www.fi.uu.nl/toepassingen/28739

Math in trials

Abstract

People's intuitive feel for statistical reasoning is often biased and/or incorrect, which can have large detrimental consequences. During this activity the courtcase of Sally Clark is used to raise students' awareness of their biases in statistical reasoning.

Keywords

- Statistical reasoning
- (In)dependent events
- Probability
- Coincidence
- Genetics

Student's ability to assess such statistical situations in a mathematically grounded way is an important part of their citizenship education. This social context emphasises the meaningfulness and importance of mathematics in everyday life. When desired, the topic can be connected to the biology lessons by investigating the underlying genetics and the link to probability.

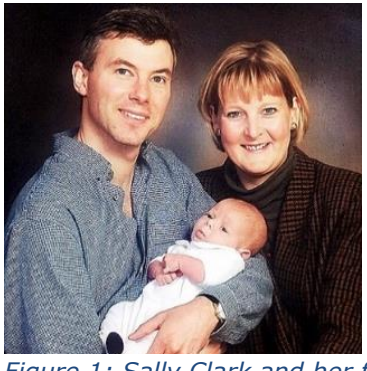

Figure 1: Sally Clark and her family

*In Great Britain, November 1999, the respected lawyer Sally Clark has been wrongly accused of and imprisoned for the murder of her children. Clark came under suspicion of murder after her two sons (*1996, *1997) died within a short period of time after their birth.*

Figure 2: Sally Clark, after the conviction and imprisonment

MaSDiV
Supporting Mathematics and Science Teachers in adressing Diversity and promoting fundamental Values

Co-funded by the Erasmus+ Programme of the European Union

Pädagogische Hochschule Freiburg
Université des Sciences de l'Education · University of Education

ICSE
International Centre for STEM Education

Lesson implementation

Introduction: Texts or videos about the case of Sally Clark.

Activities for students:

- Try to understand the statistical reasoning behind both the conviction and the (three year later) acquittal of Sally Clark.
- Explore the difference between dependent and independent events with dice and a marble-draw. What are the similarities with the case of Sally Clark?
- Organize a (large) lottery in which there is one winner. Discuss with the group why the winning feels like luck instead of coincidence. Draw similarities with the case of Sally Clark.
- Debate with the class whether mathematics should really play an important role in the mediation and evidence of a crime, because of the risk of misinterpretation.
- Role-play court case: With your fellows take on the role of offense and defence in the case of Sally Clark. Make sure you statistically ground your arguments.