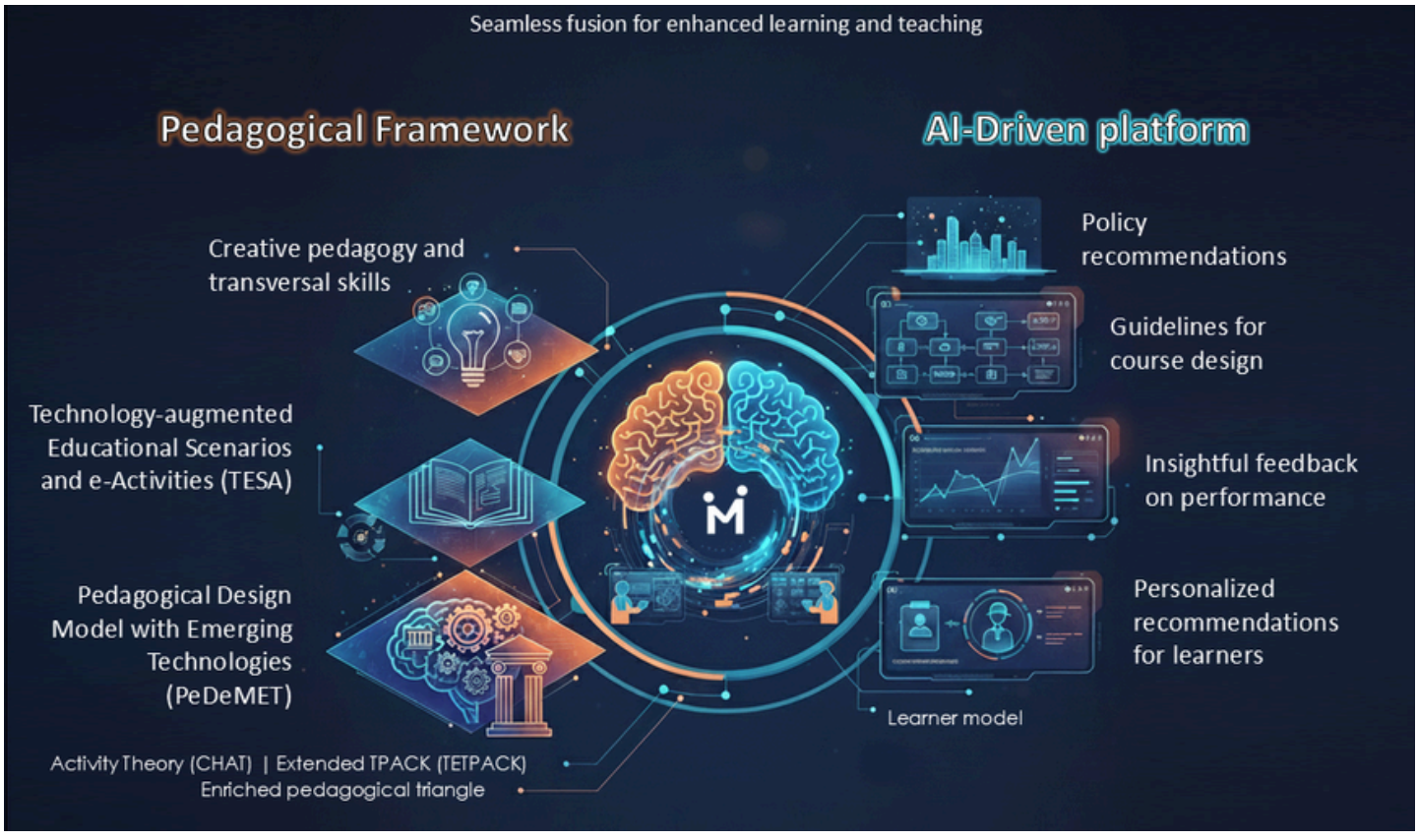
Augmented Intelligence for Pedagogically Sustained Training and Education

Policy Brief 3 - December 2025

This third and final **augMENTOR** policy brief builds on the project's technical development, pilot implementation, and policy dialogue across Europe. It translates the principles of trustworthy and pedagogically grounded Artificial Intelligence (AI) into concrete guidance drawn from real educational settings, highlighting how AI can meaningfully support teaching, learning, and institutional decision-making.

THE AUGMENTOR SOLUTION



The augMENTOR solution aims to bring transformative change to education by seamlessly weaving modern technology into the way we teach and learn. It does so by offering a coherent model comprised of a state-of-the-art pedagogical framework and an AI-boosted platform that supports educators and learners throughout the learning process. By mixing new teaching methods with advanced artificial intelligence, augMENTOR helps educators design advanced courses and helps students maximize their potential.

THE AUGMENTOR PLATFORM

augMENTOR transforms heterogeneous learning data into meaningful, explainable, and pedagogically grounded insights by interweaving learner profiles, information from a dynamic knowledge graph and the Technology-augmented Educational Scenarios and e-Activities pedagogical framework (TESA). It supports the learning process on three different levels:

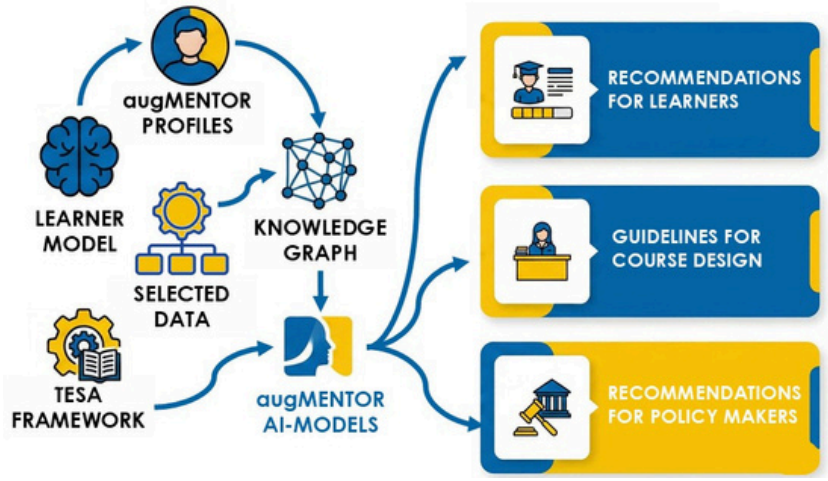
a. Recommendations for learners to improve their performance and skills

b. Course design guidelines for educators to support them in creating inclusive courses for diverse classes

c. Recommendations for policy makers and education stakeholders to inform decision making for curriculum design and future courses.

Recommendations are designed by aggregating performance data, the augMENTOR profiles, and course descriptions, while all insights are evidence-based and aligned with the TESA (Technology Enhanced Student Assessment) framework produced by the project. Using all these dimensions, augMENTOR ensures that policies range across diverse educational contexts while being pedagogically sound, transparent and directly linked to real data.

augMENTOR creates detailed **learner profiles** by looking at more than just academic performance. It considers a learner's engagement and in-course activities. It gathers a wide range of information from surveys, grades, and in-course behavioral metrics to create these profiles. This process uses advanced machine learning to group learners with similar characteristics, forming the basis for the predefined augMENTOR profiles.



augMENTOR core elements and their interconnected structure

AUGMENTOR ACTIVITIES

PILOT IMPLEMENTATION

4 Pilot sites

~700 Learners and educators involved

POLICY MAKING WORKSHOPS

8 workshops

~ 120 Participants involved

augMENTOR

INTERNATIONAL STAKEHOLDERS & EDUCATIONAL POLICY MAKERS

Promote explainable, pedagogically meaningful learning analytics

Meaningful AI integration requires interpretable, pedagogically relevant analytics. augMENTOR pilots demonstrateD that opaque data hinders instructional decisions. Consequently, explainable, pedagogically grounded systems are essential to support professional judgement and reflective teaching.

Safeguard human oversight to prevent deskilling and protect pedagogical integrity

To preserve professional agency and prevent deskilling, AI must be positioned to augment rather than replace human judgement. Stakeholder insights confirm that maintaining this oversight is essential to ensure AI reinforces ethical, contextual, and emotionally informed pedagogy.

Promote accessible, multimodal AI systems to ensure equity in AI supported learning across Europe

Learners with literacy challenges or disabilities often struggle to utilise AI recommendations without human mediation. Consequently, framing accessibility-by-design and multimodal features as core conditions is essential for ensuring equitable, inclusive AI adoption.

Advancing future-oriented STEM Education through 21st century skills and explainable AI

Strengthening STEM education requires enhancing quality and inclusivity by integrating 21st century skills within flexible pedagogical frameworks. augMENTOR findings confirm that explainable, ethically grounded AI supports this transformation through personalised learning and formative assessment, suggesting international policy could leverage such platforms to align advanced digital skills with educator empowerment and robust governance.

Promote sustainability and digital sovereignty in AI-Enabled education

To align AI adoption with long-term sustainability and autonomy, the environmental impact and reliance on non-European infrastructure needs to be addressed. Stakeholders warn that ignoring these factors strains resources and compromises strategic control, necessitating that sustainability and digital sovereignty be framed as complementary dimensions of responsible, resilient AI education.

NATIONAL STAKEHOLDERS & EDUCATIONAL POLICY MAKERS

Strengthen national teacher training frameworks to build AI literacy and competence among educators

Although educators increasingly use AI, augMENTOR findings indicate that uncertainty in interpreting insights persists, stemming from a skills gap rather than resistance. To prevent the pedagogical value of AI from remaining under-realised, national policies need to systematically embed AI literacy into teacher training, enabling educators to critically interpret and contextualise automated insights.

Promote tools that increase trust in AI generated recommendations through explainability features

While learners valued recommendations, concerns regarding standardisation and opaque criteria highlight a critical need for visible assessment logic. Consequently, national AI strategies need to prioritise transparency to ensure that automated assessments reinforce trust and pedagogical legitimacy.

Strengthen usability, and technical reliability as conditions for pedagogical benefit

Learners praised the platform's usability, yet technical barriers at the early stages of the pilot like system freezing or navigation difficulties highlighted that pedagogical benefit is inextricably linked to reliability. Consequently, inconsistent performance or complex access can drive disengagement, rendering even valuable recommendations ineffective.

Align regulatory frameworks with classroom realities through practical implementation guidance

To ensure AI regulations are practically relevant, policy intentions could be effectively translated into everyday pedagogical practice. Stakeholders indicate that educators often struggle to interpret regulatory requirements, viewing frameworks as abstract reference points rather than supportive instruments. Consequently, national policies could prioritise bridging regulatory objectives with classroom realities through clear, practice-oriented guidance.

EDUCATIONAL ORGANISATIONS, ASSOCIATIONS & EDUCATORS

Position AI as a pedagogical companion that supports, rather than replaces, human judgment

Evidence from augMENTOR pilots suggests AI recommendations are most valuable as starting points for dialogue rather than definitive judgements. Since educators used these outputs to facilitate reflection and scaffolding, AI's primary value lies in informing human reasoning rather than automation. Therefore, organisations could frame AI as a pedagogical companion, ensuring human judgement and relational pedagogy remain central.

Use AI recommendations to strengthen continuous, iterative learning cycles

augMENTOR pilots indicate that AI tools are most effective when integrated into the regular teaching rhythm rather than applied retrospectively. Educators valued timely insights for formative assessment and early intervention, enabling adjustments to pacing and workload. Consequently, AI can support continuous learning by structuring activities into shorter cycles that promote positive habits and reduce cognitive overload.

Expand recommendations beyond learners to include course design recommendations for educators

Educators suggest that recommendations should extend beyond learner performance to address course structure and pedagogical design. As learner progress is shaped by task quality and scaffolding, course-level insights can support reflective practice and prevent the misattribution of instructional design issues to learner deficits .

Align AI insights with authentic pedagogy and 4Cs development

To ensure meaningful contribution, AI recommendations must transcend surface metrics and align with authentic skills development. As augMENTOR pilots indicate, reliance on quantitative data alone risks ambiguity. . Consequently, grounding AI in pedagogical frameworks is essential to capture the true depth of learner engagement rather than merely observable activity patterns.

augMENTOR

www.augmentor-project.eu/

WANT MORE?

Visit the extended version of this policy brief to find more information about:

- Dedicated strategies about implementing the presented briefs
- The introduction of AI in educational settings
- Current EU policies and trends.

Funded by the European Union

The augMENTOR project (GA No. 101061509) is funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. The European Union cannot be held responsible for them.