STIAEM

Slow Tech Innovation

AI, Ethics and New Teaching Methods

Data Minimisation Protocols and Purpose Limitation in Educational Tools

Co-funded by the European Union

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Università di Foggia

Studi Umanistici, Lettere, Beni Culturali, Scienze della Formazione

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Università di Foggia
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OER 5.1.2: Data Minimisation Protocols and Purpose Limitation in Educational Tools
Reference Module: Module 5 - Safety, Privacy and Sustainability
Related Video-Pill: Video 5.1 - Precautionary Principle & GDPR Compliance
Authoring partner: Liceo "don Milani" di Acquaviva delle Fonti - sede associata "Da Vinci" di Cassano delle Murge
Topic / Thematic Focus: Data minimisation, purpose limitation and privacy by design

Introduction and Learning Objectives

This resource completes the path begun with OER 5.1.1 and accompanies video-pill 5.1 “Precautionary Principle & GDPR Compliance”. If the previous resource outlined the regulatory framework, this one focuses on the two principles that govern the daily relationship between schools and data: minimisation and purpose limitation. They are the criteria that turn data protection from a formality into a conscious didactic choice.
The text connects to DigComp 3.0 (Cosgrove & Cachia, 2025), competence 4.2 “Protecting personal data and privacy”, and to the *Slow Tech* model (Patrignani & Whitehouse, 2019), whose *Clean IT* principle invites us to reduce the superfluous also on the information level. The legal reference is Regulation (EU) 2016/679.
By the end of the reading, teachers will be able to:

- distinguish the declared purpose of a processing operation from the subsequent reuse of data;
- design activities with digital tools by collecting the minimum data necessary;
- establish retention times and deletion procedures consistent with the didactic purpose.

1. Purpose before data

The starting point of every correct choice is to declare the purpose. The GDPR does not ask us not to use data, but to link them to a determined, explicit and legitimate purpose that exists at the time of collection. The wording of the regulation is clear.

> *“collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes (...) ('purpose limitation')” (GDPR, Art. 5, para. 1, letter b).*

Translated into the classroom, the rule reads like this: data collected to complete the register cannot be reused to profile students, and an anonymous questionnaire must not become a named list. Purpose is not a label to be attached at the end, but the criterion that guides design.
Recital 39 of the GDPR makes this requirement explicit with notable clarity and links it to the principle of minimisation.

> *“The personal data should be adequate, relevant and limited to what is necessary for the purposes for which they are processed. This requires, in particular, ensuring that the period for which the personal data are stored is limited to a strict minimum. Personal data should be processed only if the purpose of the processing could not reasonably be fulfilled by other means” (GDPR, recital 39).*

The last sentence is the most useful for the teacher: before processing a piece of data, one asks whether the same objective could not be achieved in another way. If the answer is yes, the processing is superfluous.
In school practice, the declared purpose lives in documents that often remain separate from classroom life: the privacy notice, the register of applications, the accepted terms of use.

Bringing these documents back into didactic design is the first act of awareness: it means asking, for each tool, what purpose the institution and the teacher pursue and whether that purpose truly justifies the collection of personal data. A vague purpose — “improving teaching”, “innovating” — does not satisfy the requirement of determination laid down by the regulation.

2. Minimisation: the operational definition

Article 5 provides the precise definition of the principle. Data must be adequate and not excessive in relation to the purposes.

> *“adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed ('data minimisation')” (GDPR, Art. 5, para. 1, letter c).*

Three adjectives, three verification criteria. Adequate: the data must genuinely serve the purpose. Relevant: they must concern the specific case. Limited: nothing more than what is needed. Applied to a classroom activity, the criteria suggest choices such as using pseudonyms instead of names, collecting aggregate rather than individual data, and refraining from asking for information that will not be used.

Minimisation also has an educational aspect: it makes the value of limits visible to students. Asking “which data do we really need?” is an exercise in critical thinking that is worth as much as a subject content.

A useful practical test is the formula “if I don't need it for this, I won't collect it”. Applied to enrolments in a service, it leads one to ask whether the full name and date of birth are really necessary, or whether a class code is enough. Applied to a questionnaire, it leads one to distinguish the indispensable questions from those collected “just in case”. The result is not a school poorer in information, but a school that knows why it holds what it holds.

3. Keeping data only for as long as necessary

Data that is no longer needed becomes a risk with no counterpart. This is why the principle of storage limitation requires setting a deadline and respecting it.

> *“kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the personal data are processed (...) ('storage limitation')” (GDPR, Art. 5, para. 1, letter e).*

In practice: at the end of the school year, recordings, files uploaded to a platform or photographs from a project must be deleted if they are no longer needed. Providing for a moment of “digital cleaning” at the end of the course is a simple and effective organisational habit.

Storage limitation also requires thinking about the form of the data: an aggregate file without names, if sufficient for the purpose, is preferable to a named file, because it reduces the risk in the event of loss. The same logic applies to backups and working copies: data is truly deleted only when it is deleted from all the places where it has been copied. It is a simple but demanding discipline, which makes sense only if placed within a routine shared by the school.

4. Accountability: documenting choices

Principles are worthless if they are not verifiable. Paragraph 2 of Article 5 introduces the obligation to demonstrate compliance: schools must be able to reconstruct what they did, for what purposes and with what safeguards.

> *"The controller shall be responsible for, and be able to demonstrate compliance with, paragraph 1 ('accountability')" (GDPR, Art. 5, para. 2).*

For the teacher, this means keeping track, even in a simple form, of the choices made: which tools have been adopted, for what purposes, with what data and for how long. A short class register of digital applications is often sufficient and, in case of doubt, allows precise answers to be given to families and the institution.

A further safety safeguard must be added, because minimisation does not exhaust the duty of protection: the data collected must be stored appropriately.

> *"processed in a manner that ensures appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organisational measures ('integrity and confidentiality')" (GDPR, Art. 5, para. 1, letter f).*

The framework is completed by the specific protections for minors, already mentioned: the data of the most fragile subjects benefit from reinforced protection (GDPR, recital 38).

As the UN Committee on the Rights of the Child recalls, the protection of minors extends to the digital environment and to their data (UN OHCHR, 2021). The Council of Europe too asks that the rights of minors be respected, protected and fulfilled in the digital space (Council of Europe, 2018).

Documenting does not mean producing useless paperwork. An up-to-date list of the digital tools used by the class, with the purpose, the data processed and the retention period, is a sufficient safeguard in most cases and, at the same time, a formative tool: drawn up with the students, it makes visible the relationship between didactic choices and the protection of rights.

5. From principles to classroom design

Reducing data does not mean giving up technology: it means designing it with sobriety. A research activity in the classroom, for example, can collect anonymous aggregate data instead of named answers, and a collaborative writing exercise can use group accounts. In both cases learning does not diminish: only what remains in the system changes.

The AI Act offers a complementary principle when the user controls the input data: they must be relevant and sufficiently representative in relation to the purpose of the system (AI Act, Article 26, paragraph 4); and the automatically generated logs must be kept for the necessary time, not less than six months (AI Act, Article 26, paragraph 6). Here too the logic is the same: every piece of data has a reason to exist only in relation to a purpose.

The following table summarises the principles and their operational application.

A useful guiding criterion for the whole process is the "necessity question": before every collection, asking whether the data is indispensable, whether a less invasive alternative exists and whether the student or the family can understand the reason for it. When the answer is clear, the choice becomes defensible before the institution, the families and the students themselves. This is how minimisation stops appearing as a constraint and shows itself for what it is: a form of respect that the school teaches also by practising it.

Principle	Reference	Guiding question	Operational action
Purpose limitation	GDPR Art. 5.1.b	For what declared purpose am I processing this data?	Use the data only for the purpose for which they were collected
Minimisation	GDPR Art. 5.1.c	What is the indispensable minimum?	Pseudonyms, aggregate data, refraining from unused data
Storage limitation	GDPR Art. 5.1.e	For how long do I really need it?	Set a deadline and delete at the end of the course
Integrity and confidentiality	GDPR Art. 5.1.f	How do I protect the data I store?	Controlled access, protected devices, good practices
Responsibility	GDPR Art. 5.2	Would I be able to demonstrate my choices?	Keep a register of applications and purposes

Visual Scaffolding

Mastering the Machine:
Precision Prompting through Rigid Constraints

From Ambiguity to Precision



Ambiguity is Not an Accident

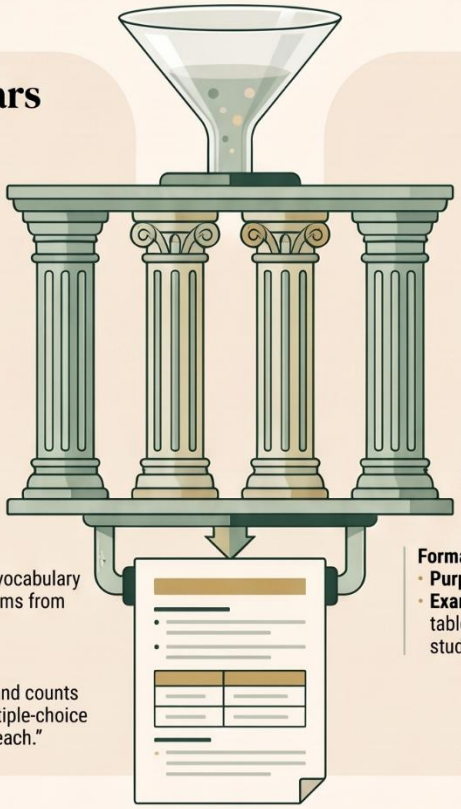
Vague tasks force machines to make random choices, creating barriers to student learning.

(Liu et al., 2021)

The "Defined Task" Shift

Moving from "Summarize this" to **"Summarize in 100 words for 14-year-olds"** eliminates machine guesswork.

The Four Pillars of Constraint



Lexical and Quantitative Control

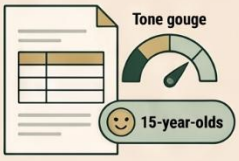


Fix permitted vocabulary and set strict limits on length or item counts.

Lexical Constraint
- **Purpose**: Fixes permitted vocabulary
- **Example**: "Use only the terms from the provided glossary."

Quantitative Constraint
- **Purpose**: Delimits length and counts
- **Example**: "Generate 5 multiple-choice questions; max 25 words each."

Format and Register Calibration



Mandate structural forms (like tables) and tone suited to specific student age groups.

Format/Register Constraint
- **Purpose**: Fixes form and tone
- **Example**: "Two-column Markdown table, write for 15-year-old students."

(White et al., 2022; Sohalhoff et al., 2024)

The Boundary of Control



Structure is Not Truth

Rigid formatting increases output control but never guarantees factual correctness or pedagogical accuracy.



Human-in-the-Loop Verification

Teachers must perform the final check for accuracy, appropriateness, and fairness.

Gemini Notebook

Conclusions and Metacognitive Reflection Prompts

This resource has focused on the principles that make the use of data in schools sustainable: declared purpose, minimisation, limited retention, security and documented responsibility. They are not formal constraints, but design criteria: applying them means asking, for each tool, which data are really needed, for how long and with what safeguards. It is the didactic translation of the precautionary principle.

To transfer these core ideas into one's own practice, the following reflection prompts are proposed:

- In a recent activity of yours, which data did you collect without them being necessary for the didactic purpose?
- How could you redesign that same activity using pseudonyms or aggregate data?
- What retention deadline would you set for the digital materials produced by a class, and why?

Technical Metadata Sheet

Metadata Field	Specification / Parameter Value
Identifier	OER 5.1.2
Title	Data Minimisation Protocols and Purpose Limitation in Educational Tools
Creator	Liceo "don Milani" di Acquaviva delle Fonti - sede associata "Da Vinci" di Cassano delle Murge
Description	Complementing OER 5.1.1, the resource focuses on the two principles governing the daily relationship between schools and data: minimisation and purpose limitation. It distinguishes a declared purpose from subsequent reuse and shows how to design activities that collect only the data strictly necessary. The practical focus is on defining retention times and deletion procedures consistent with the didactic purpose and on documenting the choices in an accountability perspective.
Keywords	data minimisation; purpose limitation; data retention; deletion; accountability; educational data; privacy by design; GDPR
Language	EN (English)
Affiliation	Liceo "don Milani" di Acquaviva delle Fonti - sede associata "Da Vinci" di Cassano delle Murge
Contributor	STIAEM Transnational Scientific Board (peer review, Rhodes validation protocol)
Media Format	Text; Infographics
Genre	Training Manual; Educational Guide
URL	
Citation	Cosgrove, J., & Cachia, R. (2025). DigComp 3.0: European digital competence framework (Fifth edition). Publications Office of the European Union. https://data.europa.eu/doi/10.2760/0001149 European Union. (2016). Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation). Official Journal of the European Union, L 119, 1-88. https://eur-lex.europa.eu/eli/reg/2016/679/oj European Union. (2024). Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act). Official Journal of the European Union, L, 12.7.2024. https://eur-lex.europa.eu/eli/reg/2024/1689/oj Miao, F., & Cukurova, M. (2024). AI competency framework for teachers. UNESCO. https://doi.org/10.54675/ZJTE2084 Patrignani, N., & Whitehouse, D. (2019). Slow tech: The bridge between computer ethics and business ethics. In This changes everything - ICT and climate change (pp. 265-280). Springer.
Educational Level	Secondary School

Associated Module / MOOC Video Lesson	Module 5 - Safety, Privacy and Sustainability / Video 5.1 - Precautionary Principle & GDPR Compliance
Learning Objectives	distinguish the declared purpose of a processing operation from the subsequent reuse of data; design activities with digital tools by collecting the minimum data necessary; establish retention times and deletion procedures consistent with the didactic purpose.
Rights	Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)
Date Available	14/09/2026
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References and Webography

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