EDITORIAL

Welcome to the second regular issue of *SERJ* for 2025! As I complete my three-year term as Editor of Regular Papers for *SERJ* at the end of 2025, I would like to thank the people who were instrumental in helping me to transition into the role of Editor and who provided important support during my time as Editor. Jennifer Kaplan (Middle Tennessee State University, USA) mentored and supported me as I transitioned from Associate Editor to Editor; she provided invaluable insights into managing editorial processes to perform the work efficiently. Noleine Fitzallen (University of Tasmania, Australia) copyedited and finalized accepted manuscripts in her role as Assistant Editor. More recently, Stephanie Budgett (University of Auckland, New Zealand) has provided rapid finalization of manuscripts as Assistant Editor–Manuscripts so that we can fulfill our new, fast-track publication policy of a short turnaround time from acceptance to publication. Anna Fergusson (University of Auckland, New Zealand), as Assistant Editor–Technology, has provided timely support in maintaining the *SERJ* OJS site and in her behind-the-scenes work in transitioning to new storage and backup systems for *SERJ* as part of the International Association for Statistics Education's move to a new website and system. I also want to thank the *SERJ* Advisory Board, including current and past board members Iddo Gal, Rolf Biehler, Aisling Leavy, Daniel Frischemeier, and Jane Watson, for their keen insights as we updated and clarified journal policies and adopted new policies such as the [Artificial Intelligence Use Policy](). Last, but certainly not least, I want to thank the hardworking team of Associate Editors who manage the *SERJ* reviewing process and provide timely and thorough reports to ensure the publication of high-quality manuscripts in *SERJ*. We have had two recent retirements: Matthew Beckman (Pennsylvania State University, USA) and Susanne Podworny (Paderborn University, Germany) have completed their three-year terms as Associate Editors. Please join me in thanking them for their service to *SERJ* and in wishing them well in their future endeavors.

Turning now to 2026, the new Editor for *SERJ* will be Daniel Frischemeier (University of Münster, Germany). Daniel has served as our Special Issues Editor for five years and will be stepping down from that role to serve as Editor. Having worked with Daniel in his role as Special Issues Editor, I have no doubt that his transition to Editor will be smooth and that *SERJ* will be in good hands. Daniel will provide excellent leadership. The new Special Issues Editor will be Leandro de Oliveira Souza (Universidade Federal de Uberlândia, Brazil), who was highly recommended to the Advisory Board. I look forward to working with him as he transitions into this new role. We also welcome two new Associate Editors to the editorial team, V. N. Vimal Rao (University of Illinois Urbana-Champaign, USA), and Michelle Wilkerson (University of California, Berkeley, USA). We wish Daniel, Leandro, Vimal, and Michelle the best of luck as they transition into their roles on the *SERJ* editorial team.

This issue of *SERJ* contains four articles and acknowledges referees who submitted reports between January 1, 2025, and October 22, 2025. Two of the articles focus on probability, with secondary teachers' attitudes towards probability and its teaching as the focus of one article, and primary preservice teachers' reactions to students' responses to a probability problem as the focus of the other. The remaining two articles focus on students' literacy for students aged 12–17 years. The third article focuses on students' statistical literacy as they reason about measures of central tendency, and the fourth article reports the outcomes of a pedagogical intervention to develop students' data literacy regarding data collection.

In their empirical work, Ane Izagirre, Jon Anasagasti, and Ainhoa Berciano investigated secondary in-service mathematics teachers' attitudes towards probability and whether teachers' attitudes differed by gender, academic training (e.g., mathematics, engineering, architecture), or number of years teaching mathematics. They used Estrada and Batanero's (2015) *Attitudes towards Probability and its Teaching Scale* to measure teachers' attitudes along dimensions of attitudes towards probability, attitudes towards the teaching of probability, and value towards probability and its teaching. They further considered attitudes towards probability for affective, cognitive competence, or behavioral components, and attitudes toward the teaching of probability for affective, teaching competence, and behavioral components. The authors found that over half of the surveyed teachers had overall positive attitudes towards probability and its teaching, and positive attitudes along the three dimensions. Although they found almost no meaningful gender differences for the overall scale or among its dimensions and components, they found meaningful differences in attitudes towards probability and towards probability

teaching among teachers with academic training in mathematics compared to architecture, experimental sciences, and engineering. They further found some meaningful differences between mathematics teaching experience and attitudes. Although the study was limited to teachers from the Autonomous Community of the Basque Country, it nonetheless reaffirms the value of teaching experience and provides some insights into additional professional learning in probability that might benefit teachers with specific academic backgrounds.

Rather than attending to teacher affect, María del Mar López-Martín, María Burgos Navarro, and Verónica Albanese focused on teachers' didactic-mathematical knowledge and investigated how prospective primary teachers interpreted three students' responses to a probability task and the strategies they suggested to further the students' understandings. The probability task was one in which students used proportional reasoning to determine the composition of an urn that would yield the same probability of success for drawing a ball of a certain color as a second urn that contained a different number of balls. The authors used the Didactic-Mathematical Knowledge and Competencies model (Godino et al., 2017) to consider teachers' knowledge by identifying student errors and reacting to those errors. They found that their prospective teachers exhibited varied success with identifying student errors and particularly struggled to assess students' justifications for their responses. Additionally, the teachers were more successful with identifying errors than they were in identifying pedagogical strategies to address the errors. The study yields insights about teachers' knowledge in relation to determining sample spaces that yield equal probabilities of success.

Turning to students' reasoning and learning, Karin Landtblom and Lovisa Sumpter investigated students' expressed literacy about measures of central tendency for students between the ages of 12 and 13. They used a framework based on Gal (2002) to consider elements of students' knowledge and dispositions in response to how they would explain mean, median, and mode to someone with no prior formal introduction to the measures; which measure was easiest and hardest to explain; and which measure was most and least useful. Approximately 50% or more of the students expressed correct procedures for all three measures, although their explanations were mostly incomplete for median and mode, in that they did not articulate one or more relevant properties. Approximately 75% or more of the students also tended to describe the three measures sans context, using mostly standard vocabulary for the mean and synonyms of standard vocabulary for the median and mode—results that might be based on students' familiarity with the concepts. Students tended to find the mode easiest to explain and the median hardest to explain, and they tended to view the mean as the most useful and the median as the least useful measure of central tendency. The latter might be based on the intertwining of students' conceptions and their context knowledge. For example, more than 25% of the students did not believe the median was useful because it was not associated with real-life situations, only school contexts. Although the study's participants were all students educated in Sweden, the study nonetheless offers new insights into student struggles with measures of central tendency that might transcend school settings and language.

In their work with slightly older students aged 14–17 years, Verena Witte, Angela Schwering, and Daniel Frischemeier investigated a pedagogical intervention focused on data collection as a sub-skill of data literacy, which is an increasingly important outcome for students in today's data-centric world. In particular, they considered students' data collection in the real world and using immersive virtual reality to determine the extent to which students could critically evaluate data if they engaged in its collection and whether any of the same benefits might be observed with students who virtually collect data. This experimental study included a control group that involved no data collection but included work with similar data downloaded from a repository. They found that, on average, students directly involved in data collection in the real world and students who collected data through immersive virtual reality meaningfully improved their scores on a posttest by identifying a confounding factor and combining their calculations with reasoning based on context. In contrast, the control group exhibited a small but not statistically meaningful improvement on the posttest. Control group students tended to focus on calculations without embedding the numbers or calculations in context. Interestingly, there were no statistically meaningful differences in average pre- to posttest improvements between the two data collection groups. This innovative study revealed evidence of the benefits of immersing students in the data collection process, and moreover, the promise of immersive virtual reality for advancing students' reasoning and data literacy.

The authors and editors hope that *SERJ* readers enjoy this set of papers. Many thanks again to the editorial team, reviewers, and authors, without whom this issue would not exist.

REFERENCES

Estrada, A., & Batanero, C. (2015). Construcción de una escala de actitudes hacia la probabilidad y su enseñanza para profesores [Construction of a scale of attitudes towards probability and its teaching for teachers]. In C. Fernández, M. Molina, & N. Planas (Eds.), *Investigación en Educación Matemática XIX* (pp. 239–247). Simposio de la Sociedad Española de Investigación en Educación Matemática.

Gal, I. (2002). Adults' statistical literacy: Meaning, components, responsibilities. *International Statistical Review, 70*(1), 1–52. https://doi.org/10.2307/1403713

Godino, J. D., Giacomone, B., Batanero, C., & Font, V. (2017). Enfoque Ontosemiótico de los conocimientos y competencias del profesor de matemáticas [Ontosemiotic approach to mathematics teachers' knowledge and competences]. *Bolema: Boletim de Educação Matemática, 31*(57), 90–113. https://doi.org/10.1590/1980-4415v31n57a05

SUSAN A. PETERS
Editor