



## After the Buzzer: How Time on the Field Helps Women in the Workforce

Published June 29, 2010 in Arabic Knowledge@Wharton

Sports advocates have long insisted that playing sports in school contributes to a child's success later in life, and they point to various evidence as proof: a disproportionate number of CEOs with an athletic side; employers who look for a sports background on résumés to decide between candidates; and studies showing that people who play sports in high school go on to earn more than those who don't.

Still, looking at the correlation between sports and career success brings up a troubling chicken-and-egg question: Does playing sports help people become more successful, or are successful people just more likely to play sports?

It's hardly a hollow debate: More than seven million students participate in high school athletics every year -- more than half of all students nationwide. Yet arguments have raged for decades over the benefits of funding high school sports.

New research from Wharton takes a step towards answering the question. In her paper titled, "[Beyond the Classroom: Using Title IX to Measure the Return to High School Sports](#)," (PDF) Wharton business and public policy professor [Betsey Stevenson](#) offers empirical evidence that playing sports leads to more education and better employment opportunities.

"Many studies have documented a positive relationship between participation in high school athletics and educational aspiration, educational attainment and wages later in life," writes Stevenson. "What remains elusive is whether benefits associated with athletics are treatment effects (caused by participation) or merely selection effects (associated with the type of student who chooses to participate in athletics).... Athletes tend to be more extroverted, aggressive and achievement oriented. Are these traits they bring to athletics, or are these traits athletics bring to them? Are they learning valuable skills? Or are the high skilled simply more likely to participate in sports?"

Stevenson's paper focuses on Title IX of the 1972 Education Amendments to the 1964 Civil Rights Act, which expanded high school athletic opportunities for girls. Her research compares the variation in outcomes across states for girls who went to school before Title IX and after, and concludes that playing sports paid off. "A ten percentage point rise in state-level female sports participation generates a one percentage point increase in female college attendance and a one to two percentage point rise in female labor force participation," she notes. "Furthermore, greater opportunities to play sports lead to greater female participation in previously male-dominated occupations, particularly high-skill occupations."

### Formal Codes and Teamwork

According to Stevenson, the skills associated with athletic participation and success later in life "may include the ability to communicate, the ability to work well with others, competitiveness, assertiveness and discipline."

Sports participation may be especially helpful to girls because it gives them skills that they can use later in the business world, Stevenson points out. "Athletics is a highly regulated system in which social conflict is displayed in a positive light. From this, players learn how to compete and how to operate successfully under a formal code of rules and procedures. Furthermore, players are taught to function as a team. The development of these skills could be especially important for girls who must try to maneuver their way through traditionally male occupations later in life."



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Stevenson's research shows that there are large wage gains for those who play high school sports. She found 14% and 19% higher wages, respectively, among working women and men who were high school athletes. These wage gains fall when family background and school characteristics are taken into account -- illustrating the fact that children from more privileged backgrounds are more likely to play sports and have better education and employment outcomes. But even with such variables accounted for, the results are simply positive correlations, Stevenson notes -- not proof that playing sports actually leads to earning higher wages.

"It's long been suspected that the reason [child athletes] do better is because there's a certain type of person who participates in sports," Stevenson points out. "In other words, maybe these kids are really just self-starters."

Title IX created a national, real-life test case that Stevenson could use to compare, taking into account differences across states, the outcomes between groups of girls who had very few opportunities to play sports before Title IX, and those who did after it was introduced. That gave Stevenson a way to isolate the causal impact of high school sports on long-term outcomes. "The gold standard for trying to identify a causal effect ... would be to randomly assign some kids to play sports and some kids not to play sports," Stevenson notes. "And in effect, that's what Title IX did."

Signed into law in 1972 by former President Richard Nixon, Title IX mandates that "no person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity receiving financial assistance." By the time Title IX became law, most schools had eliminated discriminatory policies in other areas, but sports remained a hold out. "Girls throughout the United States had been virtually shut out of athletics prior to Title IX," Stevenson says. "Compliance with Title IX can be characterized as requiring a school to raise its female athletic participation rate to near equality with its male athletic participation rate. As a result, the proportion of female high school students participating in athletics rose from one in 27 females in 1972 to one in four by 1978."

For Stevenson, it was not only the increase in girls' sports participation that made Title IX a perfect experiment, but also the variation of the increase that occurred from state to state as a result of compliance with the law. Title IX requires states to bring girls' sports participation up to the level of boys' participation. In other words, if a state had 10% of boys playing sports, then that state would also need to allow 10% of girls participate. In states where few boys played sports -- whether due to climate, school size or some other factor -- fewer girls needed to be given the opportunity to participate in athletics. States with high levels of boys' sports participation, on the other hand, were forced to add more girls to sports teams to bring their schools into compliance with Title IX.

Stevenson measured the level of boys' pre-Title IX high school sports participation state-by-state, estimated the required increase in girls' participation, then compared those values with Census data to analyze the effect that high school sports had on female educational attainment, employment status, occupation and wages.

Breaking down the comparisons state-by-state essentially created 50 separate test cases, Stevenson notes, allowing her to sift out variables such as liberal bias, shifts in attitudes or the effects of other equal opportunity programs. "What I'm doing is removing anything that's due to a change over time that happened across the United States equally," she states. "So in that way, I eliminate changes in attitudes across the U.S. as a factor. I'm then looking for changes that are correlated with the states' pre-Title IX level of boys' sports participation. Even if states had different changes in attitudes, they don't affect my analysis unless they happened in a way that matches the pattern of sports participation."

### **Pursuing 'Male' Occupations**

Her results indicate that high school sports had a causal impact on both education and career. "It appears as if sports participation induced by Title IX had a large and statistically significant effect on female educational attainment," she writes. "States with bigger compliance problems (and thus bigger predicted increases in female sports participation) had bigger increases in educational attainment for women."

The impact of sports reverberates later in life when it comes to employment. Stevenson found that a

ten-percentage point increase in girls' sports participation generates an increase of 1.9 percentage points in the probability of being employed. "In 1980, 62% of 25 to 34 year-old women were employed and 47% were employed full time," she writes. "These numbers rose 10 percentage points over the ensuing two decades and were 72% and 57% respectively in 2000. Since Title IX is associated with a roughly 30% rise in sports participation, my estimates suggest that a roughly four percentage point rise in female labor force participation is attributable to the increased opportunities to participate in sports. In turn, this suggests that up to 40% of the overall rise in the employment of 25 to 34 year-old women is attributable to Title IX."

Sports participation also appears to have had an impact on career choice, Stevenson adds. Using job codes from Census data, Stevenson documented a shift in the types of jobs women chose. She looked at women in sports-related jobs first, and found that "Title IX can explain *all* of the growth in employment of women in sport-related occupations between 1980 and 2000."

Getting the chance to batter up or sink a three-pointer in high school also led more women to pursue traditionally "male" occupations, Stevenson found. She defines "male" occupations as occupations in which at least two-thirds of the workers under the age of 50 in 1970 were male -- accountants, veterinarians and lawyers are examples. "Female" occupations are the opposite (in which two-thirds of the workers were women) and include categories such as librarians, nurses and book keepers. "Mixed" occupations -- such as hairstylist and real estate agent --- made up the rest. "These occupations differ in their average wages as well as their gender composition, with those in 'male' occupations earning roughly double what those in 'female' occupations earn in a year, and nearly 60% more per hour," Stevenson points out.

Stevenson found that states with greater growth in opportunities for girls to play sports saw a greater number of women drawn to "male" and "mixed" occupations. "A ten percentage point rise in athletic opportunities led to a 1.1% rise in the probability of females being employed in a 'mixed' occupation, a .45 percentage point rise in the probability of being employed in a 'male' occupation, and a .36 percentage point rise in the probability of being in a 'female' occupation," she says. After adding controls for regional changes and economic conditions, Stevenson concludes that Title IX is associated with 15% of the rise in female employment in "male" occupations and 10% of the overall rise in "mixed" occupations.

Finally, Stevenson looked at the relationship between athletic opportunities generated by Title IX and the subsequent wages women received. Although women who participated in sports did seem to earn more, the impact on wages was difficult to sort out from the effect on employment more generally. An examination of women's hourly wages produced a "highly variable relationship between sports participation and wages," Stevenson writes. "While the relationship shown is positive ... it is difficult to draw any conclusions from this experiment on the true causal relationship between sports participation and wages."

While Title IX's impact on women's wages was inconclusive, Stevenson believes the overall gist of the data is clear: Sports do have an impact on children -- and in turn, on America's workforce. "Employers have long looked for sports participation on résumés, and they've been doing the right thing," Stevenson says. "It's useful to know that there are real reasons why we use the criteria that we use. While this paper doesn't speak directly to hiring practices, it does say that sports causes better outcomes for kids. So it does give some justification to employers who look for sports participation when deciding who to hire."

Stevenson notes that her research provides evidence that can be used in policy debates about sports funding. "There's something to be said for rigorous empirical evidence of a policy program," she says. "We've known for a long time that sports were correlated with good outcomes, but we didn't know how much was causal. So it has been hard to do a real cost-benefit analysis."

Stevenson's research on Title IX was cited by U.S. Secretary of Education Arne Duncan as evidence to support the Department of Education's recent decision to strengthen Title IX. "Title IX was an important public policy impacting the lives of many girls," Stevenson notes. "About half of all girls will now play sports compared to just a handful before Title IX. I show [in my paper] that Title IX is responsible for a large share of that increase.... U.S. schools have long under-performed other countries in standardized tests, but when you look at our workforce we have one of the most productive in the world. The experiment designed by Title IX proves that extracurricular activities like sports play an important role in

creating the skills that make us so productive."

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