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DIFFRACTING HYBRID DIDAKTIK – RELATIONAL, FLUID, AND FRAGMENTED DIGITAL WRITING TUTORING IN HIGHER EDUCATION

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Abstract

The study contributes to the nascent digital academic writing tutoring field by applying posthuman thinking while investigating intimate socio-material relations during a participatory action research project. Due to the COVID-19 pandemic (2020–2021), on-campus academic writing workshops moved online to Zoom, Moodle, and Padlet. We became inspired by Jackson and Mazzei's thinking-with-theories and Haraway's concept of diffraction when inquiring into how and why humans and more-than-humans made a difference in digital academic tutoring. Lively conversations emerged inbetween the research matters (tutor logbooks, embodied experiences, course materialities) and authors by diffracting them with the posthuman cyborg, hybridity, and Didaktik. The posthuman cyborg questioned what, who mattered, and why, pointing to embedded humans and more-than-humans shaping fragmented digital relations. Hybridity brought fluidity and fusions of different educational dimensions (openness/structure, teacher/student) to the study. Didaktik suggested that fluid tutoring structures (curriculum) and institutional politics (study credits) interfered with the teacher-student collaboration. We propose a posthuman relational, fluid, and fragmented framework called a hybrid Didaktik when developing teacher-student collaboration across several digital systems. By inviting materialities alongside human experiences into discussions about digital teaching, new practices sensitive to socio-material and political relations may unfold in higher education.

Keywords: *digital academic writing tutoring, the cyborg, hybridity, Didaktik, higher education, socio-material relations, political relations, Zoom, Padlet, Moodle*

(Un)folding the inquiry

Digital academic writing tutoring remains a nascent field mainly focused on human relations between students and supervisors. Human and more-than-human (e.g., digital) relations are rarely explored in higher education, and the digital is often understood as disembodied, decontextualized, and neutral (Gourlay, 2022b; Gravett, Taylor and Fairchild, 2021). In contrast, posthuman approaches understand digital technologies as *socio-material* elements that bridge social contexts and embodied practices as they shape and become shaped by human and more-than-human forces. Due to the COVID-19 pandemic, many educators had to move their teaching online – often with little consideration for the socio-material relations of digital teaching, emphasizing the topicality of digital academic writing tutoring (Gourlay, 2022a; Hodges *et al.*, 2020; Littlejohn *et al.*, 2021).

Consequently, this study aims to explore the socio-material relations produced when on-campus academic writing workshops moved online because of the COVID-19 pandemic. The writing tutor Sofia (Author 2) had developed the workshops in a participatory action research (PAR) project arranged for three years before the pandemic. She could not depend on the on-campus workshop structure where classrooms and human bodies (i.e., students and tutor) shaped the tutoring practice (Jusslin and Widlund, 2021). Instead, Zoom¹, Padlet², and Moodle³ shaped new digital course structures to support the participating bachelor's and master's students' thesis writing differently. In a previous study, we explored how the digital workshops made a difference in supporting the student's thesis writing processes. We investigated the (un)expected and hybrid movements that may happen when humans and materialities (text documents, sharing screens) come together in a digital format (Jusslin and Hilli, 2023).

The current study focused on socio-material relations in digital academic writing tutoring. We adopted diffraction – that is, an “effort to make a difference in the world” (Haraway, 1992, p. 16) – to understand the effects of situations that interfered with the digital academic writing workshops. The interferences sometimes created new tutoring practices and sometimes hindered tutoring. Diffraction pointed us to posthuman understandings of relationality *within* situations and relations *between* materialities, social practices, and politics in education. Similarly, Taylor (2019) diffracted the curriculum in an undergraduate course on Educational Spaces at a UK university. The teacher (Taylor) invited the students to decide the course aims and themes to rethink linearity, embodiedness, educational spaces, and curricula. The students and teacher collaboratively cocreated and experimented with what and who mattered in education as they did the course differently, for example, by writing together rather than apart. By diffracting the curriculum, productive socio-material relations (e.g., bodies, spaces, and materialities) became possible.

Ontologically, posthuman thinking suggests that fragmented socio-material relations emerge as humans and more-than-humans do things differently in education; one example is the cyborg metaphor (Taylor, 2016). We employed the cyborg metaphor to investigate the ontological state of the embedded human/nature/culture (Haraway, 2016). The cyborg is a diffraction, a hybrid of past and present capitalist systems, human embodied experiences, and technologies. The fragmented cyborg does not strive for completeness or unity; rather, it ironizes over its roots in humanist ideas, capitalist politics, and digital systems. It is wary of taken-for-granted dualisms (e.g., idealism/materialism, digital/analogue). It suggests dissolving boundaries between humans and machines as digitally connected humans become embedded with communication devices and

1

Zoom is a videoconference platform that includes public and private chats, breakout rooms for small-group discussions, and interactive whiteboards for collaboration. Zoom was licensed by the university and used as a main platform for videoconferences. 2

Padlet is an interactive bulletin board where users can anonymously add and reply to text-based comments or questions. Users can also add visual elements (e.g., pictures). The university did not have a Padlet license, and the tutor had to set up a private account during the workshops. 3

Moodle was the university's learning management system. During the PAR project, Moodle became a space for course materials, literature tips, and other material related to thesis writing. digital networks. It seeks connections and relationality as it tries to navigate and resist the capitalist systems that create, refuse, or question its existence. The cyborg often creates popular uneasiness, fear, and/or fascination because it refuses to uphold boundaries taken for granted. The cyborg emerges as humans and machines are transgressed, *in-between* political and digital systems,

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embodied experiences, and social realities (Haraway, 2016). This in-between state expresses the cyborg's fragmented realities, never complete and always looking for new and multiple connections.

Posthuman approaches can cut across research disciplines and theories to explore the intimate relations between humans and more-than-humans in education (Snaza and Weaver, 2015). The current study diffracted the educationally situated concept of hybridity and a Didaktik theory with posthuman perspectives and research materials (tutor logbooks, embodied experiences, course materialities). However, Didaktik and hybridity are rooted in anthropocentric notions of education upholding distinctions between humans and others. The posthuman cyborg diffracted the technological and political tensions within higher education and helped us question what and who mattered in digital academic writing tutoring and for what reasons.

The study proposes a posthuman teaching framework, *hybrid Didaktik*, addressing higher education's relational, fluid, and fragmented socio-material and political relations. Like the cyborg, *hybridity* refutes static dichotomies, instead suggesting fluidity and fusions of dimensions in teaching (e.g., openness/structure, teacher/student). Hybridity may offer new ways for teachers and students to diffract digital courses in higher education together. *Didaktik* refers to theories on teaching's interpersonal (teacher-student), instructional, and conditional aspects. Like posthumanism, Didaktik brings contextual and political elements to the fore because teaching will always be culturally and politically situated. Didaktik may support teachers when structuring courses by considering instructional matters (curriculum) and politically informed frames (study credits) in higher education.

Next, we review previous research on distance supervision, thesis writing, and education and then move to the theoretical frameworks mentioned above. In the methods section, we present the study's posthuman approaches and analytical engagements besides the PAR project. In the last sections of the paper, we discuss the findings and implications of relational, fluid, and fragmented hybrid tutoring in higher education.

Previous research on distance supervision, thesis writing, and education

Previous research has identified opportunities and challenges with distance supervision and thesis writing. Opportunities relate to spontaneous and rapid movements across texts and access to support and immediate feedback, which can increase motivation and commitment to thesis writing (Jusslin and Hilli, 2023; Könings *et al.*, 2016). Challenges include time constraints, increased workload, computer literacy skills, and difficulties establishing personal relationships (Nasiri and Mafakheri, 2015; Zaheer and Munir, 2020). Best practices seemingly encompass explicit, structured, and scaffolded instruction on writing and feedback from supervisors and peers through timely and constructive (synchronous and asynchronous) comments (Guerin and Aitchinson, 2021). While an online format can create an embodied and affective distance from peers, it can still lessen the solitariness of thesis writing for geographically dispersed students (Jusslin and Hilli, 2023). Establishing good working relationships between students and supervisors is essential because students are more likely to be receptive to feedback if they trust their supervisors (Kumar and Coe, 2017). Although the opportunities and challenges mentioned above are mainly linked to supervision, we argue for their relevance for digital academic writing tutoring.

Researchers have begun using more-than-human approaches to researching distance education, supervision, and thesis writing. Using socio-material and posthuman perspectives, Gourlay *et al.*

(2021) showed how multiple boundaries were blurred or abandoned when educators moved their teaching online due to the pandemic. Educators entangled themselves with different materialities (e.g., digital devices and software) to teach in other ways. Online teaching is a profound material and embodied practice that is always “in person” and by no means without friction (Gourlay *et al.*, 2021, pp. 62–63). This echoes findings on supervision and thesis writing suggesting that students and supervisors become entangled with humans, affects, materials, forces, and spaces (e.g., Fullagar *et al.*, 2017; Grant, 2018; Jusslin and Eklund, 2022; Jusslin and Widlund, 2021). Supervision and thesis writing processes involve mutual (un)learning and relational becomings for students and supervisors, as they happen in ongoing processes without a clear template or map (Fullagar *et al.*, 2017; Jusslin and Eklund, 2022). Moreover, whereas some studies mentioned above discuss hybrid teacher roles, objects, and spaces (Gourlay, 2022a; Gourlay *et al.*, 2021; Littlejohn *et al.*, 2021), the notion of hybridity is yet to be explored within digital academic writing tutoring. The current study presents a novel approach to exploring how posthumanism, hybridity and Didaktik can facilitate academic writing workshops with bachelor’s and master’s students in hybrid learning spaces.

Hybridity as a fluid pedagogical compound

Hybridity originates from biology and refers to cross-fertilisation or the fusion of separate species into a new one (Hilli, Nørgård and Aaen, 2019). As a pedagogical concept, hybridity refutes dichotomies (e.g., teacher/student, openness/structure) and celebrates fusions of teaching and learning activities and spaces (Stommel, 2012). By accepting these ideas of fusions, hybridity encourages us to rethink place in education and question when, where, and how teaching and learning happen (Cohen, Nørgård, and Mor, 2020).

Einat and Gil (2022, p. 22) suggest that hybrid may be interpreted as *fluid* because it “represents a greater flow in and between dichotomies,” like teacher/student and openness/structure in education. A new hybrid compound becomes created when two or more entities meet. Stommel (2012, unpagged) writes: “Hybridity is about the moment of play, in which the two sides of the binaries begin to dance around (and through) one another before landing in some new configuration.” Hybridity as fluid teaching follows our lines of thought as ever-changing and depending on different contexts, students, teachers, and spaces.

Previous research on hybrid teaching suggests new opportunities for teachers and students to collaborate digitally and experiment with new ways to combine spaces, digital systems, and technologies (Cook, Mor, and Santos, 2020; Hilli *et al.*, 2019). Still, open or ill-defined hybrid course designs may result in confusion and frustration as teachers and students try to navigate several digital spaces while diffracting the course curriculum together (Nørgård and Hilli, 2022).

Research on hybrid teaching is generally concerned with dichotomies in education and lacks comprehensive theoretical frameworks for teaching that considers normative and political dimensions of education (cf. Didaktik). In the current study, the writing tutor Sofia described how an open course structure and digital teacher-student collaboration produced new hybrid course designs (cf. Cohen *et al.*, 2020). Diffracting hybridity with posthumanism challenged us to consider fluid socio-material tutoring *in-between* humans (tutor, student), digital technologies, and spaces (Gourlay, 2022b; Haraway, 2016).

Didaktik – contextuality, politics, and relationality in Higher Education

Educational theories of Didaktik have played an essential role in Nordic educational systems, and the site for this study a Finnish university. Didaktik offers interpersonal frameworks for teachers structuring the curriculum and students' studying and potential learning processes (Uljens and Ylimaki, 2017). Furthermore, Didaktik confronts teaching's normative, contextual, and political dimensions because teaching is neither neutral nor understandable without education's cultural and political contexts. Contextual factors of interest in this study are the politics of European higher education shaping digital academic writing tutoring.

According to Magnússon and Rytzler (2022), different supranational policies in the European Union (EU) have paved the way for bachelor's and master's level programmes⁴ and transferable study credits (ECTS⁵). Standardised degrees shift the role of higher education from knowledge in the interests of the common good to degree mobility, employability, and competition within the EU. Market rationality affects teaching because it may result in universal teaching models (e.g., Constructive Alignment) unconnected to relational and contextual aspects of education, e.g., the teachers' and students' interests and realities.

A posthuman view applauds and extends the critique against universal theories and neoliberal politics because they neglect the differences in and situatedness of human experiences (Taylor, 2016). The politics of digital technologies may create fragmented socio-material communication processes depending on the embeddedness of digital systems and embodied human experiences (Haraway, 2016). Claims that digital technologies are neutral or free humans from the sociomaterial world refute the relationality, embodiedness, and particularities of human experiences in digital spaces (Gourlay, 2022b). Such claims are unhelpful when considering how digital technologies shape and disrupt teaching in higher education.

The Didaktik model employed in the current study addresses instructional and conditional aspects of teaching contrary to many other didactic models that focus on instructional matters (Jank and Meyer, 2006). The model included six instruction-related categories and three factors deemed conditional to teaching. The six interrelated categories refer to instructional and interpersonal aspects of teaching: *intentions* with teaching, choosing *content*, *teaching methods*, and *media* relevant to the *students* and the *sociocultural context* of teaching (Keiding, 2013). Normative factors include educational values (e.g., employability) and teaching guidelines (e.g., curriculum). Conditional factors relate to matters of grading (e.g., ECTS), whereas professional factors relate to the teachers'

4

EU countries have adopted the suggestions in different ways (Magnússon & Rytzler, 2022). In Finnish higher education, two-level study programmes have been enacted, also at Åbo Akademi University the site for this study.

5

European Credit Transfer System credits. 1 ECTS equals about 27h coursework for the student at Åbo Akademi University.

experiences, values, and knowledge.

A theory for analyzing teaching practices

The figure is inspired by Jank & Meyer, 2006; Keiding, 2013

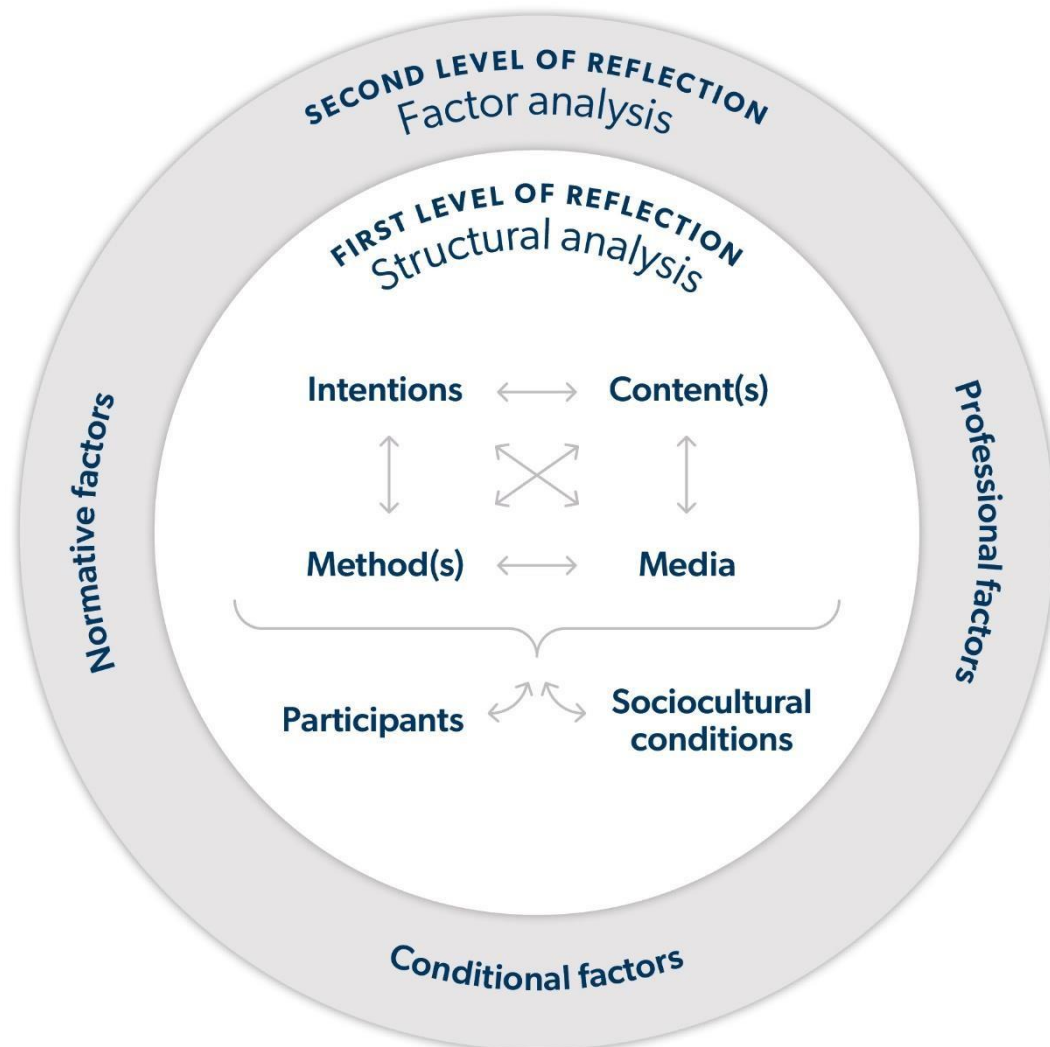


Figure 1. A Didaktik model for analysing teaching inspired by Jank and Meyer (2006) and Keiding (2013).

Didaktik expects the teacher to transform the curriculum into a meaningful syllabus for the students. The model (see *Figure 1*) is not static because it suggests that the elements are interrelated, not separate. Still, Didaktik maintains that humans are active while other matters are objects. Posthumanism critiques humanist notions of teachers' planning and executing the curriculum because teaching inevitably becomes diffractions shaped by different socio-material relations (cf. Gravett *et al.*, 2021; Taylor, 2019). Diffracting Didaktik with hybridity and posthumanism created fluid movements in-between the seemingly neat structure of the model. In the process, humans

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(tutor, students) became de-centred in favour of more-than-humans (e.g., digital technologies and systems) in the digital academic writing workshops.

A post-qualitative research approach

The study adopts a post-qualitative approach by putting theories, materials, and researchers to work non-hierarchically (Jackson and Mazzei, 2017). As researchers, we think with theories-concepts-methods and, in this case, with each other to *do* research in (new) ways that resonate with philosophies, theories, and materials (Tesar, 2021). There is no set method or analytic approach to follow. Instead, researchers consider theories, concepts and materials, ontologies, epistemologies, methodologies, and ethical concerns to perform the inquiry consciously. Typical for postqualitative research is the ontological and epistemological embeddedness of researchers, materials, theories, and concepts that are already in relation to each other, affecting each other and contributing to the implications of the study (Jackson and Mazzei, 2017).

The post-qualitative approach meant we invited the theoretical frameworks (hybridity, Didaktik, the cyborg) to study dimensions often overlooked in previous research, i.e., the socio-material relations in digital academic writing tutoring. Jackson and Mazzei (2017) call these processes enactments of thinking with theory. The process does not start with a method or end with universal truth claims. Mazzei (2021, p. 198) writes: “It is provoked by a problem and transformed by the contour of a concept. There might be multiple concepts that one might think with, but each provides a different transformation, a different flight, a different attunement.” Post-qualitative inquiries start with problems and produce new problems and (hopefully) different ways of doing things. In this study, the writing tutor, Sofia (Author 2), experienced challenges when previous oncampus writing workshops had to be transformed into online formats due to Covid-19 restrictions. Thinking-with hybridity, Didaktik and the cyborg helped conceptualize new ways of teaching online and supporting course participants.

Our enactment of thinking-with theories produced diffractions in digital academic writing tutoring. Haraway (1992, p. 16) explains diffraction or interference patterns as optical metaphors “for the effort to make a difference in the world”. Haraway’s (1992) understanding of diffraction has ontological and epistemological implications because it suggests intimate relationships between humans, nature, and culture. As discussed in the introduction, the cyborg metaphor interfered with our inquiry by addressing ontological, epistemological, and political questions about what hybrid tutoring might become in-between human embodied experiences and digital systems in higher education. Our analytical question was: what and who mattered in digital academic writing tutoring, and for what reasons?

Jenkins, Ritchie, and Quinn (2020, p. 978) suggest that Haraway’s adoption of diffraction breaks with qualitative approaches that can result in reproduced sameness or similar themes when researchers use the optical metaphor of reflection in their analysis; instead, “diffraction refers to the disruptions of wave-based systems as they encounter obstacles” and create patterns of interferences. Here, interference patterns became movements around, through, and with the theoretical frameworks and research materials to identify what and who disrupted the tutoring practice and what these interferences produced.

Participatory action research cycles as human and more-than-human course developments

The study builds on a participatory action research (PAR) project that developed a collaborative writing environment for thesis writing at Åbo Akademi University (ÅAU) and generated

knowledge about academic writing tutoring (2017–2022). Adopting a socio-material approach to PAR, the actions taken to develop the workshops happened in relations between various humans (e.g., tutors/researchers, students, the research group) and more-than-humans (e.g., Zoom and Padlet), emphasizing that the research was not an anthropocentric endeavour and that more-than-humans mattered in the actions taken (Allen and Marshall, 2019; Suopajarvi, 2017). Material aspects were discussed with the students at the courses' beginnings and ends. For example, students could suggest topics to be raised in the courses, and Moodle was introduced based on students' wishes.

The project identified a need to support students in their thesis writing processes at ÅAU. Starting in 2017, the project developed the academic writing workshops as university courses (5–10 ECTS) offered on-campus. Sofia was the writing tutor in the courses (sometimes collaborating with other writing tutors) held during the spring and the summer. Human course participants were bachelor's and master's students, mainly in educational, social, and health sciences. The tutors did not supervise the content of the theses (e.g., choice of subject, theory, and methodology). However, they focused on supporting the writing process, creating a positive and supportive writing environment, and initiating discussions about academic writing and research.

The goals of the course were to engage in a collaborative writing approach (e.g., writing together in the same space), advance the thesis writing process, and provide and receive constructive feedback on theses as work-in-progress. The workshops were held twice a week for three hours per workshop and provided three types of support: (1) individual tutor feedback, (2) student response groups, and (3) thematic discussions. The individual tutor feedback on students' drafts was provided based on students' initiatives and encompassed non-scheduled feedback sessions. The students met in response groups at least once per course to give and receive feedback on each other's drafts. Ultimately, the thematic discussions aimed to help the students with the writing processes, breaking them down into more graspable units. Each workshop addressed one or two themes (e.g., disposition, introduction, theory, methods, results, and discussion).

This study focused on the fourth and fifth PAR cycles (2020–2021). Jusslin and Widlund (2021) report the first three campus-based research cycles. The pandemic moved all teaching online at the beginning of the fourth research cycle in 2020. In this transition, the university paused all teaching for a week to give teachers time to transform onsite teaching to an online format. The workshops embarked upon emergency remote teaching (Hodges *et al.*, 2020), and Zoom became the writing workshops' new meeting space. Sofia's mindset was not to preserve the campus-based structure. Digital workshops needed to be different from those on-campus because of the changes in the learning environment, acknowledging both embodied constraints and new digital possibilities. Changes included, for example, introducing new spaces (e.g., Padlet) and resources (e.g., digital whiteboards) and altering how to assess attendance. Figure 2 details the courses in the research cycles, their participants, and the changes conducted between the cycles.

Cycle 4	Spring course 2020	Cycle 5	Spring course 2021
	<p><i>Time:</i></p> <ul style="list-style-type: none"> • Five weeks – Mid-March to mid-April • 10 workshops <p><i>Format:</i></p> <ul style="list-style-type: none"> • One week onsite • One week break to change to emergency remote teaching • Three weeks of emergency remote teaching <p><i>Participants:</i></p> <ul style="list-style-type: none"> • One tutor • 29 students • Digital spaces (Zoom and chats in Zoom, Moodle) • Materialities (e.g., microphones, paper, pens, attendance sheet, earbuds) 		<p><i>Time:</i></p> <ul style="list-style-type: none"> • Five weeks – Mid-March to mid-April • 10 workshops <p><i>Format:</i></p> <ul style="list-style-type: none"> • Five weeks of online teaching <p><i>Participants:</i></p> <ul style="list-style-type: none"> • One tutor • 16 students • Digital spaces (Zoom, Moodle, digital whiteboard and chats in Zoom, Padlet) • Materialities (e.g., earbuds, microphones, tutor's work-in-progress and publications)
	<p>Summer course 2020</p> <p><i>Time:</i></p> <ul style="list-style-type: none"> • Eight weeks – June and August • 16 workshops <p><i>Format:</i></p> <ul style="list-style-type: none"> • Eight weeks of emergency remote teaching <p><i>Participants:</i></p> <ul style="list-style-type: none"> • Two tutors • 26 students • Digital spaces (Zoom, Moodle, digital whiteboard and chats in Zoom) • Materialities (e.g., microphones, paper, pens, attendance sheet, earbuds) 		<p>Summer course 2021</p> <p><i>Time:</i></p> <ul style="list-style-type: none"> • Eight weeks – June and August • 16 workshops <p><i>Format:</i></p> <ul style="list-style-type: none"> • Eight weeks of online teaching <p><i>Participants:</i></p> <ul style="list-style-type: none"> • One tutor • 16 students • Digital spaces (Zoom, Moodle, digital whiteboard and chats in Zoom, Padlet) • Materialities (e.g., earbuds, microphones, tutor's work-in-progress and publications)
	<p>Changes made between cycles 4–5:</p> <ul style="list-style-type: none"> • From emergency remote teaching to planned online teaching • From assessing attendance to assessing activity • Increasing and planning use of the chat and breakout rooms • Color-coding tutors' work-in-progress texts and publications to provide examples • Using Padlet in thematic discussions 		<p>Post-pandemic future for the workshops after completed PAR project:</p> <ul style="list-style-type: none"> • Onsite course during spring term • Online course during the summer

Figure 2. Overview of the PAR cycles.

When rethinking the digital workshop structure, Sofia drew on her disciplinary background, previous experiences, and knowledge. She was a certified Swedish and literature education teacher with a vocational degree in audio-visual communication, making her comfortable working in digital environments. During this study, Sofia was a teacher educator and postdoctoral researcher teaching and researching literacy pedagogy. She had experiences with posthumanism and practicebased methodologies influencing how she worked with academic writing and improvised in creating new structures in the digital workshops.

Thinking-with concepts, theories, research materials and researchers

The writing tutor, Sofia, initiated thinking-with Charlotta (Author 1) in the middle of the fourth PAR cycle as the workshops moved online. Sofia became intrigued by previous studies on hybrid learning spaces co-authored by Charlotta (Hilli *et al.*, 2019; Nørgård and Hilli, 2022). We approached the study by discussing student evaluations, course materials, Sofia's logbooks, and embodied experiences. Our discussions happened onsite (conference venues, cafés) or online (chats, Zoom), providing energy and inspiration to continue the research processes. While analysing the student evaluations in a previous study (Jusslin and Hilli, 2023), Charlotta became interested in the socio-material relations of the tutoring practice. Initially, she wanted to explore how digital technologies and systems transformed the tutoring practice. During the thinking-with processes, Charlotta became intrigued by the institutional requirements and how they shaped the tutoring practice. In our discussions, Charlotta followed up on questions on the course developments during the PAR project and other course materialities (curriculum, study credits, student attendance).

The research materials Sofia produced were logbooks after each workshop and studying materials in Moodle, Zoom, and Padlet. Sofia voice recorded or wrote 26 logbooks in MS Word documents (1/2 – 1 page each) where she explained her didactic choices and shared embodied experiences (engagement, fatigue, lack of focus). She focused on human and more-than-human forces intermingled in the workshops in her logbooks. Charlotta read the logbooks and commented in Word documents when and how materialities interfered with the tutoring practice. Charlotta suggested hybridity, Didaktik and diffraction to think-with, something Sofia approved of. Sofia shared her embodied experiences and thoughts on the draft during the thinking-with processes; she added teaching materials she developed in Zoom (see *Figure 3*). Also, Sofia approved and added to the interferences presented below.

Our inquiry created three interferences suggesting academic writing tutoring became relational, fluid and fragmented in a digital format. The thinking-with processes expanded from the human (tutor, students) and more-than-human (Zoom, Padlet, Moodle) centred logbooks. The processes also became conversations with other materialities, such as institutional politics (study credits, grades), the curriculum and syllabus, Zoom chats, and whiteboard.

Relational, fluid, and fragmented hybrid tutoring

The post-qualitative approach moved our attention from the human-centeredness (tutor, student) and sociocultural aspects of digital tutoring to lively socio-material relations in-between institutional politics, course materialities, digital communication patterns, and human embodied experiences. Three interferences became produced within situations affecting the tutoring practice in different ways. The interferences should not be understood as disconnected from each other. Instead, they provide different understandings of the situations and their effects during the courses. In the next section, the interferences are discussed along with logbook entries and a Zoom whiteboard drawing that the writing tutor Sofia created during one of the digital workshops (see *Figure 3*). The three non-hierarchical interferences have been pulled apart for illustrative purposes:

- Relational hybrid tutoring in-between institutional politics, course materialities and human embodied experiences
- Fluid hybrid tutoring in-between digital communication patterns and humans

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- Fragmented hybrid tutoring in-between digital systems, materialities, and human embodied experiences

Relational hybrid tutoring became produced in-between socio-material and political relations. Institutional politics set the PAR project in motion and produced materialities such as the curriculum, grades, and study credits. The writing tutor Sofia upheld institutional requirements of students' attendance for course grades. By developing a flexible syllabus open to humans (students) and more-than-humans (Zoom, Padlet) in the PAR project, Sofia resisted universal models of teaching and testing cognitive learning goals. Tutoring in-between Zoom private chats, the tutor's computer and digital documents became sensitive to students' different needs, but also more timeconsuming compared to on-campus tutoring.

Fluid hybrid tutoring produced new digital communication patterns in-between the socio-material relations of humans and more-than-humans in the workshops. Padlet bulletin boards and the Zoom whiteboards created different opportunities for new in-the-moment teaching practices. Private Zoom chats helped shape a new tutoring practice sensitive to students' different needs of course structure and communication. Communication patterns in private Zoom chats also created new ethical considerations as boundaries blurred between public and private communication.

Fragmented hybrid tutoring created interferences in-between digital systems (Zoom, Moodle), embodied human experiences, and technologies (Bluetooth, headphones, microphones). The socio-material relations during the three-hour digital workshops created different embodied effects in the tutor, such as inspiration and tiredness. The Zoom chat interface contributed to a lack of focus because overviewing several private chats simultaneously was challenging.

Relational hybrid tutoring in-between institutional politics, course materialities and human embodied experiences

Relational hybrid tutoring suggests institutional politics shaped the socio-material relations produced in the digital workshops. Human and more-than-human interferences created movements in-between political, material, and embodied elements. The professor of Swedish and literature at the university initiated the course, and Sofia took the lead in developing it as part of the PAR project. It was a university requirement to include a course description, course goals, study credits and grades (passed/failed). Sofia developed a description that could cover students' needs in their thesis writing processes. The course goals were based on advancing the writing processes rather than cognitive goals to be tested. In 2020, the faculty board approved the curriculum as part of the study program, emphasizing that the course will be offered twice each academic year. The curriculum became influenced by the tutor's research perspectives (e.g., posthumanism, practice-based methods) and embodied experiences as an academic writer.

“I don't want to present a finished outline because all courses, writing processes, theses, and students are different, and we create something new every time we meet. My inquiry/problem-based learning works for me and the students. I am challenged as a researcher and teacher in every workshop when I must answer their questions unprepared. Excellent questions on many different levels.” (Sofia's logbook, April 7th, 2021)

Study credits (5–10 ECTS) made offering the course within the university possible. However, study credits forced a focus on grades (passed/failed) and student attendance. Sofia would check student attendance orally and individually with each student in on-campus courses. In Zoom, she communicated in private chats with students to efficiently use the time and avoid interrupting

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those who wanted to write. Student attendance became digitally documented in documents saved on the tutor's computer. Checking student attendance required Sofia to move in-between the Zoom chat interface and digital documents on her computer, making it more time-consuming than on-campus.

“When I didn't have individual [oral] sessions with them, I decided to update myself and the students on their status on the course requirements and the goals students had set at the beginning of the course. I did this in the chat because checking my notes and attendance sheet would take longer. The students could write their theses and answer me in the chat when they had time. It was easy to do this in the chat. I wrote how many workshops they had attended and how many they still needed to attend. We checked their word count and whether they had applied for a response group. This way, the students know I'm updated about their situation. We updated their plans (e.g., from 10 ECTS to 5 ECTS) to know what's what. It worked well in the chat. It took time for some students to reply. I simultaneously discussed with other students. It was challenging to follow all chats since they were all in the same window, but it worked well.” (Sofia's logbook August 2nd, 2021)

Student attendance required the student to participate in at least six workshops for 5 ECTS and 12 workshops for 10 ECTS. Previously, attendance in the on-campus courses meant students' embodied presence in the room with the writing tutor. The lack of visible bodies in Zoom disrupted how the tutor checked attendance. Instead of checking attendance at the workshops' start, she did it at the end to ensure students participated in Zoom throughout the three-hour workshop.

“Before, I checked attendance at the beginning of the workshops, but that didn't work in Zoom. So now I check attendance at the end of the workshops. I don't notice if students suddenly disappear because it's harder to check who participates all to the end when I don't see them “in the room”. That's why I tell them I check attendance at the end.” (Sofia's logbook April 3rd, 2021)

Relational hybrid tutoring created movements in-between institutional politics, digital systems, and socio-material relations in higher education. The tutor could not disregard the institutional material demands of a curriculum, study credits, and grades. However, Didaktik suggests that open guidelines can encourage teachers to transform the curriculum and syllabus with their professional knowledge, the course content, and the needs of different students (Magnússon and Rytzler, 2022). Discussions about student attendance transformed into private chat sessions in Zoom, creating a hybrid compound sensitive to students' different needs of course structure and communication with the tutor (Cohen *et al.*, 2020). Still, checking students' digital attendance produced time-consuming movements between digital documents, devices (computer) and digital interfaces (Zoom chats).

We understand relational hybrid tutoring practices as produced *in-between* political and sociomaterial relations that re-work ideas of control and course participation (Haraway, 2016). The syllabus became socio-material enactments of embodied humans (tutor, students) and more-thanhumans (devices, digital technologies, and systems) in the digital workshops. The cyborg/tutor became a product and a victim of higher education politics. The new digital academic writing tutoring upheld the university's requirements of measurable quantities (study credits, grades, student attendance)

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while creating a sensitive yet time-consuming control practice. The cyborg/tutor's compliance and resistance can be seen as acts to survive during a global pandemic and in a new digital landscape (Zoom) shaped by old systems (student attendance in on-campus teaching) and emergency politics that closed university campuses (Haraway, 2016).

Fluid hybrid tutoring in-between digital communication patterns and humans

Fluid hybrid tutoring drew our attention to human and more-than-human interferences changing the communication patterns in the digital workshops. Students interfered with the tutoring practice by writing in the public Zoom chat instead of on paper, after which chat questions became included in the discussions. This interference spurred the introduction of a new digital space for collaboration. The interactive bulletin board, Padlet, became part of the course's socio-material relations in 2021 (see *Figure 2*).

“It hit me how bound you are by old structures, although you have new meaningmaking opportunities. A student wrote thoughts straight into the chat in a thematic discussion while others wrote on paper. I had not even thought about doing this in the chat. We should do this again [Padlet was introduced in 2021]. It feels like I am still developing as a digital writing tutor, and I find new and better ways to tutor with the help of the students.” (Sofia's logbook June 8th, 2020)

Padlet provided overviews of the students' and tutor's written communication patterns because it collected (anonymous) user questions and offered them opportunities to comment and add followup questions. Padlet created a welcome interference that allowed the writing tutor time to find relevant teaching materials on her computer or Moodle and prepare for in-the-moment teaching in Zoom.

“In the summer's second workshop, we started with a thematic discussion on dispositions. We used Padlet and five minutes to gather our thoughts. The students posed good and relevant questions. I answered and invited others to reflect on the questions and share experiences. It became a good discussion. I have prepared my texts [published articles and work-in-progress] that I will share based on the questions in Padlet. This way, it is easy to share my screen when I give examples of how “answers” may look in writing. Padlet allows students to think about and formulate their questions and look at other students' questions (which can provoke new questions), but it also allows me to prepare the texts and digitally start sharing the screen depending on their questions. I'm pleased about the collaborative aspects of Padlet and how it supports students and me, didactically since I know in advance what they will ask [in the thematic discussion], and I can prepare documents and texts I need to exemplify and make the discussions concrete.” (Sofia's logbook June 2nd, 2021)

Moving the courses online disrupted the communication patterns of tutoring. Sofia initially felt materially constrained because she did not have an analogue whiteboard to work with during discussions. By including the digital whiteboard in Zoom, Sofia could draw in-the-moment teaching materials related to student questions posed in Padlet or the Zoom chats (see *Figure 3*).



Figure 3. The tutor created in-the-moment drawings related to the students' questions on the interactive Zoom whiteboard.

New digital communication patterns emerged in Zoom when students wrote private chat messages to the tutor. Private chats in Zoom created new ways for the tutor to share anonymous questions with the whole group. Private chats in Zoom helped create sensitive communication patterns to discuss relevant matters. However, private chats pointed to new ethical considerations because the tutor had to determine what messages were intended for private discussions with her and what information she could share with the group.

“Students use the chat function and write private messages to me. I realised that I do not always know how to interpret private messages. Sometimes it feels like the students write private messages to avoid spamming others. Sometimes it feels like they write privately because they only want me to know what they say. I cannot always know if I am allowed or should announce what is written in private messages to the whole group. The boundary between private and public is vague in some cases. Each time, I must consider how to interpret and handle the situation.” (Sofia’s logbook March 4th, 2021)

Fluid hybrid tutoring made us consider the communication patterns in the digital workshops (Haraway, 2016). Thinking-with hybridity and Didaktik suggested that course aims, materials and digital collaborative methods flowed through one another and created a new hybrid compound sensitive to student’s in-the-moment questions and the teacher’s knowledge about the content, i.e., academic writing (Einat and Gil, 2022; Keiding, 2013): the Padlet bulletin board, Zoom chats and whiteboard shaped in-the-moment tutoring opportunities. Nevertheless, fluid hybrid tutoring with humans and more-than-humans created new interferences. For example, with the help of Padlet, the tutor created time to prepare for the discussions in Zoom. Fluid hybrid tutoring dissolved boundaries between body and mind, human and machine, suggesting ontological states of becoming embedded *in-between* devices, human lived experiences, digital technologies, and systems

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(Haraway, 2016). The cyborg/tutor became embedded in the digital communication patterns that created new socio-material relations. Ethical considerations related to the social realities of the students emerged as the boundaries between private and public communication patterns became fluid.

Fragmented hybrid tutoring in-between digital systems, materialities, human embodied experiences

Fragmented hybrid tutoring pointed to complex human and more-than-human relations and positive and negative effects. Human and more-than-human interferences during the three-hour digital workshops created positive and negative embodied effects (lack of focus, inspiration, tiredness). The socio-material relations required the tutor to engage socially and materially for three hours, which usually left her feeling inspired and motivated but sometimes also tired and emotionally drained afterwards. The chat interface in Zoom created interferences as the tutor struggled to keep the focus while overviewing the public chat and many private chats at once (cf. *Relational hybrid tutoring*). Adding to the issue was that chat messages produced no sound in Zoom, making it harder for the tutor to notice new chat messages.

“During Wednesday’s workshop, the students used the chat. I see a limitation with the program because my Zoom doesn’t have sound notifications. If I’m in a different window, I may not notice messages from students. When I realized this, I told students to tell me orally if it takes long for me to answer. I don’t have the same focus in the digital space as in a physical space because I can’t hear someone talking to me. I must see it.” (Sofia’s logbook, June 3rd, 2020)

Digital technologies (Bluetooth, microphones, headphones), systems (Zoom, Moodle), and human mistakes also hindered the tutoring practice. During a recorded course introduction in Zoom, the tutor’s earbuds did not connect to Bluetooth, so she put them away, switched to the computer’s speakers and microphone, and continued the introduction. Mid-introduction, she realized that her audio was still connected to her earbuds. She did not hear the students telling her they did not see when she switched between sharing the PowerPoint presentation and Moodle. After realizing her mistake, she communicated them with the students and was able to see the comical aspects of the situation. These interferences suggest intimate yet fragmented human and more-than-human relations in digital tutoring.

“When the writing workshop started, I could not get my earbuds to work when I tried to connect them to Bluetooth. So, I put them in their folder and used the laptop’s speakers. I started talking, and we began the introduction to the course that was being recorded. I kept talking, and then, when switching between PowerPoint and Moodle, I wondered if the students saw Moodle or if I only shared my PowerPoint. I asked them to tell me what they saw. There was no sound, and I could not see anyone talking (I only saw pictures of the four students shown in Zoom during presentation mode). Then I realised the sound was coming from my earbuds, so I turned off Bluetooth and heard the students saying they could not see anything [on Moodle]. And I could see that the chat was full. I explained what had happened to them and apologised. It was funny to make a mistake like this, but it was more funny than embarrassing.” (Sofia’s logbook, May 31st, 2021)

Thinking-with hybridity challenged us to consider the complexities of combining different digital systems (Moodle, Zoom) and technologies (Bluetooth, headphones, microphones) and materials (PowerPoint) in hybrid teaching (Nørgård and Hilli, 2022). As devices, systems, and humans try to

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connect, they may lead to fragmented hybrid tutoring where the tutor needs to focus on solving technical issues while at the same time trying to teach. Didaktik made us consider the tutor's professional attitude and emotions when teaching between different materialities (Jank and Meyer, 2006). Digital tutoring can be emotionally demanding as tutors and students simultaneously move in-between digital systems, technologies, and materials when connecting. The cyborg metaphor transformed the digitally connected tutor into a new hybrid existence in-between course materialities, digital systems, and human embodied experiences. In the cyborg's fragmented state, it is "needy for connection" (Haraway, 2016, p. 9). Fragmented socio-material practices suggest that humans, digital technologies, and systems try and sometimes fail to connect.

Concluding discussion

This study put posthuman thinking to work when investigating socio-material relations in digital academic writing workshops (Jackson and Mazzei, 2017; Mazzei, 2021). Thinking-with theories created lively conversations *in-between* theories (Didaktik), concepts (hybridity), the cyborg metaphor, institutional politics in higher education, research materials (logbooks), and the researchers (Charlotta and Sofia). The posthuman approach invited course materialities alongside humans into the conversations about digital teaching, helping to identify spatial, political, and human interferences that shaped the digital tutoring practices. The approach may inspire new hybrid course designs sensitive to different socio-material and political relations in higher education.

During the posthuman inquiry, a relational, fluid, and fragmented hybrid Didaktik emerged, suggesting intimate socio-material and political relations interfered with digital academic writing tutoring (Gourlay, 2022b; Snaza and Weaver, 2015; Taylor, 2016). In hybrid tutoring, devices, systems, instructional matters, and humans become embedded in relations that are not static or easy to structure. Hybrid tutoring suggests that online teaching creates fluid and fragmented movements in-between digital devices, systems, and humans, which are open to technical failures and human mistakes.

Institutional politics relate to supranational goals of credit transfers (ECTS) and employability by setting similar standards for bachelor's and master's degrees in all EU countries (Magnússon and Rytzler, 2022). Here, study credits materialised in new socio-material relations of digitally controlling and encouraging student attendance in the workshops. Fluid course materialities transformed with digital technologies, systems, and students' different needs of course structure and communication. In these instances, the socio-material relations transformed into sensitive tutoring practices respecting students' need for privacy and writing time (Haraway, 2016). However, tutoring in-between devices, digital technologies, and systems also produced fragmented embodied experiences (inspiration, tiredness, lack of focus), new ethical considerations (respect for student's privacy and individual needs) and time-consuming control practices.

The study built on a participatory action research project forced to move on-campus workshops online due to the COVID-19 pandemic. Although the hybrid tutoring practice appreciated and permeated structured and scaffolded approaches to supporting thesis writing (cf. Guerin and Aitchinson, 2021), new hybrid tutoring practices welcomed students to participate in, contribute to, and disrupt the digital workshops. Accordingly, the hybrid writing workshops were not a direct translation of the face-to-face tutoring on-campus. We submit that such translation is neither

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desirable nor possible due to how a hybrid Didaktik produces and becomes produced by various socio-material forces, which are not the same as in tutoring on-campus.

We propose a posthuman *hybrid Didaktik* as a productive educational framework for teachers and instructors in higher education, addressing socio-material and political forces at work. Relational, fluid, and fragmented teaching dance around and change with the socio-material relations, much like the cyborg transforms with and resists (hurtful) digital systems and politics by creating new social practices (Haraway, 2016). The cyborg's fragmented and diffracted ontological state suggests that higher education must keep transforming and resisting as policies, teachers, students, digital systems, and technologies change.

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