DIGIEDUHACK SOLUTION CANVAS

Title of the solution:	A.R.I.A. (Adaptive and Responsive Inclusive AI)	**Team name:**	Tor Vergata 2
Challenge addressed:		**Challenge category:**	

Background of the team:

(multiple selections possible in case of mixed teams)

Higher Education Students · Researchers · Professionals
Teachers · Primary School Students · Secondary School Students
Others (please specify)

Solution description

The proposed solution is ARIA (Adaptive and Responsive Inclusive AI)an emotionally intelligent learning platform that personalises study paths through generative AI and affective computing. ARIA combines cognitive style assessment, multimodal content, gamified micro-assessments and an empathic feedback system able to recognise emotions and adapt the learning experience in real time.
The implementation plan follows a gradual and human-centred approach. The first phase focuses on shaping a functional prototype that demonstrates ARIA's core idea: learning that adapts to both cognitive needs and emotional states. The following phase involves real testing with students in different contexts, especially DSA learners and working students, to understand how ARIA behaves in everyday study routines and to refine the experience based on their reactions. The final phase aims at bringing ARIA into wider educational settings, collaborating with institutions and integrating the tool into their digital environments while building long-term partnerships. This process requires a mix of technical competences and pedagogical expertise, and must address potential barriers such as ethical concerns, privacy management and the willingness of institutions to embrace an empathy-driven approach.
ARIA enhances digital education by linking performance with emotional well-being, offering study experiences that adjust to pace, mood, motivation and personal circumstances. Its success can be measured through improvements in academic results, higher engagement, reduced dropouts and qualitative indicators of motivation, confidence, accessibility and perceived inclusivity.

Context

The problem comes from an education system shaped by digitalisation and AI but still lacking real inclusivity. Standardised tools ignore differences in cognitive style, emotional state and time constraints, creating barriers for DSA students, working students, traditional learners and those with learning difficulties.
Students disengage because learning feels impersonal, emotional signals are not recognised and tools are designed for performance rather than well-being.
The solution aligns with DigiEduHack 2025 by introducing empathy, personalisation and emotional intelligence into digital learning. It answers the organiser's challenge by addressing the inclusivity gap and offering a model that adapts to diverse learners in a more human and flexible way.

Target group

The solution is designed specifically for students with learning differences, working students, traditional learners and those who face learning problems such as low attention, motivation or consistency. These groups benefit because the platform provides accessible, multimodal and simplified content for DSA and traditional learners, flexible and time-sensitive study models for working students, and supportive tools for anyone who struggles to study independently or maintain a steady routine. The solution is particularly relevant because these students need empathy as much as efficiency, and their emotional well-being strongly shapes memory, focus, motivation and overall engagement with learning. By offering personalised and adaptive experiences that take into account individual pace, cognitive style and mental state, the platform creates a learning environment where each group feels recognised, understood and genuinely supported throughout their educational journey.

Impact

ARIA introduces a shift in digital education by creating learning environments that respond to the real conditions in which students study. Instead of treating learners as identical users, it adapts to their rhythms, difficulties and emotional signals, allowing each person to approach content in a way that feels manageable and sustainable. This helps remove many of the hidden barriers that make studying discouraging for those who need accessible formats or for those who must balance academic work with professional and personal responsibilities. In practice, ARIA encourages a learning experience that is more fluid, respectful of individual pace and supportive of the effort behind every study session.
Its influence is also visible on a broader social level, because it changes how students relate to digital education and to one another. By offering feedback that is attentive and reassuring, it reduces the distance often created by online tools and helps learners feel more connected and less overwhelmed. This promotes a healthier emotional climate in which stress is easier to recognise and manage, and in which motivation grows through a sense of being understood. Over time, ARIA contributes to forming learning communities where collaboration, empathy and attention to well-being become natural elements of the educational experience, strengthening both personal confidence and the overall quality of digital learning spaces.

Describe it in a tweet

ARIA transforms higher education with empathic AI that listens, adapts, and supports every learner. It offers personalized study plans and emotional feedback, proving education should be intelligent, inclusive, and kind.

#EmpathicEducation #InclusiveLearning #PersonalizedLearning

Innovativenes

ARIA's unique edge is its integration of Artificial Intelligence (AI) with Emotional Intelligence. While most current education tools are standardized and focus only on performance, ARIA is superior because it actively recognizes and adapts to a student's emotional state, a key driver for memory and motivation. It moves beyond simple content changes by using affective computing to interpret stress or demotivation in real-time. This allows ARIA to act as a caring educational companion, offering empathy-based coaching and feedback, unlike the "cold, mechanical" tutors that fail to support diverse learners (like working students or those with DSA).

Transferability

ARIA is highly versatile for other learning contexts, transferable either fully or partially. The complete system can be used, for example, in Corporate Training or K-12 Education to monitor engagement. Components like the Cognitive Style Assessment can be used partially, for example, in career guidance. Crucially, ARIA is designed with "ethics by design": this includes strict data privacy (GDPR-compliant), bias prevention, ensuring emotional safety, and maintaining human oversight from educators.

Sustainability

Sustaining and scaling ARIA involves continuous development across three phases: a Prototype Phase (0–6 months) for building the core empathic and adaptive modules; a Pilot Phase (6–12 months) for real-world testing and algorithm refinement using data from DSA and working students; and a Scaling Phase (12–18 months and beyond) for integration with existing LMS systems. Long-term success is ensured by monitoring a mixed evaluation framework that tracks both quantitative metrics (dropout reduction) and qualitative metrics (emotional well-being), with regular feedback loops guaranteeing ARIA maintains its human-centered approach as it grows.

Team work

The team, consisting of Chiara Dragani, Giulia Negroni, Waeza Nadia Rosun, Matteo Valterio, Tiziano Primavera, and Tariq Tariq, is perfectly suited to develop ARIA due to our powerful synergy. The team's expertise is a blend of AI development and data modelling, Educational Psychology and cognitive sciences, UX/UI design and accessibility, and research/user analysis. This combined technical, psychological, and design competence is crucial for building an empathic AI solution. The team validated deep, user-centered focus through extensive research (interviews, persona mapping) into the needs of diverse learners. We plan to continue working together, as the proven synergy, shared commitment to ARIA's mission, and complementary skill sets are vital for the solution's future development and scaling.