



Promoting Civic Engagement via Exploration of Evidence: Challenges for Statistics Education

A Strategic Partnership of the Universities of Durham, Haifa, Ludwigsburg, Paderborn, Porto and Szeged



Publications

2018

Biehler, R. (2108). Design principles, realizations and uses of software supporting the learning and the doing of statistics – A reflection on developments since the late 1990s.
https://icots.info/10/proceedings/pdfs/ICOTS10_1B1.pdf?1531364185

Biehler, R., Frischemeier, D. & Podworny, S. (2018). Elementary preservice teachers' reasoning about modeling in a civic statistics context. *ZDM Mathematics Education*. DOI 10.1007/s11858-018-1001-x

Biehler, R., Frischemeier, D. & Podworny, S. (2018). Civic Engagement in Higher Education: A university course in civic statistics for mathematics preservice teachers. *Zeitschrift für Hochschulentwicklung*, 13(2), 169-182.

Engel, J. (2018). Exploring civic statistics with CODAP. In P. Kovács (Ed.), *Proceedings of Challenges and Innovations in Statistics Education Multiplier Conference of ProCivicStat*: University of Szeged.

Engel, J. (2018). Lehren und Lernen aus Daten: Data Science als Perspektive des Mathematik- und Informatikunterrichts. In: Pinkernell, G. & Schacht, F. (Hrsg.). (2018). *Digitales Lernen im Mathematikunterricht*. Tagungsband der Herbsttagung des Arbeitskreises Mathematikunterricht und digitale Werkzeuge vom 22.9. bis 24.9.2017 in Heidelberg. Hildesheim: Franzbecker.

Engel, J., Martignon, L., & Erickson, T. (2018). Teaching and learning about tree-based methods for exploratory data analysis. In: M. A. Sorto, A. White, & L. Guyot (Eds.), *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*, July, 2018, Kyoto, Japan. Voorburg, The Netherlands: International Statistical Institute.
http://icots.info/10/proceedings/pdfs/ICOTS10_7F3.pdf?1531364287

Engel, J. (2018). Learning from data about society: perspectives and experiences from ProCivicStat. Education at school level – Educational contributions from statistics, computer science and sociocultural studies. In https://www.telekom-stiftung.de/sites/default/files/PaderbornSymposiumDataScience2017_0.pdf

Engel, J. & Frischemeier, D. (2018). Statistical Literacy and Civic Engagement: Teaching and Learning with Data about Society. In: *Fachgruppe Didaktik der Mathematik der Universität Paderborn (Hrsg.), Beiträge zum Mathematikunterricht 2018* (pp. 79-80). Münster: WTM-Verlag.

Frischemeier, D., Podworny, S. & Biehler, R. (2018). Chancen und Herausforderungen für die Implementation von Zivilstatistiken in der Lehramtsausbildung. *Stochastik in der Schule* 39(1).



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Frischemeier, D., Podworny, S., & Biehler, R. (2018). Activities for promoting Civic statistical knowledge of preservice teachers. In P. Kovács (Ed.), *Proceedings of Challenges and Innovations in Statistics Education Multiplier Conference of ProCivicStat*: University of Szeged.

Gal, I., & Ograjensek, I. (2018). Developing official statistics literacy: A proposed model and implications. In P. Kovács (Ed.), *Proceedings of Challenges and Innovations in Statistics Education Multiplier Conference of ProCivicStat*: University of Szeged.

Kovács, P., Kazár, K., & Kuruczleki, É. (2018). Social and Economic Networks and Financial Literacy in Statistics Classes: Lessons and Experiences. In: M. A. Sorto, A. White, & L. Guyot (Eds.), *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*, July, 2018, Kyoto, Japan. Voorburg, The Netherlands: International Statistical Institute. http://iase-web.org/icots/10/proceedings/pdfs/ICOTS10_C115.pdf

Kovács, P., Kazár, K., & Kuruczleki, É. (2018). Using visualisation tools in classes. In P. Kovács (Ed.), *Proceedings of Challenges and Innovations in Statistics Education Multiplier Conference of ProCivicStat*: University of Szeged.

Lopes, P., Teixeira, S., Campos, P., Ridgway, J., and Nicholson, J. (2018). CivicStatMap – mapping dataset, viz tools, statistical concepts and social themes. In M. A. Sorto, A. White, & L. Guyot (Eds.). *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*. Voorburg: International Statistical Institute. http://iase-web.org/icots/10/proceedings/pdfs/ICOTS10_7A3.pdf

Nicholson, J., & Ridgway, J. (2018). Real-world contexts in statistics components of UK mathematics examinations: aiming forward, walking backwards. In M. A. Sorto, A. White, & L. Guyot (Eds.). *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*. Voorburg: International Statistical Institute.
http://icots.info/10/proceedings/pdfs/ICOTS10_1E2.pdf?1531364186

Podworny, S. & Frischemeier, D. (accepted). Krankenhäuser, Unfälle und Statistik. Mini-Projekte zur Thematisierung von Zivilstatistik im Unterricht. *Stochastik in der Schule* 39(1).

Podworny, S., Frischemeier, D. & Biehler, R. (2018). Enhancing civic statistical knowledge of secondary preservice teachers for mathematics. In: M. A. Sorto, A. White, & L. Guyot (Eds.), *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*, July, 2018, Kyoto, Japan. Voorburg, The Netherlands: International Statistical Institute.

Podworny, S., Frischemeier, D. & Biehler, R. (2018). Zivilstatistisches Wissen in der Lehramtsausbildung fördern: Design und Durchführung eines universitären Seminars für Lehramtsstudierende der Mathematik. In: Fachgruppe Didaktik der Mathematik der Universität Paderborn (Hrsg.), *Beiträge zum Mathematikunterricht 2018* (pp. 1923-1926). Münster: WTM-Verlag. https://iase-web.org/icots/10/proceedings/pdfs/ICOTS10_3G3.pdf



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Ridgway, J., Ridgway, R., & Nicholson, J. (2018). Data Science for all: A stroll in the foothills. In M. A. Sorto, A. White, & L. Guyot (Eds.). *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*. Voorburg: International Statistical Institute. http://icots.info/10/proceedings/pdfs/ICOTS10_3A1.pdf?1531364253

Ridgway, R., Nicholson, J., and Gal, I. (2018). Understanding statistics about society: A framework of knowledge and skills needed to engage with civic statistics. In M. A. Sorto, A. White, & L. Guyot (Eds.). *Looking back, looking forward. Proceedings of the Tenth International Conference on Teaching Statistics (ICOTS10)*. Voorburg: International Statistical Institute. http://iase-web.org/icots/10/proceedings/pdfs/ICOTS10_7A1.pdf?1531364285

Ridgway, J., Nicholson, J., Sutherland, S. and Hedger, S. (2018). Critical Statistical Literacy and Interactive Data Visualisations. In J. Evans, S. Ruane, & H. Southall (Eds.). *Data in Society: Challenging Statistics in an Age of Globalisation*. The Policy Press, University of Bristol, UK.

Schiller, A., & Engel, J. (2018). The importance of statistical literacy for democracy - Civic-education through statistics. In P. Kovács (Ed.), *Proceedings of Challenges and Innovations in Statistics Education Multiplier Conference of ProCivicStat*: University of Szeged.

Schiller, A. & Engel, J. (2018). Förderung von Mündigkeit durch das Modul kritisches Hinterfragen datenbasierter Aussagen. In Institut für Mathematik der Universität Potsdam (Hrsg.), *Beiträge zum Mathematikunterricht 2017* (pp. 853-856). Münster: WTM-Verlag.

Schiller, A. & Engel, J. (2018). Civic Statistics in the training of pre-service mathematics teachers. In: *Fachgruppe Didaktik der Mathematik der Universität Paderborn (Hrsg.), Beiträge zum Mathematikunterricht* (pp. 1587-1590). Münster: WTM-Verlag.

Wassner, C, Podworny, S. & Biehler, R. (2018). Reale Datenkompetenz im Unterricht fördern. In: *Fachgruppe Didaktik der Mathematik der Universität Paderborn (Hrsg.), Beiträge zum Mathematikunterricht* (pp. 1423-1426). Münster: WTM-Verlag.

2017

Biehler, R., Frischmeier, D. & Podworny, S. (2017). Design, realization and evaluation of a university course for preservice teachers on developing statistical reasoning and literacy with a focus on civic statistics. Invited paper for Invited Paper Session 035 (Statistics Education for Social Engagement) at the World Statistics Congress 61, Marrakech, Morocco.

Engel, J. (2017). Statistical Literacy for Active Citizenship: A Call for Data Science Education. In: *Statistics Education Research Journal*, 16(1), 44-49.

Podworny, S., Frischmeier, D., & Rolf Biehler Design, Realization and Evaluation of a Statistics Course for Preservice Teachers for Primary School in Germany. https://iase-web.org/documents/papers/sat2017/IASE2017%20Satellite%20R15_PODWORNY.pdf



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Porter, T., Pielke, R., Ridgway, J., Rojo, N., Schubert, A., and Veira, X. (2017). Statistics in the Digital Era. *Power from Statistics: data, information and knowledge*. Eurostat: Brussels. DOI: 10.2785/303736

Ridgway, J. (2017). *Inquiry into “Fake News” written evidence submitted to the House of Commons Culture, Media and Sport Committee.*

<http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/culture-media-and-sport-committee/fake-news/written/48179.html>

Ridgway, J., & Nicholson, J. (2017). The Future of Statistical Literacy is the Future of Statistics. *Statistical Education Research Journal 16(1)*, 8-14. [https://iase-web.org/documents/SERJ/SERJ16\(1\)_Editorial.pdf](https://iase-web.org/documents/SERJ/SERJ16(1)_Editorial.pdf)

Ridgway, J., Nicholson, J., Campos, P., & Teixeira, S. (2017). Tools for visualising data: a review. In A. Molnar (Ed.). *Teaching Statistics in a Data Rich World*. Proceedings of the Satellite Conference of the International Association for Statistical Education. Voorburg: International Statistical Institute. https://iase-web.org/documents/papers/sat2017/IASE2017%20Satellite%20R16_RIDGWAY.pdf

Ridgway, J., Nicholson, J., & Stern, D. (2017). Statistics education in a post-truth era. In A. Molnar (Ed.). *Teaching Statistics in a Data Rich World*. Proceedings of the Satellite Conference of the International Association for Statistical Education. Voorburg: International Statistical Institute. https://iase-web.org/documents/papers/sat2017/IASE2017%20Satellite%20N56_RIDGWAY.pdf

Ridgway, J., Nicholson, J., Sutherland, S., & Hedger, S. (2017). Contrasting Approaches to Engaging Users. Chapter 11 in J. Stillwell and O. Duke-Williams (eds.). *A Handbook for Census Resources, Methods and Applications*. Ashgate publishing: Farnham, UK.

Sutherland, S., & Ridgway, J. (2017). Interactive Visualisations and Statistical Literacy. *Statistical Education Research Journal 16(1)*, p26-30. [https://iase-web.org/documents/SERJ/SERJ16\(1\)_Sutherland.pdf](https://iase-web.org/documents/SERJ/SERJ16(1)_Sutherland.pdf)

2016

Campos, P. (2016). The use of microdata versus aggregated data in teaching and learning migration statistics. In: J. Engel (Ed.). *Promoting Understanding of Statistics about Society*. Voorburg: International Statistical Institute. <http://iase-web.org/documents/papers/rt2016/Campos.pdf>

Carter, J., and Nicholson, J. (2016). Teaching statistical literacy by getting students to use real data: 40 years of experience in 40 minutes. In: J. Engel (Ed.), *Promoting Understanding of Statistics about Society*. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE), July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Carter.pdf>

Engel, J., Gal, I., & Ridgway, J. (2016). Mathematical literacy and citizen engagement: the role of civic statistics. *13th International Congress on Mathematical Education*, Hamburg, July 2016.

<http://community.dur.ac.uk/procivic.stat/wp-content/uploads/2016/05/Mathematical-Literacy-and-Citizen-Engagement-The-Role-of-Civic-Statistics.pdf>



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Engel, J. (2016). Mathematische Bildung und Gesellschaft: Die Rolle von Zivilstatistik. In Institut für Mathematik und Informatik der Pädagogischen Hochschule Heidelberg (Hrsg.). *Beiträge zum Mathematikunterricht 2016, Band 1* (pp.253-256). Münster. WTM-Verlag

Engel, J. (2016). Open data at the interface of mathematics and civic education: challenges of the data revolution for the statistics curriculum. *Journal of Mathematics and Statistical Science*, Volume 2016, 264-273

Engel, J., Schiller, A., Frischemeier, D., Biehler, R. (2016). Statistics Education and Monitoring Progress Towards Civil Rights. In J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Engel.pdf>

Frischemeier, D., Biehler, R. & Engel, J. (2016). Competencies and dispositions for exploring micro data with digital tools. In: J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Frischemeier.pdf>

Gal, I., & Trostianitser, A. (2016). Understanding basic demographic trends: connecting table reading, task design, and context. In: J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Gal.pdf>

Kazár, K. (2016). Using statistical datasets for describing poverty and income inequality. In: J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Kazar.pdf>

Kovacs, P & Kriszt Sandorne, E. (2016). . In: J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Kovacs.pdf>

Martignon, L. (2016). Empowering citizens against typical misuse of data concerning risks. In: J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Martignon.pdf>

Ridgway, J. (2016). Implications of the Data Revolution for Statistics Education. *International Statistical Review*. doi:10.1111/insr.12110.

Ridgway J., Arnold, P., Moy, W., & Ridgway, R. (2016). Deriving Heuristics from Political Speeches for Understanding Statistics about Society. In: J. Engel (Ed.). *Promoting Understanding of Statistics about Society*. Voorburg: International Statistical Institute.
<https://iase-web.org/documents/papers/rt2016/Ridgway.pdf>



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Erasmus+

Schiller, A. & Engel, J. (2016). Civic statistics and the preparation of future secondary school mathematics teachers. In J. Engel (Ed.), *Promoting understanding of statistics about society. Proceedings of the Roundtable Conference of the International Association of Statistics Education (IASE)*, July 2016, Berlin, Germany. <http://iase-web.org/documents/papers/rt2016/Schiller.pdf>

Schiller, A. (2016). Entwicklung von Modulen zur Förderung von Statistical Literacy an der Hochschule In Institut für Mathematik und Informatik der Pädagogischen Hochschule Heidelberg (Hrsg.). *Beiträge zum Mathematikunterricht 2016, Band 2* (pp.851-854). Münster. WTM-Verlag

2015

Ridgway, J. (2015). A response to “Mere Innovation is Too late”: Data Cowboys and Statistical Indians. *The American Statistician*, 69 (4).

https://nhorton.people.amherst.edu/mererenoval/13_Ridgway.PDF

Ridgway, J., Nicholson, J., Sutherland, S. and Hedger, S. (2015). Strategies for Public Engagement with Official Statistics. In: M.A. Sorto (Ed.). *Advances in Statistics Education: developments, experiences and assessments*. Voorburg: International Statistical Institute. <http://iase-web.org/documents/papers/sat2015/IASE2015%20Satellite%2038 RIDGWAY.pdf>

Sutherland, S., Hedger, S., Ireland, M., and Ridgway, J. (2015). Designing Interactive Displays to promote effective use of evidence. In: M.A. Sorto (Ed.). *Advances in Statistics Education: developments, experiences and assessments*. Voorburg: International Statistical Institute. https://iase-web.org/documents/papers/sat2015/IASE2015%20Satellite%2037_SUTHERLAND.pdf