BETWEEN INSTRUCTION AND PRACTICE: HOW STUDENTS UNDERSTAND AND NEGOTIATE WRITING AND AI IN TEACHER EDUCATION

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Abstract

The rapid development of generative artificial intelligence (GenAI) is reshaping assumptions about writing, learning and independence in higher education. This study examines how writing, independence, and GenAI use are negotiated within teacher education, foregrounding AI literacy as part of student teachers' professional becoming. Drawing on classroom observations and an analysis of task instructions and assessment criteria, the study suggests a partial misalignment between certain institutional expectations and course-level pedagogical practice. Although institutional policy emphasizes that AI use should be explicitly addressed at the course level, AI is in general and with only few exceptions absent from task instructions and assessment criteria in a course assessed through a supervised written examination. This "organizational silence" implicitly sustains pre-AI assumptions about authorship and independent performance, while transferring responsibility for interpretation to students.

The findings show that student teachers nevertheless engage pragmatically with GenAI in their everyday writing practices, negotiating uncertainty not merely as academic writers but as future professionals. Independence is experienced not as the absence of support, but as a relational and reflective practice involving professional judgment and ethical responsibility in AI use. From this perspective, AI literacy emerges as an integral dimension of professional becoming in teacher education. The study argues that teacher education programs need pedagogically grounded approaches that move beyond silence toward explicit engagement with AI, supporting students in developing professional judgment for future educational practice.

Keywords: AI, academic writing, higher education, teacher education.

1 INTRODUCTION

The rapid expansion of generative artificial intelligence has intensified debates about writing, authorship and independence in higher education [1,2]. Within teacher education, these developments give rise to particularly complex questions, as students are simultaneously positioned as academic writers and as future professionals expected to exercise responsible pedagogical judgment regarding the use of digital technologies in school contexts [3].

This study is grounded in an academic literacies' perspective, in which writing is conceptualized as a socially and institutionally situated practice shaped by norms, values, and assessment regimes [4,5]. This perspective is complemented by insights from Science and Technology Studies (STS), where generative AI is understood as a sociotechnical actor that actively participates in reconfiguring writing practices, notions of autonomy, and pedagogical relations [6, 7]. Against this theoretical backdrop, AI literacy is employed as an analytic lens to examine how student teachers interpret, negotiate, and critically engage with AI technologies as part of their ongoing professional becoming.

The emergence of GenAI has fundamentally altered the conditions under which academic writing takes place. Tools such as large language models challenge established assumptions about authorship, originality, and cognitive effort, particularly in educational contexts where writing is closely tied to a discipline's skill development, assessment and individual achievement [8, 9]. In teacher education, these shifts are especially consequential, as student teachers are not only assessed as learners but are also being formed as future professionals expected to model ethically and pedagogically responsible practices in relation to technology use [3].

While GenAI has been framed both as a threat to academic integrity and as a potential resource for learning [1, 2], comparatively little attention has been paid to how institutional framings of writing and independence interact with students' emerging AI literacy. In many higher education contexts, expectations of writing remain anchored in pre-AI ideals of individual authorship and cognitive autonomy, even as students increasingly encounter GenAI as an integral component of their everyday writing

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practices [10]. This misalignment gives rise to pedagogical tensions that become particularly salient in assessment situations, where notions of independence are formalized and operationalized, yet rarely or only reluctantly renegotiated in the light of rapid uptake of AI-mediated writing practices.

Against this backdrop, the study employs AI literacy as an analytic lens to examine how student teachers negotiate writing and independence in relation to GenAI. In teacher education, academic writing is closely tied to ideals of originality, responsibility, and authorial voice [11], yet the introduction of generative AI increasingly blurs the distinction between independent and assisted writing. This ambiguity raises questions about how independence should be understood in AI-mediated educational contexts, particularly considering teacher education's dual mandate to assess academic performance while preparing future teachers for responsible engagement with emerging technologies.

1.1 Aim and research question

The aim of this study is to examine how writing, independence, and AI literacy are discursively constructed and negotiated within English as a subject in teacher education. Specifically, the study investigates how student teachers make sense of writing and GenAI use, and how institutional expectations regarding writing and independence are articulated through instructions and assessment criteria. The study addresses the following research question:

> *How is writing constructed and understood in relation to AI literacy and independence by student teachers, and what forms of writing actions, cognitive processes, and ideals of independence are expressed in the teacher's task instructions and assessment criteria?*

The study does not seek to examine students' actual writing practices or cognitive processes during text production. Rather, writing actions and cognitive processes are approached analytically as discursive representations, as they are made relevant in interaction and institutional texts.

1.2 Theoretical framework

This study takes an interdisciplinary approach, combining academic literacies with science and technology studies (STS). An academic literacies perspective (cf. [5]) conceptualizes writing not as a neutral or purely technical skill, but as a socially and institutionally situated practice shaped by disciplinary norms, power relations, and implicit expectations. From this perspective, writing tasks and assessment criteria are understood as sites where particular values about knowledge, learning, and authorship are made visible and normalized. An academic literacies approach is particularly relevant for examining how independence is constructed in educational texts and practices. Rather than treating independence as an individual trait, this perspective allows for an analysis of how independence is produced through institutional discourse and pedagogical design.

Academic literacies are closely linked to AI literacy, a concept that here is understood as a situated and evolving competence that includes ethical reflection, critical awareness, and contextual judgment. In the context of teacher education, AI literacy is closely linked to professional becoming. How student teachers make sense of GenAI in their own literacy practices has implications for how they may later approach GenAI as educators responsible for guiding pupils' learning and technology use.

To complement the academic literacies framework, the study draws on Science and Technology Studies (STS) to conceptualize GenAI as a sociotechnical actor. From an STS perspective, technologies are not passive tools but actively take part in shaping practices, meanings, and relationships [12]. Applying this lens to GenAI allows the analysis to move beyond questions of use or misuse and instead examine how GenAI reshapes assumptions about authorship, cognition, and responsibility. In this study, GenAI is understood as an actor that intervenes in literacy practices and destabilizes established boundaries between human and technological agency.

Together, academic literacies, STS, and AI literacy provide a conceptual framework for analysing writing as a sociotechnical and institutional practice. This synthesis enables an examination of how ideals of independence are articulated in educational texts, enacted in classroom interaction, and negotiated by students in relation to emerging AI technologies.

2 METHODOLOGY

The study adopts a qualitative, exploratory research design, drawing on classroom observation as its primary method of data collection. The empirical material was collected in 2025 during two lectures in an

English course, including 45 students admitted to a teacher education program at a Swedish university. The choice assumed that an English course constitutes a particularly relevant context, as generative AI technologies operate through language and directly intervene in practices of writing, reading, and meaning-making that constitute the core of language education. The sessions observed was designed to explicitly address questions of academic writing and independence in relation to writing, as well as issues related to AI: s role in language education within the Swedish school system. *All informants have been given pseudonyms to protect their identities.*

During the observed session, students engaged in a structured sequence of activities designed to prompt reflection and discussion on AI in relation to language learning and teacher professionalism. The session began with a small-group warm-up exercise (groups of two to three students), in which students discussed assigned readings prepared prior to the seminar. Following this, the groups collaboratively responded in writing to a small number of open-ended questions related to the readings, with a particular focus on AI and its implications for teaching and learning. All written work and discussions were conducted in English. The observations were conducted with sensitivity to the inherent power relations in educational settings, so all material is treated at an aggregated level.

The activities followed a read–reflect–discuss structure and were complemented by opportunities for students to explore different generative AI tools, such as Copilot and ChatGPT, as well as other AI-based resources of their own choosing. In the latter part of the session, students were asked to draw on these explorations to develop a preliminary learning activity that incorporated or critically addressed the use of AI in language education. This design allowed for an exploration of how writing and AI are discussed, regulated, and interpreted in a concrete educational setting, providing insight into how students negotiate the role of AI in writing and position themselves in relation to expectations of independence. The analysis identified recurring themes and interactional patterns the discussions, with particular attention to how AI was framed in relation to language learning, teaching practices, and teacher professionalism. Specific attention was given to moments in which writing or AI was explicitly addressed, where students expressed uncertainty, and where the use of AI was negotiated in relation to writing practices and notions of independence.

The classroom observation was complemented by a textual analysis of written task instructions and assessment criteria associated with the course. These documents were treated as institutional artifacts through which normative expectations regarding writing, cognition, and autonomy are communicated.

3 FINDINGS

Addressing the study's aim to examine how student teachers make sense of GenAI in relation to writing, independence, and authorship, the results presented below capture how these themes are articulated, questioned, and negotiated in educational practice. The empirical material highlights interactions between student perspectives, institutional framings, and professional orientations.

3.1 Students' thoughts about AI, independence, and authorship

The analysis shows that student teachers expressed considerable uncertainty regarding the role of GenAI in academic writing. Questions about what forms of GenAI use were permissible and how independence should be interpreted recurred throughout the observed session. This uncertainty positioned students in an ongoing negotiation between institutional expectations and their awareness of GenAI as an available writing resource.

In the second session one student commented *"*Invite AI to our graduation ceremony*"* – a comment that cheerfully broke the tension and with precision revealed the present situation. It captures several aspects at once, for instance how they view themselves as users of a technology that is currently reconfiguring their sense of independence. Thus, their sense of self-sufficiency now includes knowing how and when to collaborate with GenAI tools. This challenges the traditional understanding of independence as working entirely alone.

On the topic of how students reported use of GenAI, we asked students during the sessions about how they were using GenAI today. One student commented that a common use was to quickly check and ask the AI the "silly" questions, to not bother the other students or the teacher with trivialities. Another student commented that one use would be to "understand what happened" during a lecture. Typically, a teacher would explain something and then the student would reach for AI to explain something in a different way. Continuing this theme, a third student commented that "I usually send a snap" which we

interpreted as sending an image and getting back textual feedback on that image, perhaps a photo taken from an ongoing lecture presentation.

Students mentioned various GenAI tools, most prominently ChatGPT, which they had simply nicknamed 'Chat.'. This casual terminology suggests a fair amount of familiarity. Students primarily used these tools as search alternatives, valuing the direct answers that GenAI provide over traditional search engines. Additional, uses included generating study materials such as flashcards and seeking advice on health-related issues, clarifying written instructions, preparing a structure for written turn ins, grammar- and style-checking and reviewing text productions.

Regarding observed expressions of worries we noted several critical concerns raised by the students. As teacher-students, they raised questions about their future role as primary school teachers, and what concerns they might have. One teacher student commented that “the (their future) students will not be able to take initiative”, in a way projecting and predicting a loss of agency in forthcoming generations. Another student in the first session commented that it will potentially “sever the delicate bond between teacher and student”, further arguing that overuse might lead to less social interaction - an aspect that caused general and in agreement expressions of concerns in the group of students discussing effects of AI-usage. Continuing on that theme, two students saw the perceived risk that “some kids (may) prefer to talk to an AI (a sense of being understood, a social companion)...”, thus they were not only concerned about the relationships and social dimensions in a classroom setting, but equally questioned their own (future) authority as teachers and their possible role as knowledge providers then.

Moreover, students talked about that writing emphasized cognitive effort, understanding, and personal responsibility. Writing was described as a process that should be grounded in and reflect individual thinking, even as students acknowledged that GenAI tools could support aspects of formulation and structure. This ambivalence highlights a tension between process-oriented views of writing and restrictive interpretations of independence. Another, related phenomenon was described and differentiated as AI-assisted writing where one`s own effort is either augmented or mediated, as opposed to using the AI-functions to automate and outsource the task. While the former was said to be beneficial in many different forms, the latter was being described in terms of “quick fix when time-pressured", “cheating oneself as no own learning occurs”, and – on a long-term perspective – potentially even “masking for a teacher that the skill and know-how level of pupils is actually less developed as measured by the examined tun-ins”.

3.2 Institutional framings of independence and authorship

What appears from the course guidelines and other steering documents regarding writing, is a certain ambivalence, alongside a general openness to digital aspects of writing, albeit not specifically to GenAI. On several occasions, both the writing instructions and the study guide emphasize that students should use “your own English”, which can be linked to the aim of fostering independence and originality. At the same time, instructions also state that students are expected to “check documents for grammatical accuracy”. The verbatim wording “check” suggests that glossaries or digital tools may be used, which implies that “your own English” is not necessarily equated with grammatical correctness. This creates a degree of ambiguity, particularly when considered in relation to the learning objectives, which state that students should be able to “express their ideas in English writing and speech accurately and appropriately for different recipients and contexts”.

Digital technology is addressed at several levels in the course documentation. The learning objectives specify that students should “employ digital tools critically in the context of the subject English”. Similarly, the study manual emphasizes students’ responsibility for their own learning and encourages them “to make effective use of all available resources—human, printed, and electronic—to develop their skills and knowledge”. Digital tools and electronic resources are thus clearly presented as accepted and expected resources. However, there is no explicit guidance on how students are expected to relate to GenAI, nor is it clarified whether GenAI is included among electronic resources. The only concrete reference to digital technology in the course documentation concern practical matters, such as using a laptop or tablet for notetaking, alongside traditional pen-and-paper methods.

From an analysis of the course information a couple of observations can be made: The descriptions do address and represent the institutional framing, put forward requirements and aims for a development of both independent thinking and authorship in students` text production. While this is described in a logic and coherent way, the introduction of GenAI can be seen as an “interruption”, requiring further adaptations even in the course manuals and documents.

3.3 Student teachers – between studenthood and becoming professionals

A theme that different participants orbited around in the shared discussions can be described as them currently being student (teachers) but already trying to put themselves in the role as future teachers, and then in turn, meeting pupils themselves. GenAI as a digital transformation was seen from multiple perspectives related to this "in-between positioning". This came in the form of students highlighting the AI-ability to aid (e.g. in a writing process), but at the same time cautioning that this machine assistance in turn might hinder a learners' abilities to develop these skills themselves and master them through repeated learning, critic of work produced, and improvements.

Another example is the empathy towards the current teachers' dilemma, being generally described as underfunded and time-pressed, thus potentially benefitting from using AI-tools in preparing, e.g., written materials for a lesson to give. GenAI in such an assistive function was aptly described as a possible "teacher behind a teacher".

A last example highlighting this duality of current in comparison to their future role regarding AI-systems' usage was described and discussed as a teacher's need for AI-competencies to be able to make not only informed decision of what AI-systems and features to use aligned with one's teaching objectives, but at the same time "act as an AI-guide for the students/pupils" attempting to learn responsible AI-usage in their discipline. By considering and expressing the need for informed guidance based on know-how of GenAI systems for teachers, the students' current and own need to inform and experiment with such systems to fill such a guiding-role in the future was thus articulated.

4 DISCUSSION

Across the observed discussions, students navigated competing discourses: on the one hand, expectations of independence, authorship, and academic integrity; on the other, the pragmatic and increasingly normalized use of AI tools for language support, ideation, and revision. The discussion below elaborates these tensions by reconsidering the concept of independence, situating AI literacy within professional becoming, and addressing institutional responsibility in pedagogical design.

4.1 Reconsidering Independence in AI-Mediated Writing

A central tension concerns how independence in academic writing is conceptualized. Traditional academic norms tend to equate independence with the absence of external support [11], positioning technological assistance as a potential threat to authorship and individual cognition. However, the findings suggest that such a framing is increasingly becoming misaligned with contemporary writing practices, where GenAI tools are readily available and often embedded in routine language work. This opens a different way of understanding independence, where independence is instead about positioning and taking responsibility for [11]. Such a view is also more in line with academic literacies, in which positioning, norms and context are important considerations.

Students' discussions indicate that independence is not experienced as a binary condition – either autonomous or assisted, augmented or mediated, but rather as a relational and reflective practice. Independence, in this sense, involves making informed judgments about when, why, and how to engage with GenAI tools, as well as taking responsibility for the resulting text. From this perspective, independence is not diminished by the presence of AI but reconfigured through critical engagement with technological mediation.

4.2 Social and Relational Dimensions of AI-Mediated Writing

In addition to questions of independence, the findings highlight social and relational dimensions of students' engagement with AI. Several students described using AI tools as a private and low-risk space to pose "simple" or potentially embarrassing questions – questions they were reluctant to raise in classroom interaction where peers and teachers were present. In this respect, AI functioned as an alternative interactional resource, enabling inquiry while reducing the social exposure associated with asking questions in public educational settings.

At the same time, students' practices of naming GenAI tools and developing shared abbreviations indicate a form of social appropriation of the technology. These practices suggest that AI use is not exclusively individual or isolating but can become embedded in peer cultures through shared language and collective meaning-making. GenAI thus appears to operate both as a substitute for and a supplement to social interaction, depending on how it is taken up in practice.

However, the reliance on GenAI as an interactional partner also raises concerns regarding the relational foundations of teaching and learning. When students increasingly turn to GenAI for clarification and feedback, there is a risk that the sensitive relational bond between teacher and student may be weakened. This bond – grounded in dialogue, trust, and pedagogical responsiveness – is particularly significant in teacher education, where students' experiences of relational teaching may shape their future professional practices as teachers. From this perspective, GenAI does not simply mediate writing practices but also reconfigures patterns of interaction and attachment within educational settings.

4.3 AI Literacy as Professional Becoming

Students' negotiations around the introduction to and use of GenAI can be understood not merely as technical problem-solving but as part of their professional development within teacher education. As future teachers, students are engaged in a form of dual learning in which they simultaneously develop academic writing practices and orient themselves toward the didactic responsibilities inherent in the teaching profession, including the need to make well-grounded decisions about GenAI in school-based instructional contexts.

The hesitation, uncertainty, and cautious experimentation observed in the material should therefore not be interpreted as indicators of insufficient knowledge. Rather, they can be understood as characteristic of an ongoing process of professional socialization and experiential learning [13]. These expressions point to an emerging form of GenAI literacy shaped at the intersection of institutional regulations, professional-ethical considerations, and technological possibilities. Students were not only negotiating what was permitted, but also what could be considered pedagogically justifiable, professionally responsible, and consistent with their developing understanding of the teaching profession. From this perspective, AI literacy appears as an integral dimension of professional becoming. It entails the ability to navigate uncertainty, exercise professional judgment, and critically reflect on the role of technology in teaching and learning, i.e., capacities that are central to the teaching profession, but difficult to cultivate in educational environments where GenAI may be addressed through an uncalled for prohibitive stance or where necessary adaptations needs to be discussed to avoid an organizational silence [14].

5 CONCLUSIONS AND IMPLICATIONS

This study contributes to research on AI-mediated writing in higher education by examining how student teachers negotiate writing, independence, and AI literacy within teacher education. The findings align with previous research identifying tensions between academic integrity frameworks and students' experiences of GenAI use, while extending this work by highlighting the role of professional formation. Based on classroom observation and textual analysis, the study underscores the sociotechnical nature of writing in AI-saturated educational contexts.

The findings indicate a need for more explicit and pedagogically grounded approaches to AI in teacher education. Rather than framing AI primarily as a threat, programs should support the development of responsible and critical AI literacy aligned with professional values. Given the limited empirical scope of the study, future research should examine AI-mediated writing across multiple contexts and over time to further explore how institutional practices shape students' engagement with GenAI.

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