins, while Bowler B's is 31. That means Bowler A is a significantly more consistent bowler than Bowler B. With the median scores being equivalent, who is the better bowler? It depends on what skills go into the makeup of "better," and/or how you define the term in relation to bowling performance. But it would seem to illustrate the validity of including median and standard deviation in regard to measuring performance. You might be surprised what you see in your own performance or in others in your league.

With traditional league information, a league secretary or center could easily include such data in league stats. What about an introduction of an award for high median? Do you see the possibility for most improved awards? What about most improved average and most improved consistency (decreasing the standard deviation) as a measure of improvement?

By using more statistics, leagues have more potential opportunities to measure and reward individual performance than via the use of an isolated bowling average. But this is only the beginning. Technology could provide the opportunity to create an elaborate rating system that our sport needs to bring some integrity back to the game.

Phase Two: What Could Happen Next

With the future of computerized scoring systems, the potential to measure individual performance is available if the manufacturers want to contribute to the advancement of our sport. With the addition of a few lines of code, a league management software package could yield strike percentage, spare percentage and other information.

But this is only the tip of the iceberg. Here is where the potential gets very interesting and exciting. I propose the creation of a system that measures two bowler ratings: power rating (PR) and an advanced bowler rating (ABR).

Like slugging percentage in baseball, a power rating in bowling could provide additional prestige to the sport by providing data about a player's ability to repeat good shots. A power rating would be comprised of a strike percentage (X %), carry percentage (C %) and what I refer to as the double percentage (XX %), the measure of an individual's ability to strike after

throwing a previous strike. Symbolically, this leads to the following "power rating" equation:

PR = X % + C % + XX %

This rating places value on throwing shots in the pocket and carrying, as well as repeating shots when a bowler is lined up. It would allow those who want to improve their game to see data about elements that are weaker (e.g., pocket percentage, carry percentage and double percentage).

The power rating can be calculated quickly. First, one calculates his strike percentage by dividing the number of strikes by the number of frames that require throwing a first ball. Carry percentage is calculated by dividing the number of strikes by the number of pocket hits (no Brooklyn hits, please). And, finally, the double percentage is calculated by dividing the number of strikes after strikes by the total number of strikes. Try this in your next league with your teammates. Who has the highest power rating?

Next, with the power rating as an additional quality component, we can take the simple bowling performance rating discussed earlier and create a more advanced and accurate rating. The advanced bowling rating (APR) would include the power rating, spare percentage and split conversion rates. As an equation, it would look like the following:

APR = PR + / % + SPL %

where PR = X % + C % + XX %

Wouldn't it be great to see this information on the PBA telecasts? Bowler of the Year candidates could be selected on a complete array of merit, including a bowling rating system.

How good are you? Find out by keeping track of this data. Wouldn't it be interesting to compare your bowler rating to that of Parker Bohn, Walter Ray Williams or Pete Weber? True, it doesn't take lane conditions into consideration. But a bowler rating system would provide information about the completeness of any individual bowler. Therein lies its value.