INEQUITY IN OHIO HIGH SCHOOL SPORTS

"Lies, damned lies and statistics." – *Mark Twain and others.*

It is said that you can twist or manipulate any statistical information to make your point. That said, I would like to present some compelling information regarding the sports records of public versus private high schools. The statistics presented here have been compiled from the www.ohsaa.org web site and are "unofficial." I have checked the figures for accuracy and believe that, if errors do exist, they are minor and will not substantially affect the conclusions.

Are you like me and wonder why it seems that private schools win a large percentage of state championships and trips to the final four state tournaments? Does it appear that private schools are more often 'loaded' with talent compared to public schools?

The playoff and tournament brackets for several high school sports (football, volleyball, boys and girls basketball and soccer, baseball and softball) have been analyzed for the years 1999 to the 2006/2007 school year.

Determination of whether or not a high school is private was largely determined by entering the school name into the web site data base www.greatschools.net. In some cases it was necessary to 'google' the high school name and visit its web site.

TABLE 1. SUMMARY OF 1999 - 2007 SPORTS STATISTICS

SPORT	FOOTBALL	VOLLEYBALL	SOCCER (BOYS)	SOCCER (GIRLS)	BASKETBALL (BOYS)	BASKETBALL (GIRLS)	BASEBALL	SOFTBALL
# OF SCHOOLS 2006 SEASON	717	798	552	471	803	802	784	775
# OF PRIVATE SCHOOLS	73	112	88	75	108	111	93	93
% OF PRIVATE SCHOOLS	10.2%	14.0%	15.9%	15.9%	13.4%	13.8%	11.9%	12.0%
# OF FINAL FOUR PRIVATE	61 OUT OF 192	53 OUT 128	40 OUT OF 92	21 out of 56	43 out of 144	47 out of 144	36 OUT OF 112	5 OUT OF 112
% OF FINAL FOUR PRIVATE	31.8%	41.4%	43.5%	37.5%	29.9%	32.6%	32.1%	4.5%
RATIO % FINAL FOUR PRIVATE TO % PRIVATE	3.1	3.0	2.7	2.4	2.2	2.4	2.71	0.37
# OF CHAMPIONS PRIVATE	21 OUT 48	21 OUT OF 32	9 OUT OF 23	7 OUT OF 14	14 OUT 0F36	18 OUT OF 36	13 OUT OF 28	3 OUT OF 28
% OF CHAMPIONS PRIVATE	43.8%	65.6%	39.1%	50.0%	38.9%	50.0%	46.4%	10.7%
RATIO % CHAMPIONS PRIVATE TO % PRIVATE	4.3	4.7	2.5	3.1	2.9	3.6	3.9	0.9

This table is a summary of the relative performance of public and private schools in the state final four tournaments. The first line is the total number of schools in each sport in the latest season entering district tournament play, or in the case of football, the number of schools in the final computer rating. Line two is the number of private schools. Line 3 is the percentage of private schools entering the tournament, or Line 2 divided by Line1.

You would expect that, on the average over the years, the number of schools participating in the final four would also be about this percentage if talent were randomly distributed. Line 4 is the total number of private schools competing in the final four out of

the total number of teams. In the case of football, there were 8x6x4 = 192 final four playoff spots, of which 57 were private schools. Line 5 is line 4 expressed as a percentage. Line 6 is the ratio of Line 6 to Line 3. A number greater that 1 indicates that the fraction of private schools appearing in the final four is greater than what you would expect from the fraction of private schools in the total population. The percentage of private schools for all of the seasons considered is assumed to be the same as 2006, a reasonable assumption.

In 7 of the 8 sports considered here private schools are 2.2 to 3.1 times more likely to be in the final four than public schools. The lone exception is Softball. A similar count shows that private schools are 2.5 to 4.7 times more likely to win championships. Analysis of the football records available since 1980 indicates that private schools are 3.1 times as likely to be in the final four and 4.6 times as likely to be state champion.

These figures show that there is a pervasive bias against public schools. I believe that the primary reason for the athletic excellence of private schools is their ability to draw talented athletes from a wide geographical area compared to public schools and concentrate them in a relatively small student body. It could be argued that private school championships are 'tainted' because of this unfair advantage. The OHSAA has done much over the years to insure 'fair play.' However, they have yet to come to grips with a workable solution to the major problem as seen by the majority of high school sports fans.

Statistics is a strange beast. Take, for example, a coin toss. Each outcome of a 'fair' coin toss is considered to be a random event, with a probability of tossing a head is ½ or 0.50. The probability of tossing 6 consecutive heads is 1/64 or 0.0156.

Now take an example of a coin toss that is not 'fair'. Let the probability of a head result be 0.43 – a slight bias against a head. Then the probability of achieving 6 consecutive heads is 0.00632. The assumption of only a slight bias against a head results in a large difference (.01526/.00632 or about 2.4 to 1) in the likelihood of achieving 6 heads in a row. The number of events compounds the observed bias. Not coincidentally, 6 is the typical number of victories required for a basketball team to reach the final four, and 2.4 is close to the ratio of private to public schools appearing in the final four.

This compounding effect is similar to the situation where a private school takes an athlete from a public school. A slight talent bias is created that, when accumulated over a large number of athletes, schools and seasons, creates an unmistakable 'smoking gun' showing favoritism of private over public schools. By the same token, a statistical bias, as illustrated in the figures above, is indicative of a systematic bias against public schools.

Another way of looking at this statistical bias can be seen by looking at the last 8 years in football. In order for the percentage of private schools appearing in the final four to equal the fraction expected from the general population (10.2%), the private schools can not appear for the next 24 years!

I believe that the largest single factor causing this bias is the transfer of talent from public to private schools. It is time for the OHSAA to review the procedure for determining divisions. The private schools take talent from public schools with the result that the public schools are weakened. The private schools have developed tremendous sports facilities compared to public schools due in large part to large fan bases and boosters that result from successful programs. Naturally, talented athletes are drawn to these big-time programs, reinforcing the cycle of success, which further increases the bias. The educational environment at the private schools is generally considered better than the public schools, another plus. Finally, higher income families are more able to afford the private school tuition. Higher income families tend to be more successful, on the average, and would have children that have greater achievement at the high school level in academics and athletics. Whatever the reason(s), the fact remains that a demonstrated unfair advantage exists for the private schools.

SOLUTIONS

1. Keep the status quo. Public schools must then realize, or accept, their fate that they are inferior (statistically). They will fight the good fight and, occasionally, win. The playing field will remain tilted in favor of the private schools.

2. Some time ago the OHSAA considered separating the private and public schools into separate tournaments. This proposal was soundly defeated but I think it should be brought up again, considering the bias shown in the statistics above. Several states already have separate tournaments.

3. Open enrollment has been suggested as a solution to the bias problem. At this time over 70% of the school districts in Ohio have some form of open enrollment. Since the statistical record still shows a bias, apparently open enrollment is not a significant factor in reducing bias.

4. Some states require private schools to play up a division or use an enrollment multiplier. http://www.daytondailynews.com/sports/content/shared/oh/fbnation/fbstatelist.html is a web site summarizing the approach used in football in all of the states.

5. Another idea is to let the 'effective' size of a school with open enrollment be determined by the sum of the students in the school plus the size of the schools from which athletes are taken. For example, in football consider Chippewa High School (212 boys, Division IV) and St. Vincent/St. Mary High School (234 boys, Division IV). If one football player transfers from Chippewa to SVSM then the effective enrollment would be the sum of the two schools or 446 boys. This would make SVSM a Division II school, not Division IV, according to the present OHSAA breakdowns. It would represent more fairly that SVSM acquired their athletes from a larger population than the size of the student body would indicate.

Consider another example. Suppose Youngstown Cardinal Mooney (217 boys, Division IV) attracted football players from Struthers (232 boys, Division IV) and McDonald (102

boys, Division VI). The total number of boys in all three schools would be 551, which would make YCM a Division I school. It would only apply to athletes on the roster and would, of course be applied to all sports. More paperwork would be required for the schools acquiring athletes from other districts in order to create their 'dream teams.' Students that transfer to other schools but do not play sports would not have an effect on the combined enrollment; i.e., a Chippewa student that transferred to SVSM but did not play football would not change the 'effective' division of SVSM for football.

Of course, these examples must be refined to include all of the schools in the OHSAA. Because many private schools draw from a large geographical area, the effective enrollments can be quite large.

ACTION

I invite the OHSAA to collect data on athletes and their school district of origin to help determine the reason for the statistical bias demonstrated in the OHSAA record. It would be instructive to find the 'effective' size of the schools in say, football 2006, and create 'mock' playoff brackets.

It is time to make a change to the way schools participate in OHSAA tournaments to 'level the playing field.' Please contact your OHSAA District Athletic Board found at http://www.ohsaa.org/general/about/dis_boa.htm to request that this issue be given consideration. You should also contact your local high school principal who casts the vote on OHSAA items and is a conduit for expressing opinions to the OHSAA.

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