RISK PERCEPTION AND RISK COMMUNICATION OF SCHOOL STUDENTS: FIRST EMPIRICAL RESULTS FROM RIKO-STAT

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MOTIVATION OF THE STUDY

This year, for the first time, risk has been included in a session of the ICOTS, as a topic for instruction in school in connection with statistics education. The urgency to include mathematical tools for modeling risk in the school curricula has emerged as a consequence of the observed lack of competency in risk assessment not just of the lay population but of experts as well (Gigerenzer, 2002; Gigerenzer, Gaissmaier, Kurz-Milcke, Schwartz, & Woloshin, 2009). So far there has been almost no research on children's risk perception let alone on children's risk communication, although the need for such studies is beginning to be felt by a large proportion of statistics educators (Martignon & Krauss, 2009). We report on first results of an empirical study on how nine year-old children and fifteen year-old youngsters perceive and communicate about risk.

DESIGN, METHOD AND RESULTS

This study is part of the larger RIKO-STAT study (Kuntze, Engel, Martignon, Gundlach in this volume) aimed at investigating competencies in solving probability tasks, risk perception, risk communication and knowledge about functions as well as various motivational variables for statistical literacy. The items used to evaluate risk perception and risk communication included a typical gamble and a Ludo game situation. Both items were part of a larger design, including two further similar tasks. Furthermore, both items were chosen because of their potential as motives for further discussion with the students on modelling risk and on the relevant difference between relative and absolute risk. The sample examined in this component of RIKO-STAT amounts to 272 school students, of which 120 were in fourth grade and 152 in ninth grade (age 15) of secondary school. The data on the gamble situation exhibit interesting gender differences: girls tend to be more risk averse than boys. This result appears to confirm the thesis that risk averseness is not just a feature of female adult behaviour (Pinker, 2002) but is also a characteristic of girls' attitudes at an earlier stage. In general the data appear to support beliefs in youngsters' lack of effective tools for assessing and communicating risks. These results motivate the development of research programmes for implementing risk assessment and risk communication as a topic in school curricula of probability and statistics. Moreover they confirm that an early familiarization with such topics may strengthen intuitions on risk and convey competencies for good decision making in risky situations.

CONCLUSIONS

The results presented in this poster appear to validate the choice of items and the design of the study. They confirm beliefs on the urgency of implementing risk education in school and motivate the development of well designed intervention units for introducing risk as a topic of probabilistic education at an early stage in schools.

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