

Forschungsplattform "Bildung in der digitalen Welt" Newsletter



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If you would like to contribute to this newsletter please contact David Wiesche (david.wiesche@uni-due.de)

Welcome to the ForBild Newsletter Towards Fair and Ethical Artificial Intelligence in Education

By Irene-Angelica Chounta

To open this editorial, I will re-use the opening statement for the lecture "Intelligent Learning Environments" I teach at UDE: "AI in Education (AIED) is a very hot topic, but it is not new". Sidney Pressey developed the first "teaching machine" in the 1920s: a machine that could provide real-time feedback and tailor students' practice based on their performance [1]. Nonetheless, two things are very different now: one is computational power, and the other is accessibility. Everyone with access to a digital device (e.g., cell phone or laptop) is using, knowingly or not, some AI technology.

In 2022, I contributed to a publication for the Council of Europe about AIED [2]. We identified several challenges regarding fairness and ethics, such as what kind of AI in education is the "right kind" from a pedagogical perspective or how we can ensure that the use of AI in education will not pose a threat to inclusiveness and equity. That is, ensuring every learner is provided with the same learning opportunities or opting out of using AI will not hinder individuals' learning. We were also surprised to find out that AI in education is subject to the same rules and regulations as any other AI application area. For example, related work [3] identifies several domain-specific legal instruments for cybercrime, biomedicine and aviation - but they do not identify any specific legal instrument for the education sector despite its impact on human development. The same applies to (the lack of) robust evidence (findings from independent, large-scale, longitudinal studies) of its positive impact, thus, backing up the hype. Not it's time to ask: how can we capitalize on the potential of AIED while safeguarding basic human principles and values, and what is our responsibility?

[1] <https://mitpress.mit.edu/9780262546065/teaching-machines/>

[2] <https://www.coe.int/en/web/education/-/new-isbn-publication-artificial-intelligence-and-education>

[3] <https://rm.coe.int/primer-en-new-cover-pages-coe-english-compressed-2754-7186-0228-v-1/1680a2fd4a>

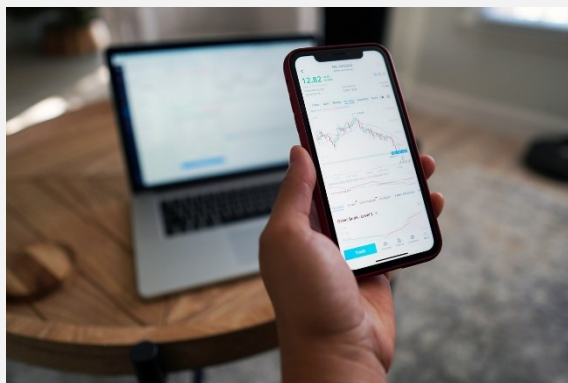
EVENTS

Upcoming: IZFB Day of Educational Research 2024

Research on education in the digital world - where do we stand?

When: 6 February 2024, 09:00 – 15:30

Where: University of Duisburg-Essen, Campus Essen, Glaspavillon (R12 S00 H12)



The next Day of Educational Research will take place on 6 February 2024 from 09:00 - 15:30 in the Glass Pavilion (R12 S00 H12) on the Essen campus.

The introductory keynote speech by Prof. Dr. Katherina Scheiter is entitled From the digitalisation of teaching to good teaching in a culture of digitality. The concluding panel discussion will focus on the topic: Research on education in the digital world - where do we stand?

The plan is to collect all posters submitted within the research platform ForBild to enhance collaborative exchange within the platform. We look forward to your participation and presentation of your projects.

More information about the day and how to register to take part

<https://www.uni-due.de/izfb/tdb-2024>

Informal Meeting of the ForBild-Plattform

On Thursday, November 16th, 22 scientists from every career stage gathered to exchange ideas about their research activities. In stimulating discussions, it was emphasized that these informal meetings are considered an essential aspect of networking within the university and should be repeated.

EduTalk: The importance of evidence-based practices in AIED

Irene-Angelica Chounta organizes an EduTalk for the Council of Europe with the title "The importance of evidence-based practices in AIED". The EduTalk took place online, on December 14th, 2023. More information are available here: <https://www.coe.int/en/web/education/edutalks>

RESEARCH

The following two publications have appeared in the field of **data-based analysis of digital communication**:

- Flinz, Carolina / Gredel, Eva/ Herzberg, Laura (2023): A Corpus study on the negotiation of pronominal address on talk pages of the German, French, and Italian Wikipedia. In: Proceedings of the 10th Conference on Computer-Mediated Communication (CMC) and Social Media Corpora (CMC-corpora 2023), 14–15 September 2023, University of Mannheim: Mannheim, 86-90.
- Beißwenger, Michael/ Gredel, Eva/ Rebhan, Lena/ Steinsiek, Sarah (2023): Ellipsis Points in Messaging Interactions and on Wikipedia Talk Pages. In: Proceedings of the 10th Conference on Computer-Mediated Communication (CMC) and Social Media Corpora (CMC-corpora 2023), 14–15 September 2023, University of Mannheim. University of Mannheim: Mannheim, 33-38.

Eva Gredel is co-editor of the following publication, which addresses, among other things, how language corpora can be used as large digital research infrastructures in university teaching: Beißwenger, Michael/ Gredel, Eva/ Lemnitzer, Lothar/ Schneider, Roman (Hg., 2023): Korpusgestützte Sprachanalysen. Grundlagen, Anwendungen und Analysen. Narr: Tübingen (= Studien zur Deutschen Sprache 88).



New Scientific edited volume: Performance from a Sport Pedagogy Perspective

The compilation on the topic "Performance from a Sport Pedagogy Perspective" (David Wiesche and Norbert Gissel) has been published, featuring contributions from Ulf Gebken and Michael Pfitzner on "Achieving and Performance in Competency-Based School Sports," as well as "The Relationship between Performance and Experiencing Shame in Physical Education" by David Wiesche. The book and the contributions can be found here.

<https://doi.org/10.1007/978-3-658-41233-3>

PUBLICATIONS

Perceived knowledge through attitudinally congruent social media comments?

New publication in Media Psychology

How do homogeneous opinion spaces on social media affect our behavior and self-assessment of our knowledge? This question was addressed by Luna Frauhammer and German Neubaum in their new publication "Metacognitive effects of attitudinal (in)congruence on social media: relating processing fluency, subjective knowledge, and political participation". For this purpose, subjects in an online experiment saw political social media posts with associated comments that either corresponded to the subjects' opinion or represented an opposing viewpoint. The results show that processing attitude-congruent comments felt easier, that subjects in the congruent condition rated their own knowledge on the topic as higher, and showed a higher willingness to participate in politics.

Frauhammer, L. T., & Neubaum, G. (2023). Metacognitive effects of attitudinal (in)congruence on social media: Relating processing fluency, subjective knowledge, and political participation. *Frontiers in Psychology*, 14, <https://doi.org/10.3389/fpsyg.2023.1146674>

People's algorithmic literacy depends on their age, education level, social media experience New cross-cultural study published

In a digital world, people can gain informal knowledge through communication technologies. This information landscape, though, might be curated by filtering algorithms. Are people aware of filtering algorithms? A new study by Anne Oeldorf-Hirsch (University of Connecticut) and German Neubaum (University of Duisburg-Essen) published in the *Journal of Computer-Mediated Communication* offers insights in the antecedents and further correlates of social media users' algorithmic literacy. -> Oeldorf-Hirsch, A., & Neubaum, G. (2023). Attitudinal and behavioral correlates of algorithmic awareness among German and US social media users. *Journal of Computer-Mediated Communication*, 28(5).

<https://doi.org/10.1093/jcmc/zmad035>

Systematic review of spatial abilities and virtual reality: The role of interaction

The new review by Micha Gittinger and David Wiesche aimed to reveal the link between individuals' interactions in a VR environment and their spatial abilities and provide guidance for future research and the design of training settings. They also aimed to support students by aligning their interactions with individuals' spatial abilities or by using interactive VR to foster these abilities to create more equal opportunities in the field of engineering. Conclusion of the review: Interactive VR can be used to develop spatial abilities, particularly in low-ability learners. However, it can also hinder these learners and favor high-ability learners. Further research focusing on the interactive part of VR and the role of spatial ability is required to support design choices.

<https://doi.org/10.1002/jee.20568>

- Chejara, P., Prieto, L. P., Rodríguez-Triana, M. J., Ruiz-Calleja, A., Kasepalu, R., Chounta, I. A., & Schneider, B. (2023, August). Exploring indicators for collaboration quality and its dimensions in classroom settings using multimodal learning analytics. In *European Conference on Technology Enhanced Learning* (pp. 60-74). Cham: Springer Nature Switzerland. https://link.springer.com/chapter/10.1007/978-3-031-42682-7_5
- Tsimpanis, K., Avouris, N., Chounta, I. A., Daskalaki, S., Dimitriadis, Y., Gari, C. M., ... & Balaouras, P. (2023). Implementing a data-driven framework for measuring digital readiness across European universities. *Proceedings of European University*, 95, 129-139.

Talks

- At the congress of the Society for Applied Linguistics, Eva Gredel gave a lecture on the topic of "Text qualities and discourses in the age of ChatGPT and Co".
- At the conference "Teaching on a Threatened Planet", Eva Gredel gave a lecture entitled "YouTube explanatory videos on sustainability and climate change as a teaching-learning object in language-reflexive teaching".
- Irene-Angelica Chounta gave an invited keynote talk on Opportunities and Challenges for Artificial Intelligence in Education and Learning Analytics at the ICALT 2023 conference held in Utah, USA (<https://tc.computer.org/tclt/icalt-2023/>)
- Irene-Angelica Chounta co-organized a workshop on "AI and Education. A view through the lens of human rights, democracy and the rule of law. Legal and organizational requirements". The workshop was held during the International Conference of Artificial Intelligence in Education" (AIED 2023) that took place in Tokyo, Japan. https://link.springer.com/chapter/10.1007/978-3-031-36336-8_12
- At the AIESEP 2023 conference in Santiago de Chile, David Wiesche and Caterina Schäfer presented their research findings together with Helena Sträfer (Wuppertal) and discussed: Bridging borders between physical and virtual movement? Conditions for the successful reflective integration of virtual reality in schools and physical education.

PROJECTS

The **DigiReady project** (<https://digiready.eu/>) held the second multiplier event and transnational project meeting at the University of Valladolid, on July 10th and 11th, 2023. Irene-Angelica Chounta and her research group represented UDE and contributed to the dissemination activities. A report of the event is provided via the project's website.

The first General Assembly for the **augMENTOR project** (<https://augmentor-project.eu/>) took place in Nice, France on June 1st and 2nd, 2023. The second General Assembly will be hosted by Irene-Angelica Chounta at the University of Duisburg-Essen, on December 7th and 8th, 2023. Looking forward to welcoming our partners!

Lernen.digital has started

At the kick-off of lernen:digital (BMBF, <https://lernen.digital/>), Prof. Pfitzner, Dorina Rohse, Dr Schäfer and JProf. Wiesche were able to gain insights into the competence network and network with colleagues involved in the "Kompetenzzentrum Musik, Kunst und Sport". The project networks **DigiProSMK** (Kiel) and **ComeSport** (Essen) were presented.

TEACHING

- In the winter semester of 2023, Eva Gredel holds a master's seminar on the current topic "Text qualities and discourses in the age of ChatGPT and Co".
- For WiSe 2023, Irene-Angelica Chounta offers the following lectures, seminars and projects:
 - a mixed-audience Praxis/Research Project on the use of Large Language Models as learning companions
 - a mixed-audience Research Seminar on Education as a Data Science Application Field
 - a lecture for doctoral students with the topic "Artificial Intelligence in Education: Designing human-centered, intelligent tutoring systems for personalized and adaptive learning." The lecture is offered as part of the series "Theoretische und methodische Einblicke in Projekte aus der Bildungsforschung" and will take place on December 5th.
- The cooperation between the Amplonius Gymnasium in Rheinberg and the AG Digitales Lehren und Lernen im Schulkontext (Wiesche) will continue in the winter semester as part of a master's seminar in the service learning format.

ON OTHER NEWS

Visiting Scholars

Paraskevi (Evi) Topali, postdoctoral researcher at the Radboud University (the Netherlands), will visit the COLAPS research group in November 29 – December 1st. Evi will give a talk about the design of human-centered feedback. If you are interested in attending, please contact Irene-Angelica Chounta (irene-angelica.chounta@uni-due.de) via email for more information.



Academic functions

Prof. Dr. Eva Gredel was elected in September 2023 - together with Dr. Peter Schildhauer (Bielefeld University) - as head of the section for "Media Didactics and Media Competence" in the Society for Applied Linguistics (Gesellschaft für Angewandte Linguistik e.V., GAL) . The GAL e.V. is one of the largest and oldest linguistic societies in the context of applied linguistics. GAL e.V. bundles activities and initiatives that focus on the research and optimization of communication processes in everyday life and in professional fields of application. See for more information: <https://gal-ev.de/sektionen/mediendidaktik-und-medienkompetenz/>

Since August 2023, Prof. Dr. Eva Gredel and Prof. Dr. David Wiesche have headed the research focus "Education in the Digital World" at the Interdisciplinary Center for Educational Research.

Irene-Angelica Chounta is serving as a Program Co-chair for the 25th International Conference of Artificial Intelligence in Education (AIED) to take place in Recife, Brazil (<https://aied2024.cesar.school/>). Additionally, she serves as a Conference Chair for the 16th International Conference on Computer Supported Education (CSEDU 2024) in Angers, France (<https://csedu.scitevents.org/>).

Irene-Angelica Chounta serves since September 2023 as an Associate Editor for the Journal Educational Technology & Society (ET&S) (<https://www.j-ets.net/>).
