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Data Quality in the Age of AI: The Multi-Pillar Teaching Approach of the Competence Center Data Quality in the Social Sciences (KODAQS)

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Data quality competencies are essential in most fields of research. Teaching skills on how to identify, foresee, diagnose, fix, and frame potential problems related to the quality of data used by social scientists is important to ensure the correctness of the conclusions drawn from the data. Especially with the rise of machine learning and large language model-based analysis approaches, high data quality is of importance - even the most advanced model can only produce outputs as meaningful as the data that it receives as input.

The KODAQS Academy, a partnership between GESIS - Leibniz Institute for the Social Sciences, the University of Mannheim, and the LMU Munich, addresses teaching data quality skills through a three-component approach: Blended learning, hands-on experience, and network building. With this submission, we present our teaching approach and report on first insights that we have gained from the completion of our first cohort throughout 2025. We identify possible avenues on how teaching can take into account recent developments in artificial intelligence (AI), regarding both teaching *with* and *about* artificial intelligence tools: Teaching *with* AI regards AI as assistance in our teaching approaches, enhancing (or replacing?) humans in their teaching and administrative work. In contrast, through teaching *about* AI, we educate researchers on how to leverage AI tools and methodologies to facilitate their research process. Especially in teaching about AI, the critical evaluation of data quality is important, as AI makes mistakes such as hallucinations or wrong conclusions, or can be biased and report one-sided representations.

After our talk and during the conference, we are especially interested in discussing and hearing the perspectives of other attendees on the two presented facets of AI in teaching: (1) Which aspects of AI are relevant when teaching data quality, and (2) How can we meaningfully integrate AI tools into our teaching.

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