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WiKoDa: A dashboard to enhance science communication

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Science communication is a crucial topic for both researchers and public discussion. On the one side, researchers need to develop communication skills to make their research accessible to an audience outside their field. On the other side, scientific opinion often consolidates arguments and helps audiences understand the current state of knowledge on specific discussions. Successful communication about research is a combination of ' appropriate skills, media, activities, and dialog' [1], which researchers need to strengthen. As a part of a dashboard supporting third mission activities [2], the aspect of choosing the right medium is supported by WiKoDa (a german acronym for **WissenschaftsKo**mmunikations**Da**shboard, translating to 'Science Communication Dashboard').

WiKoDa is designed to simplify the complexity of the media landscape and to display key information for researchers, tailored to their interests. In the frontend [3], various data visualization panels summarize the media interest in a particular research topic over time, show which medium engages in research areas, and indicate whether the topic is more prevalent in regional or national media. The backend system [4] is separated from the frontend by design, allowing data processing while the frontend manages user interactions. Backend tasks include extracting data from articles, integrating data into a database, and providing an API with aggregated data. Currently, the project is in a proof-of-concept phase at the University of Potsdam. WiKoDa utilizes articles from a university-tailored press review. Future expansions could extend its utility to other institutions.

The evaluation required a simulation environment because the limited data integration may lead to certain scientific fields having no data for evaluation. This could introduce a negative bias, as users might not be able to assess functionality without data. To address this, an article creation algorithm was developed, simulating various atmospheres (rising, falling, or consistent media interest) for each research topic by generated articles and placing these generated articles in a medium. This Wizard-of-Oz simulation allows users to believe they are experiencing a real scenario, enabling them to evaluate the dashboard based on its visualizations and functionality. The evaluation indicated that participants find the dashboard useful, but some aspects of its functionality and transparency were criticized.

- T. W. Burns, D. J. O'Connor, and S. M. Stocklmayer, "Science Communication: A Contemporary Definition," Public Underst Sci, vol. 12, no. 2, pp. 183–202, 2003, doi: 10.1177/09636625030122004.
- 2. Jan Bernoth and Ulrike Lucke, "The Transfer Dashboard: Integrating the Third Mission into the University Infrastructure,"in European Journal of Higher Education IT, 2020.
- 3. Jan Bernoth, Lewin Kästner, Jessica Scharrenberg, Martin Schwenke, Finn Ziehe, Ulrike Lucke, and Lovis Trüstedt, "WiKoDa Frontend,"2022, doi: 10.17605/OSF.IO/RQ8D4.
- 4. Jan Bernoth, Lewin Kästner, Martin Schwenke, Finn Ziehe, Lovis Trüstedt, Jessica Scharrenberg, and Ulrike Lucke, "WiKoDa Backend,"2022, doi: 10.17605/OSF.IO/NCP3D.

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