30 Writing machines: Embodied gestures and generative AIs in higher education

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Research Domains

Digital University and new learning technologies (DU)

Abstract

The act of writing cannot be understood as disembodied information transfer, just as a technology or device cannot be regarded as an instrument or tool (Vlieghe 2016). Instead, any form of writing enrols the body in interaction with a physically tangible device, in which embodied subjectivities are formed through our prosthetic interrelationships with technologies. Generative AIs have the potential to fundamentally alter the experience of academic writing, and therefore how the embodied authoring self-unfolds. Marin (2021) takes a phenomenological approach which focuses on sensory configurations and the mediality of embodied gestures, drawing on Flusser (2014). She identifies three categories of gesture involved in academic writing: dis-assembling, assembling, and interlacing. Building on this work and utilising a heuristic approach to 'interviewing digital objects' (Adams and Thompson 2016) this paper will consist of a phenomenological investigation into the effects of GAIs on these gestures and academic writing in the age of AI.

Full paper

The act of writing cannot be understood as disembodied information transfer or the production of text, just as any technology or device cannot be regarded as mere instrument or tool (Vlieghe 2016). Instead, any form of writing, from longhand using graphomotoric control, to the motor and visual space of keyboards and screens (Mangen & Velay 2010) enrols the body in interaction with a physically tangible device. As such, the materiality of communication (Lenoir 1998) is not neutral but is agentive and constitutive of human subjectivities as writing bodies. Work in media theory has revealed closely intertwined relationships between technologies of inscription and material, cultural and ideological forms of education (McLuhan 1994, Friesen & Cressman 2010, Friesen 2017) and the generation of 'alphabetized bodies' (Kittler 1990). Stiegler, working in the philosophy of technology, holds that our embodied subjectivities are formed through prosthetic interrelationships with technologies (Stiegler 1998). Vieghle (2016) and calls for a technosomatic (Richardson 2010) account of how practices of reading and writing impact our bodies and the social and cultural effects of that entanglement, arguing that this leads to 'a grammar' of responding to the world via gestural routines. Typing differs from the productive gesture of handwriting as it can be seen instead as a pointing gesture (Mangen & Velay 2010), in which the keyboard writer becomes a consumer, with different technological arrangements opening up different spaces of experience in which we come to inhabit a particular relation to script (Vlieghe 2016). In this regard, one of the pressing questions for research in this area centres on how generative AIs will change human practices of writing and generating texts, and how these effects will be felt in the everyday practices of education, writing, study and meaning making. Textual practices in education and beyond have always been intertwined with technologies of inscription, from the earliest recorded human practices of writing using clay tablets (Friesen 2017), to the emergence of digital technologies. Theorists working in social semiotics have accounted for the multimodal nature of communication (Kress & van Leeuwen 1996), and more recently the complex materiality of textual communication has been theorised in the emergent field of Posthuman Applied Linguistics (Pennycook 2018a, 2018b). The advent of GAIs requires further theoretical extension to provide insights into how these 'more-than-human' machine–human texts emerge, how we might begin to understand the nature of authorship in the AI age, and how to understand the rapidly evolving and uncanny nature of these texts (Costello 2023). The way that we experience writing has been explored from a first-person perspective using the approach of phenomenology, '… the study of structures of consciousness from the first-person point of view. The focus is on how we experience things, '… notably the significance of objects, events, tools, the flow of time, the self, and others, as these things arise and are experienced in our 'lifeworld'.' (Stanford Encyclopaedia of Philosophy 2013). An analysis using this perspective focuses on aspects such as time, space, where we place our attention, the actions we take with our bodies, eyes and movements, the way we interact with others, and our linguistic activity, and has been applied to practice (van Manen 2009, 2014). In recent years postphenomenological enquiry has been developed to guide descriptions and enquiries into the nature of the experience of technologies in particular (e.g. Ihde 1990, 2002, Verbeek 2023). Further work has focused on digital technologies with a posthuman lens, such as Adams and

Thompson's (2016) Researching Posthuman Worlds, in which they developed a series of heuristics to be used to investigate the nature of experience of digital technologies, by 'interviewing objects', also used in Gourlay (2021). Adams has recently demonstrated in a study where she 'interviews' AI in education using these heuristic questions to investigate teachers' experiences of using GAIs (Adams 2023). Marin (2021) analyses the study practices of the university in terms of mediatic displacement, in which texts move between various modes of speech and text, taking a phenomenological approach focusing on sensory configurations and the mediality of embodied gestures, drawing on the work of Flusser (2011, 2014). Her analysis of interviews with students reveals what she calls the gestures of academic writing as study practice. She identifies three categories: dis-assembling, assembling, and interlacing. This paper will combine Adams and Thompson's heuristics with Marin's categories to conduct a phenomenological enquiry into the gestures invoked by generative AIs in higher education, focusing on mediatic displacement, authorship, and the notion of posthuman texts. Implications for research and practice will be discussed.

References

Adams, C. 2016. Programming the gesture of writing: On the algorithmic paratexts of the digital. Educational Theory 66(4), 479-497.

Adams, C. and Thompson, T. L. 2016. Researching A Posthuman World: Interviews with Digital Objects. Cham, Switzerland: Springer.

Costello, E. 2023. ChatGPT and the educational AI chatter: Full of bullshit or trying to tell us something? Postdigital Science and Education https://doi.org/10.1007/s42438-023-00398-5

Flusser, V. 2011. Does Writing Have a Future? (N.A. Roth trans.) Minneapolis, MN: University of Minnesota Press.

Flusser, V. 2014. Gestures. (N.A. Roth trans.) Minneapolis: University of Minnesota Press.

Friesen, N. 2017. The Textbook and the Lecture: Education in the Age of New Media. Baltimore, MD: Johns Hopkins University Press.

Friesen, N. and Cressman, D. 2010. Media theory, education and the university: A response to Kittler's history of the university as a media system. Canadian Journal of Media Studies 7(1).

Gourlay, L. 2021. Posthumanism and the Digital University: Texts, Bodies and Materialities. London, UK: Bloomsbury Publishing.

Ihde, D. 1990. Technology and the Lifeworld: From Garden to Earth. Bloomington, IN: Indiana University Press.

Ihde, D. 2002. Bodies in Technology. Minneapolis, MN: University of Minnesota Press.

Kittler, F. 1990. Discourse Networks 1800-1900. Stanford, CA: Stanford University Press.

Lenoir, T. (Ed.) 1998. Inscribing Science: Scientific Texts and the Materiality of Communication Stanford, CA: Stanford University Press.

Mangen, A. and Velay, J.L. 2010. Digitizing literacy: reflections on the haptics of writing. In Zadeh, M. H. (Ed.) Advances in Haptics. IN-TECH https://www.intechopen.com/chapters/9927

Marin, L. 2021. On The Possibility of a Digital University: Thinking and Mediatic Displacement at the University. Switzerland: Springer Nature. https://link.springer.com/book/10.1007/978-3-030-65976-9

McLuhan, M. 1994. Understanding Media: The Extensions of Man. Cambridge, MA: MIT Press.

Pennycook, A. 2018a. Posthuman applied linguistics. Applied Linguistics 39(4), 445-461.

Pennycook, A. 2018b. Posthumanist Applied Linguistics. London: Routledge.

Richardson, I. 2010. Faces, interfaces, screens: relational ontologies of framing, attention, and distraction. Transformations 18 http://www.transformationsjournal.org/wp-content/uploads/2017/01/Richardson_Trans18.pdf

Stanford Online Encyclopaedia of Philosophy 2013. Phenomenology.

Stiegler, B. 1998. Technics and Time 1: The Fault of Epithemeus. Stanford, CA: Stanford University Press.

van Manen, M. 2014. The Phenomenology of Practice: Meaning-Giving Methods in Phenomenological Research and Writing. London, UK: Routledge.

van Manen, M. and Adams, C. 2017. The phenomenology of space in writing online. Educational Philosophy and Theory 4(1), 10-21.

Verbeek, P. P. 2015a. A field guide to postphenomenology. In Rosenberger, R. and Verbeek, P. P. (Eds.) Postphenomenological Investigations: Essays on Human-Technology Relations. London, UK: Lexington Books, 9-41.

Verbeek, P.P. 2015b. What Things Do: Philosophical Reflections on Technology, Agency, and Design. Pennysylvania: The Pennysylvania State University Press.

Verbeek, P.P. 2023. Peter-Paul Verbeek Wordpress. https://ppverbeek.org/postphenomenology/

Vlieghe, J. 2016. Schooling bodies to read and write: a technosomatic perspective. Educational Theory 66(4), 441-455.