

# Dealing with the unforeseen

EXECUTIVE SUMMARY

30 June 2025

## Context

The rapid emergence of generative AI tools in educational settings marks a significant shift in how technology is leveraged for teaching and learning. This case study examines the integration of chatbots, specifically focused on the Norwegian context. It highlights the strategies adopted by local school authorities to implement generative AI in compulsory education and outlines the impacts on teaching methodologies and data governance.

## Background – the Norwegian context

The integration of AI-driven chatbots in compulsory education in Norway represents a transformative development of the platformisation of schooling. With the decentralised structure of the Norwegian school system that allows municipalities and counties substantial autonomy, local school authorities have pioneered strategies for implementing generative AI tools, ensuring secure and pedagogically sound digital ecosystems for students and teachers. The case study *Dealing with the unforeseen* explores how these stakeholders navigate regulation, privacy, teaching methodologies and data governance, and provides insights into localised, scalable solutions for AI integration in compulsory education.

## Regulation and rights privacy

The deployment of AI chatbots in Norwegian education is underpinned by robust regulatory frameworks (see Feide case study) designed to protect student privacy while enabling educational innovation. The General Data Protection Regulation (GDPR) plays a central role in shaping data practices in the EU, ensuring that all interactions with AI tools respect stringent privacy standards. Municipalities across Norway have leveraged agreements with major technology providers like Microsoft and Google to establish secure environments for their students using these AI models. These agreements focus on keeping data within Europe and anonymising student interactions, effectively safeguarding personal information. For example, student prompts are anonymised, ensuring that data cannot be traced back to individual users. Moreover, data processors are carefully managed to prevent unauthorised access and ensure that AI tools operate within safe boundaries. By confining data storage to European facilities, municipalities can leverage GDPR-compliant frameworks to prevent data misuse and protect against international privacy breaches. This approach not only aligns with existing regulations but also sets a precedent for responsible data management in educational contexts.

Additionally, municipalities must consider the ethical implications of AI deployment. While privacy is a key concern, ethical usage extends to ensuring AI tools support educational equity and do not inadvertently harm students. By integrating ethical guidelines into the deployment process and

emphasising transparency, municipalities can create environments where AI tools are used responsibly and effectively.

## Data in use for teaching and learning

AI chatbots have emerged as transformative tools in enriching teaching and learning experiences across Norwegian schools. Their integration into classrooms offers personalised learning opportunities that foster critical thinking and engagement. Teachers and municipal stakeholders have successfully designed chatbots aligned with curriculum goals, employing them across a variety of subjects and educational purposes, from literacy enhancement to ethical reflection.

The strategic use of chatbots has highlighted the potential of AI to support diverse educational methodologies. By crafting pre-prompts that guide interactions, educators can utilise chatbots to stimulate analytical engagement and foster critical thinking. Through thoughtfully designed prompts, chatbots can challenge students to explore complex topics, reflect on ethical dilemmas and articulate their thoughts coherently.

However, challenges persist. Ensuring equitable access to AI tools is critical, as disparities in prior exposure to technology could hinder learning outcomes for some students. Additionally, maximising AI's impact on student learning requires competence development for both educators and students. Municipalities are encouraged to expand teacher training programs, equipping educators with the skills necessary to integrate chatbots effectively and fostering student confidence in utilising AI tools.

The success of AI tools in teaching and learning hinges on strategic planning and innovative design. By prioritising competence development, refining chatbot interfaces, and fostering supportive environments, Norwegian municipalities can maximise the educational benefits of AI integration, transforming classrooms into dynamic hubs of learning and exploration.

## Data governance

Data governance in this context involves multiple facets, from technical infrastructure management to strategic planning and stakeholder collaboration. Competence development programs are central to these efforts, strengthening AI literacy among educators and ensuring robust data utilisation in educational contexts. Municipalities have established teacher teams and workshops to advance AI and data literacy, providing educators with the tools they need to leverage AI effectively in pedagogical practices. By focusing on key areas such as pedagogical planning, formative assessment and ethical considerations, these programs create a shared approach to integrating AI in education.

Governance efforts include providing infrastructures that ensure data privacy and facilitate secure interactions within AI-enabled systems. By aligning technical models with sustainability goals,

stakeholders can support efficient governance, reducing reliance on cloud computing and enhancing data management. Municipalities are encouraged to strengthen interdisciplinary partnerships, fostering innovation and supporting scalable solutions.

## Recommendations

**Enhance privacy protocols.** Continuously refine agreements with service providers to maintain high privacy standards, focusing on anonymising prompts and ensuring secure data storage within Europe.

**Strengthen teacher training.** Expand competence development programs to equip educators with robust AI literacy skills, ensuring they can utilise chatbots effectively to enhance pedagogical practices.

**Adopt scalable frameworks.** Promote adaptable governance models that enable resource sharing across municipalities, supporting systematic AI integrations aligned with educational needs.

**Align curriculum design with AI tools.** Encourage the development of curriculum-aligned chatbot prompts that foster critical thinking, literacy and analytical skills, providing varied educational opportunities.

**Prioritise ethical usage.** Emphasise ethical guidelines and stakeholder engagement in AI implementation discussions to ensure responsible utilisation and maintain educational integrity.



**Co-funded by  
the European Union**

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