FORUM

HOW STATISTICS AND PROBABILITY CAN BEST BE INCORPORATED INTO THE OVERALL SCHOOL PROGRAM?

Chaired by Peter Holmes
The University of Nottingham
United Kingdom

Panel   Rolf Biehler (Germany) Carmen Batanero (Spain)

Carmen posed the questions:

1. Is it possible to understand what is probability using only a frequentist approach?
2. Are the objectives for probability included in new curricula proposals realistic? At what age should an experimental approach be complemented with a mathematical approach?
3. What are the real difficulties for students doing EDA and in understanding the underlying mathematical concepts?
4. Is it possible and reasonable to avoid ideas of chance, probability, and inference when dealing with specific problems?

and Rolf posed the following questions:

1. Do we have a software problem? Lack of adequate programs? For doing statistics? For learning statistics? What are our ideals? (When) do we expect progress?
2. Software use tends to bring in: more different graphs more variables more complex problems & results (How) can we cope with this problem?
3. Which patterns of software use do students develop? How does software use influence their statistical thining? Cultural & gender differences?
4. How can we balance authentic real data analyses and carefully designed learning activities?

General discussion

The main points addressed were:

Dani Ben-Zvi, Israel: The use of classes structured by teachers and the use of individual projects.

Koirala Hari, USA Emphasised the context using classical conceptions helps students to move from one point to another.

Iddo Gal, Israel: Students find it difficult to understand probability and frequency distributions. There is a need to find a way to integrate statistics so students can understand.

Koirala Hari, USA: Teacher provides opinion, student questions this and teacher quantifies his opinion.

Salaha Hahillah, Pakistan: Suggested the teaching of the history of statistics helps the students understand it.

John Truran, Australia: There is a session on the history of statistics at ICOTS5

Anne Hawkins, USA: Some historical work done by John Bibby, David Vere-Jones and Zolton Kenessy of ISI

Manfred Borovcnik, Austria: Claimed that it is not possible to learn probability by the frequencist approach. Suggested multiple aproach - look at the bakground of the data and use a mixed approach of probability and EDA

Spanish teacher: I am a teacher of teachers. How can I attack the problem of the teacher who does not understand? How can I attack the problem of teaching children to understand?

Peter Holmes, UK: We will have to leave it at that. The question is too difficult to answer in the short time we have.

Brian Phillips, Australia: We have a lots of questions but not many answers - these will be the subject of discussions at the next session of ICOTS in Singapore in 1998 and at other IASE meetings.

Anne Hawkins, UK (IASE President): Thanks to all the speakers and for all participants for attending. A special thanks to Brian for organising this session.