3-31-2015

Students Learning from Atlanta Public Schools Cheating Scandal

Thomas M. Van Soelen
Dordt College, thomas.vansoelen@dordt.edu

Follow this and additional works at: http://digitalcollections.dordt.edu/faculty_work
Part of the Education Commons, and the Statistics and Probability Commons

Recommended Citation
http://digitalcollections.dordt.edu/faculty_work/818

This Article is brought to you for free and open access by Digital Collections @ Dordt. It has been accepted for inclusion in Faculty Work: Comprehensive List by an authorized administrator of Digital Collections @ Dordt. For more information, please contact ingrid.mulder@dordt.edu.
Students Learning from Atlanta Public Schools Cheating Scandal

**Abstract**
Access full-text article on publisher’s site:

http://exclusive.multibriefs.com/content/students-learning-from-atlanta-public-schools-cheating-scandal/education

**Keywords**
students, Atlanta Public Schools, cheating, competency based educational tests

**Disciplines**
Education | Statistics and Probability

This article is available at Digital Collections @ Dordt: http://digitalcollections.dordt.edu/faculty_work/818
Students learning from Atlanta Public Schools cheating scandal

Lori Hetherington at Alpharetta High School, just north of the heart of Atlanta, was in her first year teaching Advanced Placement Statistics to juniors and seniors. New to the course and new to teaching many gifted learners, she needed to complete a project as part of a gifted endorsement course sequence.

As Hetherington sat at home in 2010, the news of the Atlanta Public Schools cheating scandal saturated every local channel, but everything was presented through the eyes of reporters. When Gov. Nathan Deal assigned two special prosecutors, everything changed.

As a result of this investigation, everything became public: their findings, the findings of independent statisticians, and — most importantly for Hetherington — the raw testing data. It was a statistics teacher's dream — and the fodder she needed for her project.

Hetherington created an award-winning instructional unit of study in which students applied their new statistical understandings to a real-world, timely and local situation. It addressed the overarching question, "How were they caught?"

Five years later, as closing arguments were presented earlier this month in the court case prosecuting several Atlanta educators, Hetherington's unit is still highly relevant and engaging for her students. In fact, something quite important happened in her classroom this year.

After Hetherington launched the unit with a video clip of Brian Williams from NBC's Rock Center, a young woman raised her hand in the back of the room.

"That was me," she said. "I was one of those kids."

Having experienced a teacher that prompted her during standardized testing, this young woman's mother moved her family northward, into a new school district.

"I've never had that before," commented Hetherington. "Even after studying it all those years, having someone with first-hand experience was incredible."

In this project, students do the things statisticians would do: Carry out a hypothesis test, analyze large-scale data charts with wrong-to-right erasures, collect population and enrollment data, calculate z-scores. Students find which schools appear suspicious.

One of the main understandings students have gathered at this point in the course is that a three-standard deviation difference can be significant. One of the schools in the cheating scandal has 50 standard deviations in their wrong-to-right erasures.
"It stuns them," Hetherington added. "In fact, they often ask, 'How did they think they wouldn't get caught?'"

At the project end, students position themselves in the shoes of the investigators, writing a report in layman's language that explains their findings:

"When calculating the test statistic (z score) for School D, we found that the sample mean was approximately 7.32 standard deviations above the population mean. From this, we derived a p-value of 0 percent, making the likelihood of the number of erasures being this high by chance 0 percent.

"On the other hand, the calculations performed with School E's data showed to be more promising. The mean recorded for the sample of third-grade math CRCT erasures was 1.92, whereas the population mean for all students that took the third-grade math CRCT was 1.87. When calculating the test statistic, the sample mean was only 0.184 standard deviations above the population mean making the likelihood of this number of erasures occurring by coincidence 42.7 percent.

"Since School D's results proved to be unlikely to happen by chance, there is a strong possibility that cheated may have occurred. However, School E's results showed that their mean number of erasures was feasible to have happened by chance, meaning that cheating probably did not occur at this school."

Students found the project quite meaningful, as summarized by this senior: "I can wholeheartedly say that the CRCT investigation project was the most rewarding project I've ever completed in high school. Not only did the project allow us to investigate the scandal, it truly opened our eyes to the raw power of hypothesis testing and allowed us to use our statistics knowledge in a topic that all of us were well aware of."

Creating authentic learning experiences for students isn't easy work. However, the inspiration sometimes isn't hard to find. It can be as simple as turning on the evening news.