

DISCUSSANT SUMMARY: TOPIC 4 – INCREASING POWER OF TECHNOLOGY AND ITS USE FOR DOING STATISTICS AND FOR ENHANCING LEARNING AND UNDERSTANDING OF KEY STATISTICAL CONCEPTS

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PRESENTERS

	Title	Presenter/Co-author(s)
Short paper	Learning analytics as a tool to permanently feedback lecturers and teaching assistants	Florian Berens (Germany)
Long paper	First Steps Toward the Development of ‘Big Data Acumen’ in Statisticians of Developing Countries	Saleha Naghmi Habibullah (Pakistan)
Short paper	New Zealand Teachers' Perceptions when Hearing Waiting-Time Distributions	Amy Renelle & Stephanie Budgett (New Zealand)
Short paper	Simulation-based Exploration of Surveys with Non-response	Von Bing Yap (Singapore)

PRELIMINARY RESEARCH QUESTIONS

- How can new technology tools enrich students’ statistical practice, such as gathering organizing, structuring, modeling, and interpreting data and making inferences?
- How can digital tools be implemented in classrooms? In which way can the orchestration take place?
- Which digital tools are adequate for different purposes? How can the balance of learning the tool and using the tool be realized?
- How does technology support pedagogical approaches that are needed to enable students to develop data acumen and deepen foundational background in statistics?

KEY DISCUSSION THEMES

- Which digital tools are adequate for different purposes? How can the balance of learning the tool and using the tool be realized? What is the potential of tools on mobile phones, what are their limitations? What technology is affordable in developing countries and for students from non-affluent families? Which are the requirements for tools for teaching and learning data science?
- How can we design learning environments where new technology tools enrich students’ statistical practice, such as gathering organizing, structuring, modeling and interpreting data and making inferences?
- What is reasonable content of introductory courses in data science? What content shifts are necessary: moving from statistical inference to predictive modelling, which has to be embedded into the scientific method; new types of messy data, where bias has to be taken into account by context knowledge; bias has to be discussed not only in univariate but also in multivariate situations.

- What technology use beyond using tools for learning and doing statistics and data analysis is promising? What can be the role of sound in addition to interactive visualizations for learning about distribution and randomness?
- What support can be got from adequate learning platforms, particular in the pandemic phase? What is the potential of quizzes for immediate feedback, chat bots for answering students' statistical questions, audience response systems, data collected about students' successes and misconceptions from learning analytics data for redesigning a course?