

Justus Henke: Hochschulkommunikation im Zeitalter der KI: Erste Einblicke in die Nutzung und Perspektiven generativer KI-Tools [University communication in the age of AI: First insights into the use and perspectives of generative AI tools] (HoF-Arbeitsbericht 122), Institut für Hochschulforschung (HoF) an der Martin-Luther-Universität, Halle-Wittenberg 2023, 57 S. ISSN 1436-3550. ISBN 978-3-937573-89-2. Online unter https://www.hof.uni-halle.de/web/dateien/pdf/ab_122.pdf

Summary

Abstract

The study, in a first-time empirical survey of the highly topical subject, investigates the application and perception of generative AI tools, such as ChatGPT, in university communication. A survey was conducted among German universities, in which, among other things, usage patterns, challenges, and potentials of these new technologies were asked. The empirical results show that AI-supported translation and language correction tools are most frequently used, while the use of other tools is currently still low. In addition, there is mixed satisfaction with these tools. Technical difficulties, data protection concerns, and a limited understanding of the versatile application possibilities of generative AI tools seem to currently hinder broader adoption. The study also shows that private universities integrate generative AI tools more quickly than public institutions. Despite the identified challenges, opportunities for improving the integration of AI in university communication are shown, including closer collaboration between AI tools and the professional communicators at universities, and potential impacts of AI on university communication as a whole. It is shown that an open dialogue, the establishment of industry-specific practices, and further education with a view to generative AI tools are necessary to better understand potentials and risks and to productively use them for university communication.

Problem Definition and Background

Problem Definition: The increasing prevalence of artificial intelligence (AI) is increasingly influencing the higher education landscape, especially in communication and organizational development. Generative AI tools like ChatGPT simulate human-like conversations and answer a variety of questions. They can generate images, media, tables, layouts, or program code with a few text inputs. However, difficulties in distinguishing between facts and fiction, as well as dealing with scientific source proofs, show the necessity for a critical examination, especially in the context of higher education.

The potential application of chatbots for text synthesis and manipulation opens up potentials for efficient and personalized university communication. However, it is also necessary to consider data protection issues, ethical considerations, and the potential creation of a digital divide.

This study empirically analyzes the use of generative AI tools in university communication through a survey of press offices at all German universities. It examines whether generative AI tools influence communication practices, meet expectations, and potentially change

communication strategies and goals. It also sheds light on the impact on the internal organizational structure of universities and internal debates.

From the current discourse, four aspects can be distilled that form the background of this study:

- Digitalization has greatly transformed university communication, utilizing numerous additional communication channels. Social media enables direct dialogue between universities and their target audiences, but the role of generative AI in this domain remains unclear.
- Large language models, such as GPT-3, are revolutionizing human-computer interactions, simulating human conversations, and responding to inquiries. They could have implications for the labor market and various industries, yet experts caution against excessive enthusiasm.
- AI tools like ChatGPT could bring about disruptive changes and enable individual learning paths within the education system. However, this also raises ethical concerns. Expert opinions on the use of AI in academic research vary, calling for careful regulation.

■ Generative AI tools are likely to play an increasingly important role in science communication. Despite their potential to enhance efficiency and reach in communication, cautious utilization is currently recommended. Concerns regarding integrity, biases, and transparency are raised. Additionally, experts emphasize the need for a clear strategy and a didactic approach to integrating such tools. Further research in this area is necessary, particularly in developing a theory of human-machine communication.

Methodology

Useful Concepts: The analysis of socio-technical systems, in this context the interaction between generative AI tools and university structures, offers a profound insight into the implementation and use of these technologies. The integration of such tools into existing practices and the resulting changes in communication practices and organizational structures call for careful examination (Bijker et al. 2012; Orlikowski 1992; Leonardi 2011). The basic directions of the integrated social-constructivist approach, interpretative flexibility, and closure mechanism provide helpful guidelines (Pinch/Bijker 1984; Leonardi/Barley 2008).

Equally relevant is the consideration of the "Uses and Gratifications" theory (Katz/Foulkes 1962; Katz et al. 1973). This theory can be applied to investigate the needs and goals of various stakeholders in relation to AI tools and their communication-related purposes. It takes into account the desires and needs of the audience, the promotion of audience engagement and attention, as well as the own needs of university communicators. This reveals success criteria and potential application areas of AI tools like ChatGPT.

Research Approach: The study deals with the use and expectations of generative AI tools in the communication departments of universities. Our assumptions suggest that the adoption of these tools in university communication is slower than elsewhere and varies depending on the type of university. The tools are either strongly overestimated or underestimated, with either enthusiastic or skeptical reactions, but rarely neutral. The purpose of this study is to provide initial insights and inform later investigations.

Survey Methods: A semi-standardized online survey was conducted among German universities (N=318). The leading executives of the communication departments were selected as the target group. The Lime-Survey questionnaire captured usage, expectations, and needs regarding generative AI tools, as well as relevance, satisfaction, budget, specific functions, and challenges. It also asked about the role of such tools in internal discussions and estimates of future development. The evaluation was done using RStudio to

provide a comprehensive picture of the use of such tools in university communication.

Response and Representativeness: In this study, 318 universities were examined, of which 101 participated in the survey. Representativeness was evaluated based on three characteristics (type of university, sponsorship, size). Universities were slightly overrepresented, while technical colleges were underrepresented. Public universities were overrepresented, private universities underrepresented. Regarding university size, smaller institutions were underrepresented, while medium-sized universities were overrepresented. Despite these deviations, the representativeness is assessed as satisfactory, and the differences should not significantly influence the study results.

Results

■ *Experiences with Generative AI Tools:* The investigation into the use of AI-assisted tools in university communication reveals heterogeneous usage and awareness patterns. ChatGPT has a broad experiential base (40% have tried it), but regular usage remains limited (22%). In relation to other chatbots that also feature integrated web search (e.g., Bing Chat) or document analysis (e.g., ChatPDF), awareness is high, but usage is low. Tools for automated slide presentation creation are the least known, with no regular usage observed.

The highest frequency of usage is demonstrated by AI-powered translation and language correction tools (e.g., DeepL, Grammarly) with 73% regular usage. There are no significant differences in usage among different types of universities (university, university of applied sciences), but privately-funded institutions exhibit higher regular usage of chatbots (44%) compared to public universities (20%).

In summary, AI tools for text generation and translation already play a significant role in university communication, while other applications are less utilized or recognized. This may serve as a starting point for exploring further AI-supported processes in university communication.

■ *Concrete use cases for the AI tools:* The respondents primarily indicated that they use AI-assisted tools for creating and editing texts, translations, and media content. Some are not yet using such tools or are in the testing phase, due to lack of knowledge about the adequate use of these tools.

■ *Challenges and difficulties:* Regarding the use of AI tools, technical difficulties, suboptimal application, lack of adaptability, and lack of further education opportunities were cited. Data protection and ethical

concerns were the most frequently mentioned challenges, but they affected less than half of the respondents.

■ *Budget for AI tools:* Most AI tools are fee-based for professional use. The majority of respondents stated that they have a monthly budget of up to 50 euros. Only a small number of respondents have a budget of more than 1,000 euros, and a significant portion did not know how large their budget is.

■ *Satisfaction with the AI tools:* In terms of satisfaction, a mixed picture emerged. Most of the respondents expressed mixed feelings or were rather satisfied, while only a small number expressed high satisfaction or dissatisfaction.

■ *Needs and objectives in AI use:* The analysis reveals different needs and objectives in the use of AI tools in university communication. The greatest agreement was found for „time saving in creation“ (73%). Surprisingly little importance was attributed to functions related to personalized communication (2.3%) and quality improvement (15%). These data suggest an underrepresentation of the use of these technologies, indicating the need for further training.

■ *Important functions of the AI tools:* Regarding the value of individual AI functions, there is variability in the evaluation. „Automated translations“ was most frequently classified as very important (34%). However, respondents showed significant skepticism towards many functions, such as the „creation of personalized content“ (47% not at all important). The results emphasize the heterogeneity of the perception of specific AI functions, which requires further investigations into the determinants of these evaluations.

In terms of expectations for AI tools, respondents point to relevant functions such as language translation, support in the creation of concepts and plans, efficiency increase, user-friendliness, and error tolerance.

■ *Changes through AI tools:* However, most respondents did not notice a significant improvement in efficiency or significant changes in work practice through the use of AI tools.

■ *Internal Discussions:* Despite extensive discussions about generative AI tools in university committees (52%), guidelines for the use of such tools exist only in 4.8% of cases. Only 2.4% of universities have set strategic goals for generative AI, and 16% offer training. Generative AI tools are not a central topic for 30%. This suggests that despite the recognized potential and internal discussions, clear guidelines, trainings, and strategic initiatives for the implementation of generative AI tools in universities are not yet sufficiently available.

Assessments of Opportunities and Risks: The introduction of generative AI tools in university communication carries both opportunities and risks, as evidenced by the respondents' answers. Expected positive effects include increased efficiency and speed of processes, a reorientation of work tasks, and support in research and text creation. Moreover, AI tools are seen as a means of saving time, promoting creativity, quality assurance and improvement, as well as in translations.

On the other hand, concerns were also expressed: Dependence and susceptibility to errors of AI, data protection and copyright issues, lack of reflection („bubble communication“), job loss, and the loss of personal contact and human touch. Some respondents see AI as a radical change in university communication, while others view the role of AI as supportive, not replacing.

The assessments underline the broad spectrum of attitudes towards AI-supported tools in university communication, with the shared realization that a balanced consideration of opportunities and risks is crucial.

Discussion and Conclusion

■ *Discussion:* The empirical findings support the initial assumption of a slow integration of this technology in the higher education sector, driven by technical difficulties as well as ethical and data privacy concerns. State universities exhibit a noticeable reluctance in dealing with generative AI tools, whereas private universities demonstrate faster integration, particularly of generative chatbots. Nevertheless, satisfaction with the current outcomes is moderate, which could influence the intensity of usage. Further investigations are warranted to explore how satisfaction with these tools could be enhanced.

The initial assumption of an over- or underestimated significance of generative AI tools is confirmed by the respondents' heterogeneous perceptions and assessments of opportunities and risks. There is a wide range of attitudes towards generative AI tools in higher education communication, ranging from enthusiasm to skepticism. Continued intense exchange is needed within universities as well as within the practice community of higher education communicators regarding the potential applications of generative AI.

Our data suggests that knowledge about the versatile possibilities and capabilities of generative AI tools is still expandable. Viewing AI tools as instruments for efficiency improvement highlights the need for further education, as well as clear guidelines and strategies for the implementation of AI tools in higher education communication. While this is undoubtedly in-

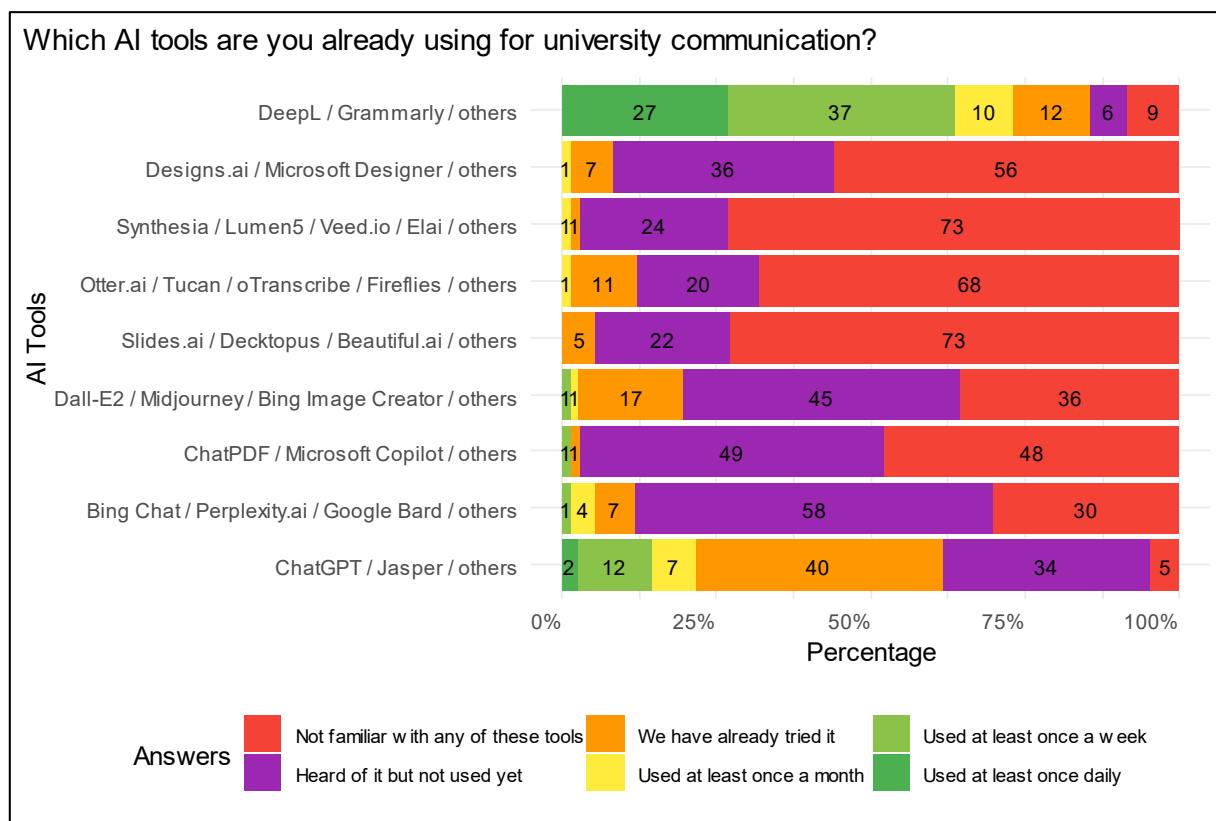
fluenced by the novelty of these innovations, it underscores important focal points for necessary future developments in the field.

In summary, our considerations and findings emphasize the need for a more intensive engagement with the potential of generative AI tools in higher education communication and the necessity for stronger integration into existing practices.

■ **Conclusion:** Our investigation of German universities reveals a cautious adoption of generative AI tools in university communication, with AI-powered translations and language corrections being particularly established. The reasons for this are diverse: on the one hand, many of these technologies are still relatively new in the market, while on the other hand, ethical, legal, and data protection concerns impede rapid implementation in public institutions. Nevertheless, discussions regarding the use of AI are underway, and the demand for education and training in this field is high.

The effective implementation of generative AI in university communication could be facilitated by the following factors: an interaction between AI tools and human communicators, where AI is not seen as a mere tool as its outcomes vary significantly based on how it is used. The use of generative AI to support decision-making processes is another important factor,

with transparency ensured regarding the AI tools employed. In this regard, it is also crucial for the providers of AI tools to disclose the data pools integrated into their language models. Lastly, considering the potential impacts of generative AI on employees and involving all generations in the design of change processes is essential. This emphasizes the need for open dialogue and broad education on generative AI to better understand and harness the potentials and risks associated with these technologies.



Source: Survey of press offices at German universities (May 2023). N=101.

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