



DFG Research Unit 'CORE'

Critical Online Reasoning in Higher Education

Annual Newsletter December 2025

Welcome!

Dear colleagues, we are very pleased to share with you our annual CORE newsletter.

In this second edition, we look back on a year marked by great progress, but also significant challenges, all of which we are eager to share with you.

We hope you enjoy this newsletter and would like to thank you all for your support and collaboration during this exciting project.

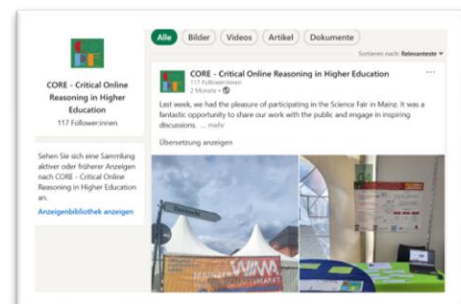
Looking back at 2025

- In addition to the 4th and 5th international CORE Roundtable meetings, our project was presented at many renowned national and international conferences. We offered various CORE sessions and symposia, including NCME 2025, EARLI 2025, and GEBF 2025.
- Numerous exciting CORE publications were prepared and published.
- For further exciting updates, follow us on LinkedIn and visit our website <https://www.linkedin.com/company/coreunimainz> & [CORE](https://www.core-mainz.de)



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IN MEMORIAM



David C. Berliner
1938 - 2025

On September 26, 2025, the field of educational research lost one of its most influential voices: David C. Berliner passed away in the United States at the age of 87. His intellectual vision, critical acumen, and lifelong commitment to public education shaped educational research and policy for over five decades.

David Berliner was Regents' Professor Emeritus of Education at Arizona State University and held positions at numerous prestigious institutions, including Stanford University and universities in Europe and Australia. He was elected to both the National Academy of Education and the International Academy of Education and served as president of both the AERA and the APA's Division of Educational Psychology.

His landmark publications — *Educational Psychology* (with Nathaniel L. Gage), *The Manufactured Crisis*, *50 Myths and Lies That Threaten America's Public Schools*, and *Collateral Damage* — have had a lasting impact on teacher education and education policy. He was a tireless advocate for evidence-based practice and a fierce critic of misguided reforms.

Berliner received many prestigious awards, including the Brock International Prize in Education, the AERA Award for Distinguished Contributions to Education, and the E. L. Thorndike Award of the APA.

Over the past decade, we have had the privilege of collaborating with David Berliner in the PLATO Project and the CORE Research Group, where his concept of "warranted knowledge" and his emphasis on truth-seeking pedagogy profoundly influenced our work.

David Berliner was more than a distinguished scholar - he was a generous mentor, inspiring colleague, and cherished friend. His legacy will continue to shape the field for years to come.

Olga Troitschanskaia, on behalf of colleagues in the PLATO Project and the CORE Research Group

Personnel Updates in the Research Group CORE and the International Research Advisory Board

Research Group CORE

We are delighted to welcome two new colleagues to our CORE research group and extend a warm welcome to Dr. Fabiola Concalves Ribeiro (C08) and Elias Griesbeck-Bachmann (B04). At the same time, we must part ways with two highly valued colleagues who have decided to take the next step in their professional careers. We extend our best wishes to Dr. Alice Laufer (B04) and Dr. Anika Kohmer (C07) for continued success and look forward to hearing from them in the future.

International Research Advisory Board

We are very pleased to announce that we have been able to appoint two outstanding colleagues to our Research Advisory Board. We consider ourselves very fortunate that Prof. Dr. Nikol Rummel (Ruhr University Bochum) and Prof. Dr. Alina von Davier (Duolingo) will be lending their expertise to further enrich and expand the focus of our Research Advisory Board in the future.



YORE Spokespersons

We are pleased to announce that the group of early career researchers (YORE) will henceforth be represented by two spokespersons: Dr. Anna Horrer and Tobias Scherer. We would like to thank the former spokesperson, Dr. Maruschka Weber, for their great commitment and dedication, and we look forward to their continued support.



Dissertations

Two of our young researchers in CORE completed their dissertations. We warmly congratulate Dr. Anna Horrer (Project A03) and Dr. Marie-Theres Nagel (Project A02) on the successful completion of their dissertations. We celebrate their great achievement, wish them continued success in their future endeavors, and look forward to the completion of many more doctoral degrees in 2026.

CORE in the Era of Generative Artificial Intelligence (AI)

Insights from a Longitudinal Panel Study (2023-2025)

The research group investigates Critical Online Reasoning (COR) – the ability to systematically search for, critically evaluate, and effectively use online information – which is considered key to academic and professional performance. Despite its relevance, substantial COR-related deficits persist among university students and graduates in the international research context. At the same time, the rapidly increasing use of generative AI tools, such as ChatGPT or Google Gemini, fundamentally alters information-seeking, learning, and knowledge acquisition processes in higher education. There is consequently a pressing need to research and better understand how students' COR skills relate to their AI usage practices in higher education.

Since 2023, the CORE project has conducted a multi-wave longitudinal panel study with a sample of 2,528 students from four domains. Approx. 450 students per wave complete digital COR assessments involving scenario-based tasks and real internet research.

Since 2025, the COR assessment integrates generative AI use during task completion, enabling the analysis of prompt quality, AI-output triangulation, and critical evaluation of AI-generated content. Written responses are evaluated using validated rubrics through both human and AI-assisted scoring with high inter-rater reliability. Data on process measures (e.g., search queries, navigation paths, response time) and complementary tests (cognitive ability, prior knowledge, media use, epistemic beliefs) provide deeper insight into students' reasoning strategies and learning prerequisites.

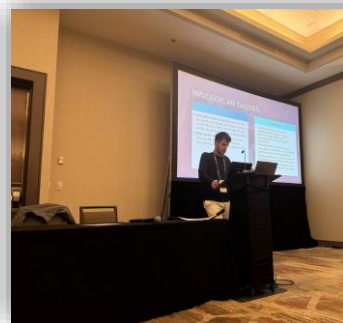
Preliminary insights indicate substantial shifts in study-related media use: the consumption of non-academic media is rising significantly, while books and wikis are used less frequently. AI tool use like ChatGPT shows the strongest significant increase across the three measurement points (2023-2025). Students using ChatGPT complete COR tasks significantly faster, but not significantly more accurately. Distinct AI-use patterns have emerged: Strategic AI users critically evaluate AI outputs, verify sources, and produce stronger synthesis and argumentation. Heuristic AI users tend to treat AI as authoritative, demonstrate weaker justifications, show lower source diversity, and are more vulnerable to automation bias.

The findings underscore the need for further causal analyses of the relationship between AI use and COR development. They support a dual strategic focus in higher education: strengthening traditional competencies for information appraisal and critical thinking in digital environments, that enables students to interpret, question, and strategically apply AI-generated information.

Key Outputs and Outcomes in 2025

International Events & Presentations

At the Congress of the **Society for Empirical Educational Research (GEBF) 2025**, the CORE team emphasized the development of interactive testing procedures to evaluate students' digital information use.



GEBF Congress of the Society for Empirical Educational Research
27. - 29. January 2025
Mannheim, Germany

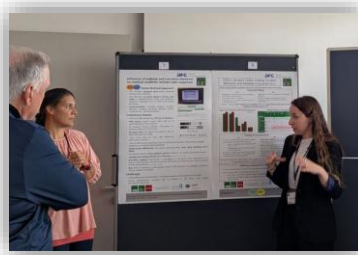
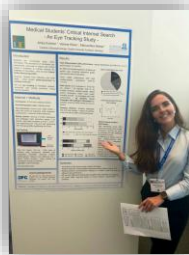
AERA Annual Meeting of the American Educational Research Association
23. - 27. April 2025
Denver, USA

NCME Annual Meeting of the National Council on Measurement in Education
25. April 2025
Denver, USA

EARLI 2025 Annual Meeting of the European Association for Research on Learning and Instruction
25.-29. August 2025
Graz, Austria

BWP Annual Conference 2025 of the Section for Vocational and Business Education
24.-26. September 2025
Darmstadt, Germany

The research group was present at the **National Council on Measurement in Education (NCME) Conference 2025** in Denver, US, where presentations highlighted methodological innovations in assessing domain-specific COR skills. Studies showcased eye-tracking analyses of high- and low-performing students, the effects of ChatGPT-assisted problem-solving on task performance, and the influence of preacademic education on students' digital media usage skills.



At the **Annual Meeting of the European Association for Research on Learning and Instruction (EARLI) 2025** in Graz, Austria, the group hosted two CORE symposia addressing the assessment of students' generic and domain-specific critical online reasoning skills as well as the use of open and closed information settings in COR assessments.

Key Outputs and Outcomes in 2025

CORE Internal Events

Fourth CORE-Roundtable

25.-26. February 2025
Frankfurt

CORE-Retreat

16. July 2025 Mainz

CORE-Colloquium

22. May & 05. June
2025 (online)

Fifth CORE-Roundtable

10.-12. September
2025 Mainz

In 2025, the DFG Research Unit CORE continued to strengthen its role as a leading international voice in research on **Critical Online Reasoning (COR)** in higher education through several international and internal events.



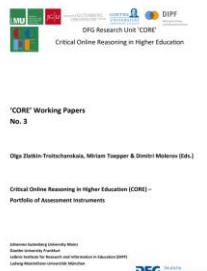
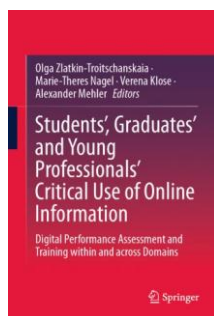
The **Fourth CORE Roundtable** (February 25–26, 2025) focused on consolidating key insights from ongoing cross-project collaborations. In productive workshops, the research group exchanged updates, aligned next steps, and initiated important advances within the working groups to further drive CORE's research agenda.



The **Fifth CORE Roundtable**, held jointly with the **International Young Researchers Conference** (September 10–12, 2025), served as a central forum for strategic exchange. Participants discussed major results from the current funding phase, covering all eight CORE research foci. The event benefited greatly from critical perspectives provided by internationally renowned scholars and members of the Research Advisory Board, whose feedback provided key impulses for refining CORE's future research directions.

Key Outputs and Outcomes in 2025

Joint Publications (Selection)



Cortina, S., & Zlatkin-Troitschanskaia, O. (2025). Critical thinking in higher education in the digital age. *Journal of Education*, 2, 141–144.

<https://doi.org/10.3262/ZP2502141>

Zlatkin-Troitschanskaia, O., Nagel, M.-T., Klose, V., & Mehler, A. (Eds.). (2024). *Students', graduates', and young professionals' critical use of online information: Digital performance assessment and training within and across domains*. Springer.

<https://doi.org/10.1007/978-3-031-69510-0>

Zlatkin-Troitschanskaia, O., Pellegrino, J. W., & Bartnik, T. N. Learning to think critically. In *Handbook of Research on Learning and Instruction* (pp. 155-182). Routledge.

CORE Working Papers

Zlatkin-Troitschanskaia, O., Molerov, D., & Toepper, M. (Eds.). (2025). *Critical online reasoning in higher education (CORE): Portfolio of assessment instruments* (CORE Working Papers No. 3). Johannes Gutenberg University Mainz.

Zlatkin-Troitschanskaia, O., Molerov, D., & Toepper, M. (Eds.). (2025). *Developing students' critical online reasoning in higher education (CORE): Longitudinal insights, AI-related challenges, and implications for future research: CORE+* (CORE Working Papers No. 4). Johannes Gutenberg University Mainz.

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

A01: Generic Critical Online Reasoning Skills – Measurement, Development, and Comparative Analyses across Academic Domains

Journal Article

Hartig, J., Drake, P., Illmann, J., Köhler, C., Kohmer, A., & Stroganova, A. (in press). Rating procedures to evaluate generic critical online reasoning in an open Internet environment. *Zeitschrift für Erziehungswissenschaft*.

Chapter in an Edited Volume

Goldhammer, F., Engelhardt, & Zehner, F. (accepted). Performance-based assessment of digital literacies. In J. Castek, J. Coiro, E. Forzani, M. Schira Hagerman, C. Kiili, & J. Sparks (Eds.), *International handbook of research in digital literacies*. Routledge.

Conference Presentations

Drake, P., Goldhammer, F., Hahnel, C., Hartig, J., Illmann, J., Köhler, C., & Schrickel, M. (2025, August). *Evaluating critical information usage among university students in the digital age* [Conference presentation]. EARLI 2025 Conference, Graz, Austria.

Drake, P., Hartig, J., Illmann, J., Köhler, C., Nagel, M. T., Kohmer, A., & Stroganova, A. (2025, January). *Interaktive Testverfahren zur Bewertung der kritischen Informationsnutzung von Hochschulstudierenden im digitalen Zeitalter* [Conference presentation]. 12th Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Hahnel, C. (2025, January). *Wissen oder Annahmen? Beiträge zur Validierung von Interpretationen aus Logdaten* [Invited symposium]. Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Hahnel, C., Scherer, T., Schrickel, M., Drake, P., Illmann, J., Hartig, J., Goldhammer, F., & Köhler, C. (2025, July). *How reading skills support students in their journey through the online information landscape* [Conference presentation]. 16th European Congress on Psychological Assessment (ECPA), Barcelona, Spain.

Hartig, J., Kohmer, A., Drake, P., Illmann, J., Köhler, C., Stroganova, A., & Zottmann, J. (2025, January). *Bewertungsverfahren zur Beurteilung offener Antworttexte zum kritisch-reflektierten Umgang mit Online-Medien* [Conference presentation]. 12th Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Illmann, J., Baumartz, D., Drake, P., Hahnel, C., Hartig, J., Köhler, C., Schrickel, M., Stroganova, A., & Goldhammer, F. (2025, January). *Die Definition und Validierung von Logdaten-Indikatoren für die Messung von Critical Online Reasoning* [Conference presentation]. 12th Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

A02: Development of Economics Students' Domain-Specific COR Skills over the Course of Their Bachelor Studies and Key Factors Influencing DOM-COR

Journal Articles

Kohmer, A., Zlatkin-Troitschanskaia, O., Fischer, J., & Nagel, M.-T. (2025), Design and Transferability of a Digital Training to Improve Generic and Domain-Specific Critical Online Reasoning. *International Journal of Training and Development*, 29: 403-418. <https://doi.org/10.1111/ijtd.12368>

Molero, D., Federiakin, D., Zlatkin-Troitschanskaia, O., Shenavai, K., Trierweiler, L., & Nagel, M. (accepted). The relationship between AI-chatbots use and student assessment performance and learning outcomes in higher education. *Unterrichtswissenschaft*.

Nagel, M.T., & Zlatkin-Troitschanskaia, O. (2025). The competence to deal critically with online information among economics education students and teacher trainees in economics: implications for teacher training. *Empirical Res Voc Ed Train* 17, 11 (2025). <https://doi.org/10.1186/s40461-025-00186-4>

Conference presentations (Selection)

Hodes, P., Federiakin, D., Zlatkin-Troitschanskaia, O., Martin de los Santos Kleinz, L., Gabler, J., & Molero, D. (2025, April). Impact of vocational education on student media usage skills: A quasi-experimental design [Conference presentation]. National Council on Measurement in Education (NCME) Annual Meeting, Denver, CO, United States.

Nagel, M.-T., Zlatkin-Troitschanskaia, O., Trierweiler, L., Drake, P., Hartig, J., & Walstad, W. (2025, August). Developing domain-specific critical online reasoning skills of economics students in their first year [Conference presentation]. EARLI 2025 Conference, Graz, Austria.

Nagel, M.-T., Zlatkin-Troitschanskaia, O., Trierweiler, L., & Schmidt, S. (2025, September). Validierung von Aufgaben zur Erfassung des domänenspezifischen Critical Online Reasoning (DOM-COR) bei StudienanfängerInnen der Wirtschaftswissenschaften und Wirtschaftspädagogik [Conference presentation]. Jahrestagung 2025 der Sektion Berufs- und Wirtschaftspädagogik, Darmstadt, Germany.

Trierweiler, L., Nagel, M.-T., Zlatkin-Troitschanskaia, O., Hartig, J., & Drake, P. (2025, April). Valid assessment of economics students' domain-specific critical online reasoning skills [Conference presentation]. National Council on Measurement in Education (NCME) Annual Meeting, Denver, CO, United States.

Martin de los Santos Kleinz, L., Zlatkin-Troitschanskaia, O., Trierweiler, L., & Nagel, M.-T. (2025). *Die Entwicklung der Mediennutzung und Critical Online Reasoning bei Studierenden der Wirtschaftswissenschaften und Wirtschaftspädagogik im ersten Studienjahr* [Poster presentation]. Annual Conference of the DGfE Section Vocational and Business Education (BWP), Darmstadt, Germany.

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

A03: Development of Domain-Specific Critical Online Reasoning Skills in Medical Students during Their Preclinical Studies

Journal Articles

Martin de los Santos, L., Klopp, E., Zlatkin-Troitschanskaia, O., Zottmann, J., & Horrer, A. (in press). The relationship between online reasoning skills of incoming university students in Germany and their epistemological beliefs. *Zeitschrift für Erziehungswissenschaft*.

Editorial Work

Zottmann, J., Kuhn, J., & Fischer, M. R. (Guest eds.). (2025). Special issue on “Critical reasoning and argumentation for informed decisions in health care.” *GMS Journal for Medical Education*.

Project Report

Fischer, M. R., Kuhn, J., van Gog, T., Zottmann, J., Dinc, Y., Horrer, A., & Ruf, V. (2025). A03: Development of domain-specific critical online reasoning (DOM-COR) skills in medical students during their preclinical studies. In O. Zlatkin-Troitschanskaia, M. Toepper, & D. Molerov (Eds.), *Critical Online Reasoning in Higher Education (CORE) – Portfolio of Assessment Instruments* (CORE Working Papers, 3). Johannes Gutenberg University Mainz.

Conference Presentations (Selection)

Horror, A., Stroganova, A., Dinc, Y., Ruf, V., Küchemann, S., Kuhn, J., Fischer, M. R., & Zottmann, J. (2025). Investigating the interplay of scientific reasoning skills and epistemological beliefs of medical and physics students [Conference presentation]. 21st Biennial Conference of the European Association for Research on Learning and Instruction (EARLI), Graz, Austria.

Illmann, J., Baumartz, D., Drake, P., Hahnel, C., Hartig, J., Köhler, C., Schrickel, M., Stroganova, A., & Goldhammer, F. (2025, January). Die Definition und Validierung von Logdaten-Indikatoren für die Messung von Critical Online Reasoning [Conference presentation]. 12. Tagung der Gesellschaft für Empirische Bildungsforschung (GEBF), Mannheim, Germany.

Martin de los Santos, L., Klopp, E., Horrer, A., Zottmann, J., & Zlatkin-Troitschanskaia, O. (2025, January). The relation between critical online reasoning skills of incoming university students in Germany and their epistemological beliefs [Conference presentation]. 12. Tagung der Gesellschaft für Empirische Bildungsforschung (GEBF), Mannheim, Germany.

Stroganova, A., Horrer, A., Weber, M., Klose, V., Kuhn, J., Fischer, M. R., & Zottmann, J. (in press). Potenziale generativer KI bei der Erstellung komplexer Fallszenarien zur Erfassung kritischer Online-Reasoning-Fähigkeiten Studierender [Conference presentation]. 30. Kongress der Deutschen Gesellschaft für Erziehungswissenschaft (DGfE), Munich, Germany.

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

B04: Modelling the Information Landscape (IL) for Assessing and Analyzing Domain-Specific and Generic Critical Online Reasoning

Journal Article

Scherer, T., Laufer, A., Maurer, M., & Schemer, C. (2025). Assessing the information quality of online sources used by first-year students for solving generic critical online reasoning tasks. *Zeitschrift für Erziehungswissenschaft*. <https://doi.org/10.1007/s11618-025-01344-w>

Conference Presentations

Scherer, T., Laufer, A., Maurer, M., & Schemer, C. (2025, January). *Incomplete, incorrect, and unbalanced? The quality of online content used by students to solve COR tasks* [Conference presentation]. 12th Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Scherer, T., Laufer, A., Maurer, M., & Schemer, C. (2025, August). *Information quality of online sources used by first-semester students when solving generic COR tasks* [Conference presentation]. European Association for Research on Learning and Instruction (EARLI) Conference 2025, Graz, Austria.

B05: Modelling the Information Landscape (IL) for Assessing and Analyzing Domain-Specific and Generic Critical Online Reasoning

Journal Article

Abrami, G., Genios, M., Fitzermann, F., Baumartz, D., & Mehler, A. (2025). Docker Unified UIMA Interface: New perspectives for NLP on big data. *SoftwareX*, 29, 102033. <https://doi.org/10.1016/j.softx.2024.102033>

Conference Proceedings

Abrami, G., Bönisch, K., & Mehler, A. (2025). Towards unified, dynamic, and annotation-based visualisations and exploration of annotated big data corpora with the help of Unified Corpus Explorer. In *Proceedings of the 2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics (NAACL): System Demonstrations*.

Abrami, G., Baumartz, D., & Mehler, A. (2025). DUUI: A toolbox for the construction of a new kind of natural language processing. In *Proceedings of DHd 2025: Under Construction. Geisteswissenschaften und Data Humanities* (pp. 446–448). <https://doi.org/10.5281/zenodo.14887461>

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

B06: The Role of the Narrative Framing and Latent Meaning Structures of Online Information Used by Medical and Economics Students in Their Generic and Domain-Specific Critical Online Reasoning

Journal Articles

Schelle, C., Zlatkin-Troitschanskaia, O., Banerjee, M., Braunheim, D., & Touzos, A. A. (2025). Zum kritischen Umgang Studierender mit Internetinformationen – Analysen mittels Rekonstruktion und Narratologie in digitalen Umgebungen. *Zeitschrift für Bildungsforschung*, 15(3).

Schelle, C., Nell-Müller, S., & Braunheim, D. (in press). Des étudiants résolvent des tâches à l'aide d'informations tirées d'Internet – Potentiels d'analyses qualitatives dans le contexte de l'objet-frontière et du 'boundary crossing.'

Schelle, C., Banerjee, M., Zlatkin-Troitschanskaia, O., Touzos, A. A., & Braunheim, D. (in press). Critical handling of online information by prospective teachers: A complementary analysis using narration and reconstruction approaches. *Journal of Computer Assisted Learning*.

Conference Presentations

Banerjee, M., Schelle, C., Zlatkin-Troitschanskaia, O., Braunheim, D., Touzos, A. A. (2025, January). *Sprachgebrauch und fachliche Kontextualisierungen beim Aufgabenlösen in Internetlernumgebungen – Critical Online Reasoning in Studiengängen der Ökonomie und Medizin*. [Conference presentation]. 12th Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Braunheim, D., Schelle, C., Banerjee, M., Zlatkin-Troitschanskaia, O., Touzos, A. A. (2025, June). *Zur Macht doppelter Framings beim Umgang Studierender mit zukunftsrelevanten Informationen aus dem Internet - eine narrativ-rekonstruktive Studie*. [Conference presentation]. Jahrestagung der Gesellschaft für Politikdidaktik und außerschulische Jugend- und Erwachsenenbildung (GPJE), Gießen, Germany.

Schelle, C., Banerjee, M., Zlatkin-Troitschanskaia, O., Braunheim, D., & Touzos, A. (2025, August). *Narrative-reconstructive case study of students' critical online reasoning* [Conference presentation]. 21st Biennial Conference of the European Association for Research on Learning and Instruction (EARLI 2025), Graz, Austria.

Touzos, A. A., Banerjee, M., Zlatkin-Troitschanskaia, O., Schelle, C., & Braunheim, D. (2025, August). *Critical online reasoning and the use of online sources by students of economics and medicine* [Conference presentation]. 21st Biennial Conference of the European Association for Research on Learning and Instruction (EARLI), Graz, Austria.

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

C07: Task-solving processes and strategies used by students in generic and domain-specific critical online reasoning and their development over the course of their studies in four domains (economics, medicine, physics, sociology)

Journal Articles

Kunz, A.-K., Zlatkin-Troitschanskaia, O., Schmidt, S., Nagel, M.-T., & Brückner, S. (2024). Investigation of students' use of online information in higher education using eye tracking. *Smart Learning Environments*, 11(1), 44. <https://doi.org/10.1186/s40561-024-00333-6>

Maur, A., Kunz, A.-K., Weber, M., Klose, V., Kohmer, A., Dinc, Y., Ruf, V., & Küchemann, S. (in press). Exploring browsing patterns in domain-specific critical online reasoning: An eye-tracking study on visits and fixations in different website areas. *Zeitschrift für Erziehungswissenschaft*.

Doctoral Dissertation

Kohmer, A. (2024). *Acquisition and promotion of critical online reasoning skills: Analyses among students in professional/practical year studies in medicine, law, and teaching* (Doctoral dissertation, Johannes Gutenberg University Mainz). Universitätsbibliothek der Johannes Gutenberg-Universität Mainz.

Conference Presentations

Kohmer, A., Weber, M., Klose, V., Maur, A., Kunz, A.-K., Dinc, Y., Ruf, V., & Küchemann, S. (2025). *Critical online reasoning processes in generic tasks: Insights into high- and low-performing behavior using eye tracking* [Symposium presentation]. Annual Meeting of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Kohmer, A., Klose, V., & Weber, M. (2025, September 11). *Medical students' critical internet search: An eye-tracking study* [Poster presentation]. Joint International Meeting IUPS & Europhysiology, Frankfurt, Germany.

Maur, A., Zlatkin-Troitschanskaia, O., Martin de los Santos Kleinz, L., Nagel, M., & Fischer, J. (2025, April 23). *Assessing critical online reasoning skills: Latent trajectories among young professionals in medicine, law, and teaching* [Paper presentation]. Annual Meeting of the American Educational Research Association (AERA), Denver, CO, United States.

Ruf, V., Kohmer, A., Dinc, Y., Weber, M., Klose, V., Kunz, A.-K., Maur, A., Kuhn, J., & Küchemann, S. (2025). *Machine-learning-based prediction of critical online reasoning skills via gaze data* [Conference presentation]. European Science Education Research Association (ESERA) Conference, Copenhagen, Denmark.

Key Outputs and Outcomes in 2025

Project Individual Publications and Presentations

Coordination Project:

Journal Article

Martin de los Santos, L., Klopp, E., Zlatkin-Troitschanskaia, O., Zottmann, J., & Horrer, A. (in press). The relation between critical online reasoning skills of first-semester university students and their epistemological beliefs. *Zeitschrift für Erziehungswissenschaft*.

Conference Contributions

Federiakina, D., Dobria, L., & Zlatkin-Troitschanskaia, O. (2025, July 23–25). “Factor analysis” of process data via psychology-informed variational recurrent autoencoders for the analysis of critical online reasoning [Conference presentation]. XI European Congress of Methodology, La Laguna, Tenerife, Spain.

Martin de los Santos Kleinz, L., Klopp, E., Horrer, A., Zottmann, J., & Zlatkin-Troitschanskaia, O. (2025). *The relation between critical online reasoning skills of incoming university students in Germany and their epistemological beliefs* [Conference presentation]. Annual Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany. (Accepted)

Molero, D., Shenavai, K., Federiakina, D., Zlatkin-Troitschanskaia, O., & Trierweiler, L. (2025). *Students' COR task solving in economics: Time-to-draft with and without ChatGPT*. Paper presented at the annual meeting of the National Council on Measurement in Education (NCME), Denver, CO.

Zlatkin-Troitschanskaia, O., Molero, D., Gabler, J., Trierweiler, L., Hodes, P. F., & Martin de los Santos Kleinz, L. (2025). *Modeling and measuring critical online reasoning in higher education: First-year students' results in four disciplines* [Poster presentation]. Annual Conference of the Society for Empirical Educational Research (GEBF), Mannheim, Germany.

Zlatkin-Troitschanskaia, O., Toepper, M., Molero, D., & Martin de los Santos, L. (2025). *Critical online reasoning bei Studierenden der Wirtschaftswissenschaften und Wirtschaftspädagogik in Zeiten von ChatGPT* [Poster presentation]. Annual Conference of the DGfE Section Vocational and Business Education (BWP), Darmstadt, Germany.

Editorial Work

Cortina, S., & Zlatkin-Troitschanskaia, O. (2025). Kritisches Denken in der Hochschulbildung im digitalen Zeitalter. *Zeitschrift für Pädagogik*, 71(2), 141–144. <https://doi.org/10.3262/ZP2502141>

Drachler, H., Zottmann, J., & Zlatkin-Troitschanskaia, O. (2025). *Special issue: Critical online reasoning in higher education: Reflecting on online information and AI tools in the digital age* (Guest editors). *Journal of Computer Assisted Learning*.

Zlatkin-Troitschanskaia, O., Hartig, J., & König, J. (2025). *Special issue: Critical online reasoning in higher education: Conceptual and methodological advances and perspectives in internet-based learning* (Guest editors). *Zeitschrift für Erziehungswissenschaft*.

Outlook - Upcoming Events

Sixth CORE-Roundtable 03.-04. March 2026 Munich, Germany	Conference led by the Research Group CORE and the Meeting of the Research Advisory Board
DGfE 2026 22.-25. March 2026 Munich, Germany	30th Congress of the German Society for Educational Science CORE Research Forum: Methods for recording and analyzing student skills in Internet research – using AI chatbots, process mining, and narratology
NCME 2026 08.-11. April 2026 Los Angeles, USA	National Council on Measurement in Education (NCME) Annual Meeting CORE Session: Advancing Digital Skills Assessment: Integrating Tests, Performance Data, and Process-Oriented Analyses
EARLI SIG 4 & SIG 11 10.-12. June 2026 Helsinki, Finland	Joint SIG4 & SIG11 Conference 2026 on Innovation and Reflection in Teacher Education and Higher Education
CORE Retreat 18.-19. June 2026 Frankfurt, Germany	Internal Retreat led by FOR CORE to prepare for the next funding phase
ITC Conference 2026 30. June - 03. July 2026 Auckland, New Zealand	The International Test Commission (ITC) Conference 2026
Seventh CORE-Roundtable 02.-04. September 2026 Mainz, Germany	International Roundtable Conference led by FOR CORE and the Meeting of the Research Advisory Board
DGPs 2026 07.-10. September 2026 Luxembourg	4th Congress of the Deutsche Gesellschaft für Psychologie (DGPs)



Dear colleagues,

As 2025 draws to a close, we would like to sincerely thank you all for the wonderful things we have achieved together this year and the invaluable discussions that have taken place along the way! We look forward to continuing this journey with you in the coming year.

We wish you and your family a restful holiday season and a happy and healthy 2026!

'Giving a little love every day means having a little Christmas every day.'

Monika Minder

MERRY CHRISTMAS!





DFG Research Unit 'CORE'

Critical Online Reasoning in Higher Education

Imprint

Annual Newsletter on the DFG Research Unit "Critical Online Reasoning in Higher Education"

The CORE Annual Newsletters announces information from the DFG funded Research Unit "Critical Online Reasoning in Higher Education" (CORE), including project background information, technical reports, and preliminary results that are intended for rapid dissemination and scientific exchange within CORE as well as with the broad research community. Publication as a CORE Newsletter does not preclude publication elsewhere. Responsibility for the content lies with the authors. The content does not necessarily reflect the views of the series editors.

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The Research Unit FOR 5404 is funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under the project number 462702138.

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