Triggering Reflection Through Ecotones: The Role of GenAI Vignettes

Camilla Finsterbach Kaup, Jesper Dam Larsen, Line Marie Mosbæk Thordahl & Rikke Sandberg Kjær
University College of Northen Denmark
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Abstract

In the post-digital educational landscape, it is increasingly essential to understand how students develop professional judgements about technology. This study explores how students from Social Education, Health Administration and Coordination, and Digital Concept Development programs reflect on technology-mediated dilemmas using a GenAI vignette. The vignette presented an ethically complex scenario designed to prompt critical reflection. A total of 95 students participated in collaborative writing reflection tasks, and selected students from each program participated in focus group interviews. Drawing on Dewey's and Rodgers' theories of reflection, the analysis shows that the students' responses were shaped by their professional orientation: social education students emphasized relational ethics, health administration students focused on regulation and implementation, and digital design students approached the scenario through usability and innovation. The findings suggest that GenAI vignettes can foster critical reflection on technology's role in professional practice, supporting the development of ethically aware, reflective professionals. This method shows promise for preparing students to navigate digitally mediated work environments.

Keywords
Ecotones, Post-Digital, GenAI, Reflective Practice Learning, RPL, Deliberate Professionals

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Introduction

Digital transformation has fundamentally reshaped professional practices across sectors. Technology no longer serves as a mere supplement to human interaction; it increasingly acts as a mediating and transformative force in decision-making processes and everyday professional actions. This development raises critical questions about how students prepare for professional practices where technology is an integrated part of both professional judgement and action. Therefore, technological literacy has emerged as a key competence that goes beyond technical know-how to include critical reflection, ethical judgement, and an understanding of how technology shapes individuals, societies, and professional fields. According to Wallace (2011), technological literacy entails the ability to use, manage, assess, and understand technology, as well as to reflect on its implications for individuals, society, and the environment. This critical, multidimensional approach to technology is essential for navigating the increasing complexity of technological integration and for preparing students and professionals to make informed and reflective decisions in practice.

Reflective practice learning (RPL) plays a central role in fostering technological literacy. As Horn et al. (2020) argue, reflective practice involves an ongoing dialogue between action and reflection, where professionals continuously engage with and learn from complex, often unpredictable situations. Reflection enables students to identify both the opportunities and limitations of technologies, allowing them to make ethically informed professional decisions. However, several studies have shown that the presence of reflective activities in curricula does not necessarily lead to genuine or meaningful reflection (Røise, 2024). When tasks such as reflective writing, portfolios, or structured feedback are mandatory, students may approach them with an instrumental mindset. In such cases, reflection becomes a performative exercise focused on fulfilling assessment criteria, rather than an opportunity for deep learning and critical thinking (Brown et al., 2013; de la Croix & Veen, 2018). This is a challenge even for students who are engaged in fieldwork or internships, as practical experience alone does not guarantee that reflection will occur or lead to professional insight (Røise, 2024).

Research suggests that authentic reflection often requires an initiating experience, often referred to as a trigger – typically an emotionally en-

gaging or ethically complex situation that disrupts routine expectations and stimulates critical inquiry (Bagheri et al., 2019). Although real-life practice can offer these situations, they are not always recognized as reflective opportunities. For this reason, designed interventions may be needed to create shared and intentional spaces for reflection. Simulated scenarios, such as vignettes, can replicate or amplify the complexity and ambiguity of real-world dilemmas, making ethical and professional tensions more visible and discussable (Schuler, 2021). In educational settings where academic work complements practical training, such triggers can strengthen the connection between lived experience and reflective engagement. They offer structured entry points for students to explore their own judgement, consider alternative perspectives, and discuss the implications of professional decision-making. Moreover, research has also highlighted the importance of a conducive environment – one that allows autonomy, encourages interaction, and supports students in understanding the relevance of reflective practice (Marshall et al., 2021; Butani et al., 2017).

Professional judgement, as conceptualized by Trede and Jackson (2021), further highlights the role of reflection in professional life. They introduce the concept of the deliberate professional – someone who purposefully integrates reflection with ethical reasoning to navigate professional complexity. From this perspective, reflection is not only an individual cognitive act but also a situated practice that bridges values, judgement, and action. When linked to technological literacy, this form of reflection supports professionals in making balanced decisions in digitally mediated environments. The aim of this study is to investigate how students' professional judgement is influenced and shaped through reflective engagement with digital technology. More specifically, we explore how GenAI vignettes can act as reflection triggers that support authentic reflection across different professional education programs. To frame this investigation, we now turn to the theoretical foundations of reflection, ecotones, and professional judgement.

Reflection as a Process for Developing Professional Judgement in Technological Ecotones

Although previous research has explored how professional judgement is shaped in the intersection of technology and practice, less attention has been paid to the reflective processes that enable this judgement to

emerge. We address this gap by focusing on how reflection, as conceptualized by Dewey (1963, 2005), enables students to develop professional judgement in technological contexts. According to Dewey, reflection is a systematic and experiential process that is triggered by problematic situations – situations where existing routines are disrupted and new responses must be explored. Reflection thus becomes a pragmatic process of inquiry, allowing students to transform complex encounters with technology into professional learning and judgement. To actively trigger reflection on technology and professional judgement, we used a GenAI vignette, where students encounter a scenario blending technological, ethical, and professional dilemmas. This type of reflection trigger is supported by recent research emphasizing the importance of emotionally engaging and ethically challenging situations for promoting authentic reflection in higher education (López-Cuello, 2024). By placing students in a simulated but realistic professional dilemma, the vignette facilitates reflection on technology's role in professional judgement.

Thus, this article explores how students reflect on technology-mediated professional dilemmas and how these reflections contribute to the development of professional judgement. Our approach is based on the understanding that reflection is not merely a personal process but rather a socially and professionally situated activity that is essential for navigating the complex spaces where technology, ethics, and professional practice intersect. We pose the following research question: *How is students' professional judgement influenced and shaped through reflective engagement with digital technology?*

This article draws on both empirical and theoretical perspectives to examine how students from design, healthcare, and social education programs experience and reflect on technology within their education, as well as how these reflections influence their ability to make informed and ethically grounded decisions in professional practice. Through this analysis, we aim to contribute new insights into the relationship between technological literacy, reflection, and professional judgement and to shed light on how reflection can be purposefully facilitated in professional education using technology-mediated reflection triggers such as GenAI vignettes.

In the following section, we present the theoretical framework for this study, focusing on the intersection of reflection, ecotones, and professional judgement.

Theory

In contemporary professional education, students are increasingly required to navigate hybrid spaces where the digital and the analogue are deeply intertwined. These environments cannot be understood through traditional dichotomies such as digital versus analogue or virtual versus actual. Instead, they represent complex, interwoven networks where material, digital, social, and political dimensions coexist and interact.

To capture this complexity, Ryberg et al. (2021) introduce the concept of ecotones. This was originally a term from ecology referring to transitional zones between two ecosystems, such as the area between a forest and a grassland. In the context of education, ecotones describe zones where digital and analogue elements merge, generating overlapping characteristics and new forms of interaction, interpretation, and identity that are not present in either domain alone. Such post-digital ecotones are not limited to technological artifacts. They also encompass cultural and relational tensions, including the contradictions and innovations that arise when established professional practices are confronted with new technological possibilities. These tensions are not inherently negative; rather, they represent fertile ground for critical reflection, creativity, and learning.

In this study, the GenAI vignette operates as an ecotone, inviting students into a professional dilemma shaped by digital mediation and ethical ambiguity. To succeed in ecotone spaces, students must develop more than just technical skills. They must become deliberate professionals who reflect critically, make ethical judgements, and act responsibly in complex, uncertain environments (Trede & Jackson, 2021). The concept of agency is central to the development of such professional capacity, which Trede and Jackson (2021) describe as the ability to act intentionally, take responsibility, and make ethical and context-sensitive decisions within complex professional environments. Instead of being a fixed aspect of the person, this agency is developed through reflective engagement and social participation. Deliberate professionals are characterized by their capacity to integrate personal values with professional responsibilities: they do not merely follow procedures but engage thoughtfully with their situations (Trede & Jackson, 2021). This reflexive stance is essential for navigating the tensions and opportunities inherent in post-digital professional landscapes.

Professional Judgement Through Reflection

To understand how such reflective and professional judgement can be cultivated, this study draws on the work of Dewey and Rodgers. Dewey (2005) regarded learning and experience as inseparable and simultaneously considered reflection as a central process in transforming experiences into meaningful knowledge. According to Dewey (1933), experience is not merely a passive process but rather an active one, where the individual engages with their surroundings, encounters challenges, and processes them through reflection; at the same time, he did not equate activity with the formation of experience. Dewey (1963) also described reflection as a systematic, disciplined form of thinking that arises in response to a problematic situation. He introduced the concept of reflective thinking, which involves a conscious and analytical approach to understanding encountered experiences and deriving learning from them.

Rodgers (2002) expands on Dewey's work by identifying four core characteristics of reflection that are especially relevant in educational settings. First, reflection is a meaning-making process through which learners connect prior knowledge with new experiences and anticipate future actions. Second, it is systematic and rigorous, involving analysis, questioning, and drawing conclusions. Third, it is socially situated and shaped through dialogue and interaction with others. Fourth, it is a dispositional orientation marked by openness, curiosity, and a commitment to growth. Rodgers (2002) also outlines six dynamic phases of reflection: experiencing a situation, interpreting it instinctively, identifying the underlying problem, generating explanations, elaborating the explanations into coherent hypotheses, and testing the hypotheses through action. This model explains how students progress from surface-level reactions towards more profound, ethically grounded judgements.

These theoretical perspectives offer a complementary framework for understanding how students develop professional judgement through reflective engagement with technology. Dewey's and Rodgers' perspectives frame reflection as a systematic process of inquiry, while the concept of ecotones highlights the hybrid spaces where digital and analogue practices intersect. Trede and Jackson's notion of the deliberate professional adds a professional lens, showing how reflection supports ethical judgement and agency. In this study, the GenAI vignette serves as a reflection trigger that prompts students to examine their assumptions and decisions. We explore how such scenarios support judgement for-

mation in educational ecotones shaped by the interplay of technology, ethics, and professional practice. Building on this integrated framework, the following section outlines the case study design and methodological approach used to investigate students' reflections in practice.

Methods

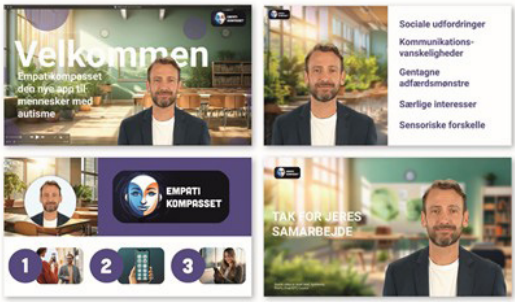
Case Study Design in a Post-Digital Context

This study applies a qualitative case study approach (Yin, 2009) to explore how students from three higher education programs – Social Education (SE), Health Administration and Coordination (SAC), and Digital Concept Development (D-CON) – develop professional judgement and technological literacy through reflective engagement with a GenAI vignette. The vignette was designed to trigger reflection on ethically complex, technology-mediated scenarios relevant to each professional field. The case study approach enables a detailed examination of how students engage with professional dilemmas in specific educational and disciplinary contexts. These three programs were selected for their differing engagements with digital technologies and their contrasting perspectives on care, regulation, and innovation. This variation offers a valuable foundation for analysing how professional judgement is interpreted and developed in diverse post-digital learning environments. The three programs were purposefully selected to represent different engagements with digital technology. Within each program, all students in the relevant semester were invited, ensuring broad participation rather than selective sampling.

GenAI Vignette

A GenAI vignette was central to the empirical design of the study. This vignette was presented as a 3-minute and 25-second video portraying a fictional, ethically challenging scenario. The scenario describes an organization developing an AI app to help autistic individuals interpret emotional expressions. The vignette was intentionally designed to trigger reflection on technological and relational issues, functioning as a learning stimulus and a medium for engaging students in post-digital thinking. In this way, the vignette created a reflective ecotone that encouraged students to consider the implications of technology in their future professional practice.

Figure 1: Image of the GenAI vignette



Data Collection

Data were collected through written group reflections and focus group interviews. A total of 95 students participated. First, students participated in group-based reflection tasks using questions tailored to their professional field. These reflections were written collaboratively, and students were encouraged to interpret the vignette through their disciplinary lens. Second, one focus group interview was conducted for each of the three programs. Students worked in groups of 3–5, adjusted to class size. Focus group participants were recruited voluntarily from these classes to capture a range of perspectives. Three to five students participated in each interview, which lasted 37–50 minutes. All participants provided informed consent, and ethical approval was obtained. The data were anonymized and stored securely in accordance with GDPR guidelines. The interviewer had no prior relationship with the participants and adopted a neutral, facilitative role to promote open discussion while minimizing potential bias.

The questions used in the interviews matched those used in the reflection tasks. The interviews were facilitated by a researcher who guided the discussion neutrally and ensured balanced participation (Creswell & Creswell, 2018). An overview of the data collection is shown in Table 1.

Table 1: Overview of Data Collection

Program	Date	Focus group interview	Reflection groups	Total students	Semester
Social Education	15.11.2024	3 students, 45 minutes	6 groups (3–4 students)	23	3rd
Digital Concept Development	16.09.2024	5 students, 50 minutes	4 groups (4 students)	21	5th
Health Administration	01.10.2024	4 students, 37 minutes	4 groups (4 students)	20	5th

Analytical Strategy

The analysis in this study is grounded in Dewey's reflection theory (2005). It is further operationalized through Rodgers' (2002) interpretation, which identifies the four core characteristics of reflection and the six iterative phases. This framework allows for a structured examination of how students engage reflectively with the AI-generated vignette and how their understanding of professional judgement in technology-rich environments evolves. Coding proceeded in three steps: open coding of all transcripts and reflections, alignment of codes with Rodgers' six phases, and comparison across the three programs. To ensure credibility, a second researcher independently coded a subset of the data, and discrepancies were discussed until consensus was reached.

The first analytical lens focuses on identifying evidence of meaning-making processes, where students connected prior knowledge, their own experiences, and future-oriented insights. This involved tracing how students interpreted the vignette in relation to their existing professional perspectives. It also involved tracing how new understandings emerged through group reflection and interview discussions.

The second lens focuses on the systematic and rigorous nature of reflection. We looked for moments in the data where students engaged in deliberate reasoning, raised critical questions, and evaluated assumptions. These segments were used to assess the depth and structure of their reflective thinking.

Third, we examined reflection as a social process, analysing how ideas were negotiated, challenged, or supported through peer interaction.

We paid attention to how social dynamics within group tasks and focus groups shaped the reflective dialogue.

Finally, we identified expressions of reflective dispositions or attitudes, such as curiosity, openness to learning, and a willingness to consider alternative viewpoints. These indicators helped us understand students' orientation toward reflection as a habit of mind and an ethical stance. To assess the depth of reflection, all data (written reflections and interview transcripts) were coded using Rodgers' six reflective phases (Table 2).

Table 2: Analytical Strategy with Examples

Rodgers' reflective phase	What we looked for	Illustrative example
1. Concrete experience	Initial reactions to the vignette as a professional dilemma; recognition of relevance to students' future roles	"According to the Data Protection Act, consent must be obtained every time photos are taken. One must be aware of where the photos are stored and who to contact in case of a security breach." (SAC student)
2. Spontaneous interpretation	Emotional responses, personal attitudes towards AI, digitalization, and human interaction	"No, because I was sitting there thinking that if someone has very little facial expression, then it's also difficult to scan a picture and figure out what they're actually thinking." (SAC student)
3. Problem identification	Statements clearly articulating ethical, legal, or relational dilemmas presented in the vignette	"I mean, does it actually benefit the patient, or are we really just making things harder – are we making it harder for them rather than better?" (SAC student)
4. Generation of explanations	Use of theory, prior knowledge, or professional experience to interpret or explain issues	"You can never be sure that the expression the app detects matches how the person really feels. Can it decode sarcasm?" (SE student)
5. Development of hypotheses	Extended reasoning, exploration of alternatives, or co-construction of reflective insights in group discussion	"...I also think it's easier physically. That is, if there is a social educator or someone to support. It's easier to adjust according to where they need help than an app that is locked." (SE student)

Rodgers' reflective phase	What we looked for	Illustrative example
6. Testing hypotheses	Concrete suggestions or critical re-framing of technology use in future scenarios; evidence of practical application or ethical positioning	"One can easily imagine that when something like this is being implemented, it will demand a lot of their resources – that they will have to start using this technology, and you don't really know whether they actually have the competencies to use it." (SAC student)

To enhance analytical credibility, a second researcher independently reviewed selected transcripts, and differences in interpretation were discussed to ensure consistency in coding. This approach facilitated a systematic examination of how reflection unfolds across different student groups and disciplines. It also examined how such reflection contributed to developing professional judgement in post-digital learning contexts. While this study does not follow students longitudinally, its design captures situated and immediate reflections that are central to its focus on technology-mediated reflective triggers.

Results

Social Education

A clear pattern emerges from students' reflections in the Social Education (SE) program. Using Rodgers' (2002) phases of reflection as an analytical lens, it is evident that these students engaged deeply in the vignette. A particular example of this is the use of relational ethics and resistance to technological mediation in ways that foreground relational ethics.

In the initial phases (from concrete experience to spontaneous interpretation), students expressed strong scepticism toward the app and, more broadly, toward digital technologies in relational contexts. Their responses often reflected discomfort with what they perceived as the dehumanizing effects of digitalization on interpersonal care, a domain they viewed as central to their professional identity. For example, one student said: "I can see the idea of helping someone with autism understand others' emotions. But I think, in general, I'm against where digitalization is heading and what it means. When everything happens on a screen... face-to-face interaction is different" (SE student A). This reaction aligns

with Dewey's understanding of reflection as triggered by the disruption of familiar routine. The dilemma presented in the vignette challenged students' values in a professional context. It triggered reflection grounded in their prior experiences. Indeed, students consistently emphasized the importance of authentic human connection and strongly opposed AI replacing relational care:

> *Interviewer: "You don't think an AI assistant is what they need?"*
> *Student: "No, they need real people." (SE student B)*

Students described the AI narrator in the vignette as unnatural and emotionally inadequate, raising doubts about its usefulness in supporting social understanding among autistic individuals. In the phases of problem identification and explanation generation, students discussed stigma-related concerns, awkward social situations, and questions of consent. One student noted: "If you're supposed to say, 'Hey, can I take a picture of you?'... that's going to be weird" (SE student A). In generating explanations, students explored the ethical implications of these situations, linking them to broader issues of human dignity, agency, and privacy. They critically examined potential violations of legal and ethical standards, such as data protection under the GDPR. This shift from instinctive reaction to structured, analytical reasoning reflects Dewey's concept of reflection as purposeful inquiry rooted in lived experience.

Several students proposed alternative uses for the app that align more closely with their professional values. For example, they suggested that the app could be a training tool in a collaborative setting where a social educator guides interpretation and reflection. This suggestion demonstrates an effort to reimagine technology to enhance, rather than replace, relational pedagogy. Their reflections continued into more complex ethical terrain, as they questioned whether an app could meaningfully interpret emotional nuance: "You can never be sure that the expression the app detects matches how the person really feels. Can it decode sarcasm?" (Reflection Group 1). These reflections unfold within an ecotone, with SE students positioning themselves as protectors of relational ethics in this space where digital tools and analogue values intersect and generate tension. They expressed concern that technological solutions might oversimplify autistic needs. Many emphasized the importance of supporting autonomy and warned against dependency on digital aids.

Across both interviews and written reflections, SE students demonstrated a reflective posture consistent with Trede and Jackson's (2021) concept of the deliberate professional. Their reflections revealed an ability to integrate ethical reasoning, professional responsibility, and personal values to form context-sensitive judgements. Rather than treating technology as a neutral tool, they critically examined its implications and placed its potential use within a broader framework of pedagogical care. The SE students thus articulated a relationally grounded, ethically conscious approach to professional judgement. Strong professional identities and commitment to human-centred practice clearly shaped their reflections, exemplifying how critical, situated technological literacy is essential for navigating post-digital professional environments.

Health Administration and Coordination

Students from the Health Administration and Coordination (SAC) program engaged with the vignette by drawing on their knowledge of organizational procedures, legal frameworks, and systems-level thinking. Their reflections demonstrate how professional judgement develops by considering ethical and administrative complexities.

In the initial phases of reflection (concrete experience and spontaneous interpretation), students focused on data protection, consent, and compliance. The fictional scenario was treated as a plausible situation, and their immediate responses centred on the legal and procedural implications of the app: "According to the Data Protection Act, consent must be obtained every time photos are taken. One must know where photos are stored and who to contact in case of a security breach" (Reflection Group 2). These reactions suggest that the vignette functioned as a realistic stimulus for engaging in regulatory knowledge. Some students also questioned the app's technical reliability and emotional detection limits. One student remarked: "If someone has minimal facial expression, it's also difficult to scan a picture and figure out what they're thinking" (Focus Group). As students moved into the next reflection phase, they identified problems more systematically. These included concerns about user experience, stigmatization, and the ethical implications of AI in sensitive care settings. Their reflections reflect what Ryberg et al. (2021) describe as ecotonal thinking, where students navigate the boundaries between digital tools and human-centred care.

In generating explanations, the students applied knowledge from their professional training to interpret and explain the challenges. They considered alternative implementations and drew on ethical frameworks to assess potential risks. In one interview, a student questioned the app's fundamental value: "Does it benefit the patient, or are we just making things harder rather than better?" (Student A, Focus Group). Although students did not explicitly formulate testable hypotheses, they proposed possible adjustments, such as obtaining consent from relatives or involving user organizations like the Autism Society. These ideas reflect preliminary hypotheses about how the app could be developed more responsibly.

Towards the end, students discussed how the app might be implemented in practice, addressing organizational change, legal compliance, and resource demands. In doing so, they moved into a phase of planning and tentative application, as seen in the following comment: "When something like this is implemented, it will demand many resources. They'll have to start using this technology, and you don't know whether they have the competencies to use it" (Student A, Focus Group). These considerations reveal a concern for feasibility and an awareness of ethical responsibilities; students reflected on how change must be managed thoughtfully to avoid unintended harm or dependency.

The SAC students thus positioned themselves as mediators between technology, legal standards, and care practices. Their reflections were grounded in regulatory and systemic logic but also showed ethical awareness and responsibility. This orientation aligns with deliberate professional practice and demonstrates how reflective practice can support informed, context-sensitive decision-making in administrative roles.

Digital Concept Development

Students from the Digital Concept Development (D-CON) program approached the vignette with a strong sense of professional identity shaped by digital design practices. Tools such as Adobe XD and Generative AI were seen as natural parts of their everyday work. Their reflections illustrated what Dewey (2005) describes as learning grounded in lived experience.

In the early phases of reflection, particularly during concrete experiences and spontaneous interpretation, students focused on usability, interaction design, and user experience. Rather than raising ethical con-

cerns, they addressed the scenario as a design challenge to be solved. One group noted the need for iterative testing and user variation: "There should be user testing and targeted group analysis. The autism spectrum is very broad, and it's difficult to map behaviour patterns" (Reflection Group 2). As their reflection progressed to identifying problems and generating explanations, students continued to frame their thinking through functionality and optimization. The ethical considerations raised were often limited to legal aspects such as data protection under the GDPR rather than broader societal or relational concerns.

Some students expressed a more critical perspective, raising questions about professional responsibility and the boundaries of participation in ethically ambiguous projects. One student reflected: "I think I'd need to do more research before accepting a project like this, especially if it feels ethically grey. You must decide what you want to be part of and where your boundaries are" (D-CON student A, Focus Group). Such comments suggest an emerging awareness of ethical agency and reflect the beginnings of what Trede and Jackson (2021) describe as the deliberate professional. While this perspective was not dominant across the data, it indicates a potential shift from task-oriented thinking to more reflective judgement.

In several cases, students moved toward the fourth phase of Rodgers' (2002) model by integrating professional knowledge (e.g., about data protection laws) into their reflections. For example, one student stated: "The user must have permission to take pictures of other people when they are stored in the app" (Reflection Group 1). Although few reflections evolved into fully formed hypotheses or tested ideas, some students showed signs of engaging with technology's social and ethical dimensions. Their reflections remained largely functional, guided by the assumption that technology should be optimized rather than critically examined. However, occasional questions about user vulnerability, informed consent, and responsible design revealed the early stages of a more nuanced ethical stance.

D-CON students thus operated within the ecotone between technological fluency and professional responsibility. Their reflections were grounded in design logic and user-centred thinking, though some also explored ethical boundaries and personal values. These reflections provide a basis for developing more critical and ethically informed professional judgement in design-oriented education.

Summary

The three professional student groups positioned themselves differently within the ecotone between human-centred and technology-mediated professional domains. As illustrated in Figure 2, SE students predominantly defended the human dimension of professional practice, often expressing resistance to digital interventions in relational work. SAC students operated at the boundary, negotiating regulatory obligations with ethical considerations. In contrast, D-CON students navigated a more integrated space, where technological tools and professional creativity were seen as mutually reinforcing.

Figure 2: Redesigned illustration of ecotones, adapted from Ryberg et al. (2021). The figure is created by the authors

Figure 2 visualizes these dynamics by highlighting the varying degrees of tension and synthesis between analogue and digital orientations across the three groups. These positions are further summarized in Table 3, which outlines each group's conceptual role in the ecotone and the primary focus of their reflective engagement.

Table 3: Professional Roles in the Ecotone and Reflective Orientation

Group of students	Role in the ecotone	Reflective focus
Social Education students	Guardian	Relational ethics and resistance to technological mediation
Health Administration and Coordination students	Mediator	Legal frameworks, ethical regulation, and responsible implementation
Digital Concept Development students	Creator	Innovation, user experience, and functional optimization

These findings provide a basis for exploring how reflective engagement with digital technology contributes to developing professional judgement across distinct disciplinary contexts. In the following discussion, we examine the implications of these differences and consider how reflection can be more intentionally facilitated in post-digital professional education.

Concluding Discussion

This study examines how SE, SAC, and D-CON program students reflect on technology-mediated dilemmas through a GenAI vignette. The findings indicate that students' professional judgement is shaped by their disciplinary background and by the degree to which they critically reflect on technology roles in professional contexts.

In all three programs, the vignette served as a meaningful reflection trigger. The presentation of a scenario marked by ethical ambiguity and emotional complexity disrupted habitual thinking and created a space for inquiry. As theories of reflective learning emphasize, authentic reflection often emerges in response to emotionally or ethically charged situations. The findings also reinforce previous research showing that reflection does not arise automatically from structured educational tasks, even in practice-oriented programs. As Brown et al. (2013) and de la

Croix and Veen (2018) highlight, reflection may become performative unless it is grounded in personal relevance and meaningful engagement.

Students' responses varied according to their disciplinary perspectives. SE students moved through several reflection phases, focusing on relational ethics and human-centred care. SAC students approached the vignette through a procedural and regulatory lens, showing structured but formal reasoning about responsibility and implementation. D-CON students reflected mainly from a design-oriented perspective, emphasizing functionality and user experience, and they only occasionally questioned the ethical implications of technological decisions. These differences confirm that reflection is a socially and professionally situated process. Dewey's concept of reflection as contextually grounded inquiry and Trede and Jackson's (2021) notion of the deliberate professional provide practical frameworks for understanding how students combine values, judgement, and action when faced with uncertainty in professional situations.

The study also underscored the value of a supportive learning environment. The combination of the designed vignette and collaborative reflection formats, group writing, and peer dialogue created conditions that encouraged students to explore complex professional dilemmas in depth. This is consistent with the findings of Marshall et al. (2021) and Butani et al. (2017), who emphasize the importance of autonomy, interaction, and relevance in fostering reflective capacity. This study has some limitations. Its cross-sectional design captures only immediate reflections and does not show how professional judgement develops over time. The findings are based on three programs in one institutional context, which may limit generalizability to other settings. Finally, although efforts were made to minimize researcher influence, the presence of a facilitator may have shaped the reflective dialogue. Future research could address these limitations by employing longitudinal designs, larger and more diverse samples, and alternative facilitation strategies.

In conclusion, this study asked: *How is students' professional judgement influenced and shaped through reflective engagement with digital technology?* The findings show that GenAI vignettes can act as powerful reflection triggers, enabling students to critically explore professional dilemmas in ways shaped by their disciplinary orientation. Social Education students emphasized relational ethics, Health Administration students focused on regulation and implementation, and Digital Concept Development

students highlighted functionality and innovation. Together, these perspectives illustrate that professional judgement emerges not simply from exposure to practice or technology, but from structured opportunities for critical reflection in ethically complex, digitally mediated contexts.

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