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European Association of ERASMUS Coordinators (EAEC)
36 Stasinou street, Office 104, Strovolos 2003, Nicosia, Cyprus

www.eaecnet.com www.eracon.info

info@eaecnet.com info@eracon.eu

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PREFACE

The Erasmus Congress (ERACON) is an annual Conference, organized by the European Association of ERASMUS Coordinators (EAEC) where IR Officers, placement and Internship Managers, researchers and professionals with an interest in the ERASMUS+ programme are actively participating with presentations, workshops and paper submissions. ERACON 2025 was the 21st Conference organized since 2005.

CAREER-EU is also an annual Conference organized by the European Association of Career Guidance (EACG) in cooperation with the European Association of ERASMUS Coordinators (EAEC) hosted within ERACON. Career Guidance Counsellors and other experts make presentations and submit papers. CAREER-EU 2025 was the 15th annual Conference organized since 2010.

Prof. Gregoris A. Makrides

President – European Association of ERASMUS Coordinators, Cyprus

President – European Association of Career Guidance, Cyprus

**Professor of Maths & STEAME Education, University of the National
Education Commission, Krakow, Poland**

**AI in HIGHER EDUCATION: ERASMUS VIRTUAL EXCHANGES
and the EU's 2030 STRATEGY**

Nadine Rombert Trigo, Fundação Ensino e Cultura Fernando Pessoa, Porto,
Portugal, nadineromberttrigo@fundacaofernandopessoa.pt

Justino M. R. Lourenço, Instituto Superior Politécnico GAYA, V.N.Gaia, Portugal,
jml@ispgaya.pt

ABSTRACT

The landscape of higher education is undergoing a profound transformation, driven by technological advancements, particularly artificial intelligence (AI). Within the European context, these developments coincide with ambitious policy frameworks and educational initiatives, notably the Erasmus Virtual Exchanges program and the European Union's 2030 strategic vision. We have tried to examine the convergence of these three elements—AI applications in higher education, the evolving Erasmus program, and the EU's forward-looking strategy—exploring how they collectively reshape the future of European higher education.

I. The landscape of higher education is undergoing a profound transformation, driven by technological advancements, particularly artificial intelligence (AI). Within the European context, these developments coincide with ambitious policy frameworks and educational initiatives, notably the Erasmus Virtual Exchanges program and the European Union's 2030 strategic vision. This essay examines the convergence of these three elements—AI applications in higher education, the evolving Erasmus program, and the EU's forward-looking strategy—exploring how they collectively reshape the future of European higher education. As universities face unprecedented challenges, from global competition to demographic shifts, the integration of AI and virtual mobility presents both opportunities and complexities that warrant careful consideration.

Artificial intelligence has permeated various aspects of higher education, moving from experimental applications to core institutional functions. This transition represents more than mere technological adoption; it signifies a fundamental reconsideration of educational methodologies and institutional operations.

One of the most significant impacts of AI in higher education is the development of personalized learning environments. Traditional educational models often employ a standardized approach that cannot adequately address diverse learning needs. AI-powered systems analyze individual student performance data, learning patterns, and engagement metrics to create customized educational pathways. These systems adapt content delivery, pacing, and assessment methods to match each student's unique learning profile, potentially improving knowledge retention and academic outcomes. European universities have begun implementing these technologies through intelligent tutoring systems that provide real-time feedback and adaptive content presentation. For instance, platforms like ALEKS (Assessment and Learning in Knowledge Spaces) employ AI algorithms to determine what students know and don't know, subsequently tailoring instruction to address identified knowledge gaps. Such personalization represents a shift from the traditional "one-size-fits-all" model toward a more nuanced understanding of educational effectiveness.

Beyond classroom applications, AI significantly enhances administrative processes within higher education institutions. Automated systems manage routine tasks, from enrollment processing to resource allocation, allowing administrators to focus on more complex institutional challenges. Moreover, predictive analytics enable data-driven decision-making, with AI models forecasting student retention risks, resource needs, and institutional performance trends. These capabilities are particularly valuable in the European context, where universities often operate under significant resource constraints while facing demands for increased accountability and effectiveness. The European University Information Systems (EUNIS) has highlighted how AI-driven analytics help institutions optimize operations while identifying strategic opportunities for improvement and innovation.

Despite its potential benefits, the integration of AI in higher education raises critical ethical questions. Issues of data privacy, algorithmic bias, and surveillance concerns demand careful consideration. European universities, operating under the General Data Protection Regulation (GDPR), face particular challenges in balancing innovative AI applications with stringent data protection requirements.

Additionally, the implementation of AI technologies risks exacerbating existing digital divides both within and between institutions. Access to advanced AI tools and the expertise needed to implement them effectively varies considerably across European higher education institutions. Without deliberate policy interventions, technological innovation may inadvertently reinforce existing inequalities rather than ameliorate them.

Erasmus Virtual Exchanges: Reimagining International Education

The Erasmus program, arguably the EU's most successful educational initiative, has evolved significantly since its inception in 1987. The introduction of Erasmus Virtual Exchanges represents a pivotal moment in this evolution, leveraging digital technologies to expand educational mobility beyond traditional physical exchanges. Traditional Erasmus exchanges involve physical relocation of students and staff between participating institutions. While tremendously valuable, this model inherently limits participation based on financial resources, personal circumstances, and institutional capacity. Erasmus Virtual Exchanges (EVE) address these limitations by enabling "virtual mobility"—structured educational experiences that connect students and educators across borders through digital platforms.

These virtual exchanges employ various technological solutions, including collaborative online learning environments, mixed-reality experiences, and AI-facilitated interactions. The COVID-19 pandemic accelerated the adoption of these approaches, demonstrating that meaningful international educational experiences need not always require physical travel. The European Commission's 2021 Digital Education Action Plan explicitly recognized virtual exchanges as a complementary approach to traditional mobility, rather than a temporary substitute.

Erasmus Virtual Exchanges serve dual pedagogical functions, simultaneously developing cultural intelligence and digital competence. Participants engage in cross-cultural dialogues and collaborative projects while navigating digital tools and platforms—an integration that mirrors the interconnected nature of contemporary professional environments.

Deepening Cultural Intelligence through Virtual Exchanges

Cultural intelligence (CQ), defined as the capability to function effectively in culturally diverse settings (Earley & Ang, 2003), has become increasingly essential in a globalized world. Virtual exchanges offer unique opportunities for developing CQ through structured intercultural encounters. Unlike traditional exchanges, which often immerse students in a single foreign culture, virtual exchanges can facilitate engagement with multiple cultural contexts simultaneously, providing a broader perspective on global diversity.

Research by O'Dowd (2021) demonstrates that well-designed virtual exchange programs develop specific components of cultural intelligence:

Cognitive CQ: Virtual exchanges enhance knowledge of cultural systems, norms, and practices through both formal instruction and peer-to-peer learning. AI-powered content adaptation ensures cultural concepts are presented in accessible ways for diverse learner groups.

Metacognitive CQ: The reflective components of virtual exchanges, often facilitated through AI-supported journaling and discussion platforms, develop students' capacity to plan for, remain aware during, and adjust after cross-cultural interactions.

Motivational CQ: The low-stakes environment of virtual exchanges allows students to build confidence in cross-cultural communication gradually, developing intrinsic interest in cultural exploration. AI-driven gamification elements further enhance motivation through achievement recognition and progress tracking.

Behavioral CQ: Through repeated practice in virtual environments, students develop behavioral flexibility and communication skills applicable across cultural

contexts. AI feedback systems can identify cultural communication patterns and provide guidance on appropriate adaptations.

The EVOLVE project (Evidence-Validated Online Learning through Virtual Exchange), funded by the European Commission, has documented how virtual exchanges integrate intercultural learning with disciplinary content, creating meaningful contexts for applying cultural intelligence (EVOLVE Project, 2020). Their findings indicate that virtual exchanges particularly excel at developing context-specific cultural competencies relevant to professional practice.

Developing Digital Competence Through Immersive Practice

Digital competence encompasses more than technical skills; it involves the confident, critical, and responsible use of digital technologies for learning, work, and participation in society (European Commission, 2018). The DigComp 2.2 framework identifies five key areas of digital competence that virtual exchanges naturally develop:

Information and data literacy: Virtual exchange participants must locate, evaluate, and manage digital information from diverse cultural sources, developing critical assessment skills applicable across contexts.

Communication and collaboration: Students use various digital tools to communicate across linguistic and cultural boundaries, adapting communication strategies to different platforms and audiences. AI-enabled translation and cultural adaptation tools support this process while maintaining awareness of technological mediation.

Digital content creation: Collaborative projects within virtual exchanges require students to create and revise digital content for cross-cultural audiences, developing technical skills and cultural sensitivity in content production.

Safety: Navigating international digital environments raises awareness of privacy, data protection, and digital wellbeing considerations across different regulatory contexts. AI-enhanced security features help students identify potential risks while building responsible digital habits.

Problem-solving: When technical or communication challenges arise, students develop resourcefulness and adaptability in finding solutions, often drawing on collective knowledge across cultural boundaries.

Vuorikari et al. (2022) note that virtual exchanges provide an authentic context for developing these competencies, integrating them with disciplinary learning rather than treating digital skills as separate from academic content. This integration makes skill development more meaningful and sustainable.

AI's Role in Enhancing Cultural and Digital Learning

Artificial intelligence significantly enhances both cultural intelligence and digital competence development within virtual exchanges through several mechanisms:

Adaptive Cultural Training: AI systems identify cultural misunderstandings or knowledge gaps in student interactions and provide targeted resources or interventions. For example, Shadieff and Yang (2020) describe systems that analyze communication patterns to detect potential cross-cultural miscommunications and suggest alternative approaches.

Augmented Communication: Language barriers often inhibit meaningful cultural exchange. AI-powered real-time translation services, such as those integrated into Microsoft Teams or Google Meet, enable deeper conversations while preserving

awareness of linguistic differences. Additionally, sentiment analysis tools help participants interpret emotional contexts that might be missed in text-based communication.

Simulation and Role-Playing: AI-driven simulations create safe environments for practicing cross-cultural interactions before engaging with actual exchange partners. These simulations adapt to individual learning needs while providing immediate feedback on cultural appropriateness and communication effectiveness.

Personalized Learning Pathways: As noted by Holmes et al. (2022), AI systems track individual progress in developing specific cultural and digital competencies, recommending activities and resources tailored to each student's development needs and learning preferences.

Research by Swartz et al. (2023) indicates that the combination of virtual exchanges and AI support creates particularly powerful learning environments because they provide both authentic cultural contexts and personalized guidance, addressing the common challenge that cultural learning often happens incidentally rather than systematically.

It is important to understand virtual exchanges not as replacements for physical mobility but as complementary approaches within a comprehensive internationalization strategy. The "blended mobility" model combines elements of both physical and virtual exchanges, creating flexible pathways that maximize educational impact while optimizing resource utilization.

The European University Alliance initiatives, funded under the European Universities program, exemplify this integrated approach. These alliances develop interconnected campuses where students can seamlessly transition between physical and virtual learning experiences across multiple institutions. AI technologies support this integration by synchronizing educational systems, facilitating credential recognition, and personalizing learning continuity across diverse institutional environments.

Digital Transformation and Technological Sovereignty

The European Union's strategic vision for 2030 encompasses multiple interconnected frameworks, including the Digital Europe Programme, the European Education Area, and broader social and economic development goals. AI applications in higher education and virtual exchange initiatives align with several key dimensions of this strategic vision.

The EU's 2030 Digital Compass emphasizes technological sovereignty, digital skills development, and the ethical application of emerging technologies. Higher education institutions serve as critical sites for advancing these priorities through research, education, and innovation activities. By incorporating AI technologies and virtual learning environments, universities contribute to broader digital transformation objectives while developing human capital for the digital economy.

The Digital Education Action Plan 2021-2027 specifically addresses the role of education systems in fostering digital resilience and innovation capacity. It positions initiatives like Erasmus Virtual Exchanges as instrumental in developing the digital competencies needed for meaningful participation in increasingly technology-mediated social and economic contexts.

The EU's 2030 strategy emphasizes inclusivity as a core value, seeking to ensure that technological and educational advancements benefit all citizens regardless of geographic location, socioeconomic status, or personal circumstances. Virtual

exchange programs democratize access to international educational experiences, making them available to students who face barriers to traditional mobility.

AI-enhanced virtual exchanges particularly support inclusion by accommodating diverse learning needs. Adaptive learning systems, automated translation services, and assistive technologies make international education more accessible to students with disabilities, language challenges, or specific learning differences. These applications align with the European Pillar of Social Rights' emphasis on equal access to quality education and training.

Environmental sustainability constitutes a central pillar of the EU's 2030 vision, with the European Green Deal establishing ambitious climate neutrality targets. Virtual exchanges contribute to sustainability objectives by reducing carbon emissions associated with international travel while maintaining valuable cross-cultural educational experiences.

Moreover, the development of virtual education models enhances systemic resilience, as demonstrated during the COVID-19 pandemic. By diversifying educational delivery methods, institutions become better equipped to maintain continuity despite disruptive events. This resilience aligns with the EU's broader emphasis on strengthening European preparedness for future challenges.

Challenges and Future Directions

Despite their considerable potential, the convergence of AI, virtual exchanges, and strategic policy frameworks presents significant challenges that require thoughtful navigation.

Effective implementation requires robust technological infrastructure and interoperable systems across diverse institutional contexts. The digital readiness of European higher education institutions varies considerably, with significant disparities in technological capacity, expertise, and resources. Addressing these disparities requires coordinated investment and capacity-building efforts at both institutional and systemic levels.

The European Open Science Cloud (EOSC) and the European Blockchain Services Infrastructure represent important steps toward creating interoperable digital ecosystems for education and research. However, achieving seamless integration across institutional systems remains a complex technical and governance challenge. The integration of AI and virtual exchange models needs substantial pedagogical innovation and faculty development. Traditional teaching approaches often transfer poorly to technology-mediated learning environments, requiring educators to reconceptualize instructional design, assessment methods, and student engagement strategies.

European initiatives like the European University Association's "Learning & Teaching" platform facilitate knowledge exchange regarding pedagogical innovation. Nevertheless, more systematic approaches to faculty development and institutional capacity building are needed to realize the full potential of these technological and programmatic innovations.

Ensuring quality and facilitating credential recognition across diverse educational contexts presents additional challenges. Traditional quality assurance frameworks may inadequately address the unique characteristics of AI-enhanced learning and virtual exchanges. The European Association for Quality Assurance in Higher Education (ENQA) has begun developing specialized guidelines for evaluating digital education quality, but implementation remains uneven across the European Higher Education Area.

Similarly, credential recognition for virtual learning experiences requires standardized frameworks that accurately reflect learning outcomes and competencies acquired through non-traditional educational pathways. The European Credit Transfer and Accumulation System (ECTS) provides a foundation for such recognition, but requires adaptation to fully accommodate emerging educational models.

Forecasting Future AI Trends to Enhance Erasmus Virtual Exchanges

Looking ahead, emerging trends in artificial intelligence hold the potential to significantly elevate the Erasmus Virtual Exchanges (EVE) program by addressing current limitations and enabling richer, more inclusive learning experiences. Several future-oriented developments stand out.

1. Emotion-Aware AI for Empathic Intercultural Dialogue

Next-generation AI systems are increasingly capable of detecting emotional cues through voice tone, facial expressions, and textual sentiment analysis in Patel, H. K., Rai, V., Singh, H. R., & Kumar, R. (2025) & Shinde, S., Mahalle, P., Panchal, S., Mahalle, S., Pandit, A., & Tonpe, P. (2024). When applied to virtual exchange contexts, these tools could foster more emotionally intelligent interactions. For example, AI could provide participants with real-time feedback on tone or suggest empathetic rephrasing during sensitive cross-cultural conversations. This development aligns with efforts to cultivate higher levels of behavioral and metacognitive cultural intelligence.

2. AI-Generated Multimodal Learning Environments

Future AI will be increasingly adept at generating personalized, multimodal content—including immersive simulations, interactive narratives, and culturally contextualized virtual reality (VR) environments in Latoschik, M. E., Biermann, P., & Wachsmuth, I. (2005). These experiences can offer students authentic, embodied encounters with diverse cultural settings without physical travel. For instance, participants in a virtual exchange focused on environmental policy could explore a digitally reconstructed Amazon rainforest while collaborating with peers from Brazil.

3. Autonomous Peer Matching and Group Optimization

Advanced AI could dynamically form intercultural teams based on a deep analysis of students' learning goals, personality traits, cultural profiles, and prior digital behavior. This approach enhances group cohesion and learning effectiveness while reducing administrative burden. Such systems might also monitor group dynamics in real time and suggest timely interventions to promote equity and participation Wang, Y. (2024) & Klimova, B., & Chen, J. H. (2024).

4. AI for Scalable Mentorship and Reflective Practice

AI-driven agents functioning as virtual mentors could support large-scale virtual exchanges by offering personalized coaching, posing reflective questions, and

tracking individual growth in cultural competence. These agents can also scaffold metacognitive learning by helping students draw connections between their experiences and broader intercultural frameworks, thus enhancing the reflective dimension of EVE in Arora, S., Tiwari, S., Negi, N., Pargaian, S., & Misra, A. (2023).

5. Predictive Analytics for Program Design and Equity Monitoring

As data ecosystems mature, AI can help program coordinators predict barriers to participation (e.g., time zones, digital access, motivation patterns) and proactively design inclusive interventions. Predictive models can also flag emerging inequalities in engagement or learning outcomes, enabling real-time adjustments that uphold the EU's commitment to inclusion and accessibility in Togni, J. (2025).

Towards a Synergistic Future

To realize these possibilities, collaboration between AI developers, educators, intercultural trainers, and policy makers will be essential. Strategic investment in research and infrastructure, alongside the co-creation of ethical AI frameworks tailored to virtual exchange, can ensure that technological innovation enhances—rather than replaces—the humanistic goals of international education in Pachoulas, G., Christopoulos, A., & Stylios, C. (2024). By embracing these future trends, Erasmus Virtual Exchanges can not only expand access but also deepen impact, making them a cornerstone of a more connected and empathetic Europe.

Conclusion

The integration of artificial intelligence in higher education, coupled with the expansion of Erasmus Virtual Exchanges, represents a significant opportunity to advance the EU's 2030 strategic objectives. These developments potentially enhance educational quality, expand accessibility, and develop crucial competencies for an increasingly digital and interconnected society. However, realizing this potential requires addressing substantial challenges related to technological infrastructure, pedagogical innovation, and quality assurance.

As European higher education continues to evolve, a balanced approach that leverages technological innovation while preserving core educational values becomes essential. The most promising path forward involves thoughtful integration of physical and virtual learning experiences, responsible application of AI technologies, and collaborative development of supportive policy frameworks.

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IMPROVING STUDENT MOBILITY THROUGH BETTER COURSE EVALUATION: OUTCOMES OF THE AsCOLA PROJECT

Nikos Liolios, *Department of European Educational Programmes, Aristotle
University of Thessaloniki, Greece, lioliosn@auth.gr*

ABSTRACT

This paper presents the outcomes of the AsCOLA project, which focuses on improving student mobility by developing a comprehensive course evaluation methodology for Erasmus+ students. An online course evaluation tool has been designed and integrated with the Online Learning Agreement (OLA) and the EWP Dashboard through APIs, enabling Higher Education Institutions (HEIs) to collect and analyse student feedback effectively. The project also provides training sessions, support materials, and knowledge resources to ensure effective implementation. Results indicate that the tool enhances transparency, student satisfaction, and institutional collaboration across Europe.

The Vision

The AsCOLA project envisions a European Higher Education Area where student mobility is facilitated by high-quality, transparent, and student-centred course evaluation systems. By integrating digital tools with existing Erasmus+ infrastructures, the project aims to make course evaluation a central element of quality assurance and mobility support. The project specifically targets the digitalization and enhancement of the quality framework of Erasmus+ student mobility, equipping Higher Education Institutions with the necessary tools to improve the learning experience of students.

The Consortium Expertise

The AsCOLA project has been implemented by a multidisciplinary consortium of five partner organizations, each bringing unique expertise to ensure comprehensive coverage of both pedagogical and technological aspects:

- **Aristotle University of Thessaloniki (AUTH), Greece** - Project coordinator, providing academic leadership and pedagogical expertise
- **European University Foundation (EUF)** - Contributing technical integration expertise and Erasmus+ network connections
- **Eötvös Loránd University (ELTE), Hungary** - Bringing extensive experience in international mobility and quality assurance
- **Risbo B.V., Netherlands** - Providing research and evaluation methodology expertise
- **Erasmus Student Network (ESN)** - Representing the student perspective and ensuring user-centered design

This diverse partnership ensures that the tool meets the needs of all stakeholders: students, faculty members, and Higher Education Institutions across the European education landscape.

The Main Results

The AsCOLA project, running from February 2023 to May 2025, has produced several key outcomes:

- **A robust evaluation methodology** for courses offered to Erasmus+ students, developed through comprehensive desk research mapping current evaluation methods in Higher Education
- **An online course evaluation tool** (available at <https://ascola.eu>) connected to the Online Learning Agreement (OLA) and accessible via MyAcademicID authentication
- **API functionality integrated** within the Erasmus Without Paper (EWP) Dashboard, enabling seamless data exchange and interoperability
- **Comprehensive training materials** including user guides, video tutorials, and support resources for both students and institutions
- **Quality integration** into the EWP Network data exchange, ensuring that quality aspects of student mobility are reflected in inter-institutional communications

Target Beneficiaries

The AsCOLA project addresses the needs of three main stakeholder groups:

Erasmus+ Students: International mobile students gain a voice in shaping the learning experiences of host institutions for future generations, with access to peer reviews to make informed course choices.

Higher Education Institutions: HEIs can better monitor and assess their institutional performance in education activities related to their internationalization strategy and policy, with access to aggregated results and data export capabilities.

Faculty Members: Academic staff have seamless access to evaluation of the courses included in the Online Learning Agreements, enabling continuous improvement of their teaching practices.

Importance of the Evaluation Tool

The online course evaluation tool provides students with a simple and accessible means to give feedback on their learning experiences abroad. This contributes to improved transparency, quality assurance, and the exchange of best practices among institutions. The integration with OLA and EWP ensures scalability and sustainability within the Erasmus+ framework, making it a central component of quality-driven mobility management.

The tool operates both as a web application for direct student access and as an API for integration with existing institutional systems, ensuring flexibility and broad adoption potential.

Comprehensive Support Materials and Knowledge Base

To ensure effective adoption and sustainable implementation, the project has developed extensive support resources:

For Students:

- [Students' Guide: How to use the evaluation tool](#)
- [Video Tutorial: How to submit an evaluation](#)
- [Video Tutorial: How to check reviews](#)

For Higher Education Institutions:

- [HEIs' Guide: How to use the evaluation tool](#)
- [HEIs' Guide: How to analyse the results](#)
- Train the trainer material for HEIs: [Outline](#), [manual](#) and [presentation template](#)
- Institutional tutorials for data analysis and export functions
- API documentation for system integration

Additional Resources:

- Comprehensive [Knowledge Base](#) and Q&A system for continuous support
- Best practices reports on evaluation methods in higher education
- Technical documentation for developers and IT administrators

Live Demos During the ERACON Conference

A central highlight of the AsCOLA presentation during the ERACON 2025 Conference was the live demonstration of the course evaluation tool. The demo showcased two complementary perspectives:

Student Perspective Demo

Participants accessed the AsCOLA platform via <https://ascola.eu> using MyAcademicID authentication. The demonstration guided attendees through:

- Secure login process using existing academic credentials
- Step-by-step evaluation submission workflow
- Navigation of the user-friendly interface
- Consulting existing peer reviews to make informed course choices
- Understanding the evaluation criteria and rating system

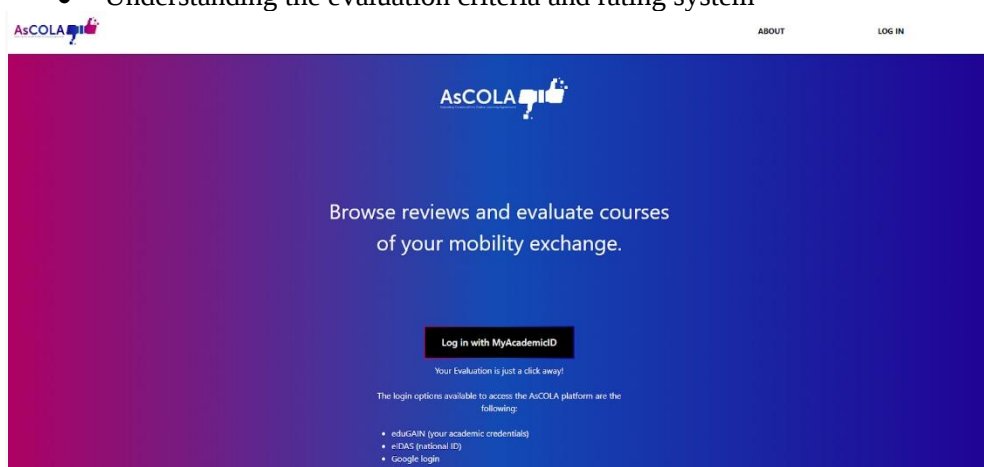


Figure 1 - Student login interface showing seamless MyAcademicID integration

Figure 2 - Interactive evaluation form with comprehensive rating categories

All evaluations

Here you can browse courses evaluations. Search by entering the exact full title of the course or the course code, click on the class you're interested in and access feedback submitted by previous exchange students.

☐ Search by course code

COURSE TITLE	COURSE CODE	ACADEMIC TERM	ECTS
Business Administration	BA100-01	First semester (Winter/Autumn)	5
HTML I	HTML01	First semester (Winter/Autumn)	6
Math	1567	First semester (Winter/Autumn)	6
Mathematics	1234	First semester (Winter/Autumn)	5
Mathematics II	MATH-102	First semester (Winter/Autumn)	0
Mathematics for Computer Science	MATH-1010	First semester (Winter/Autumn)	5
Programming Languages I	PL123	First semester (Winter/Autumn)	5

Rows per page: 10 ▾ 1-7 of 7 < >

Figure 3 - Student view of peer reviews and course recommendations

Institutional Perspective Demo

Using the Erasmus Without Paper (EWP) Dashboard, participants logged in with test credentials to experience:

- Administrative access to aggregated evaluation results
- Real-time monitoring of student feedback
- Data export functionality
- Integration with existing Erasmus+ workflows
- Quality assurance reporting capabilities

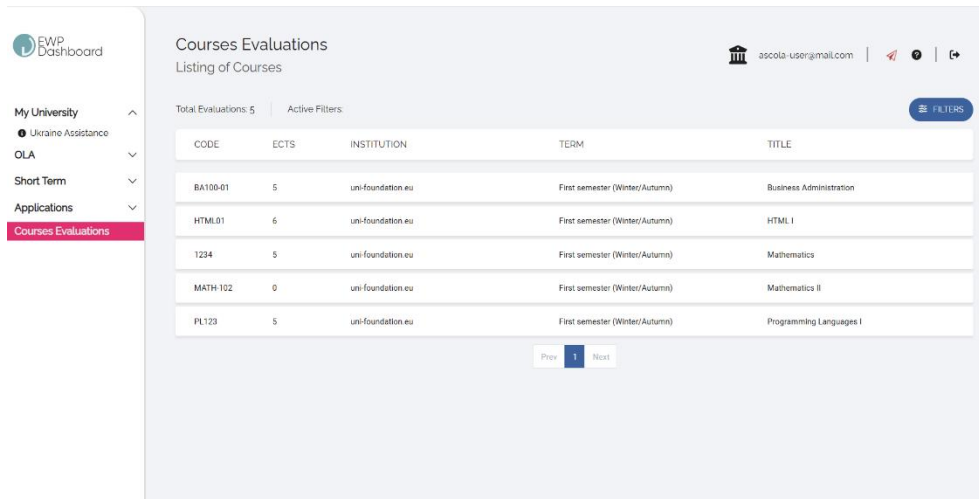


Figure 4 - EWP Dashboard showing AsCOLA integration and data access points

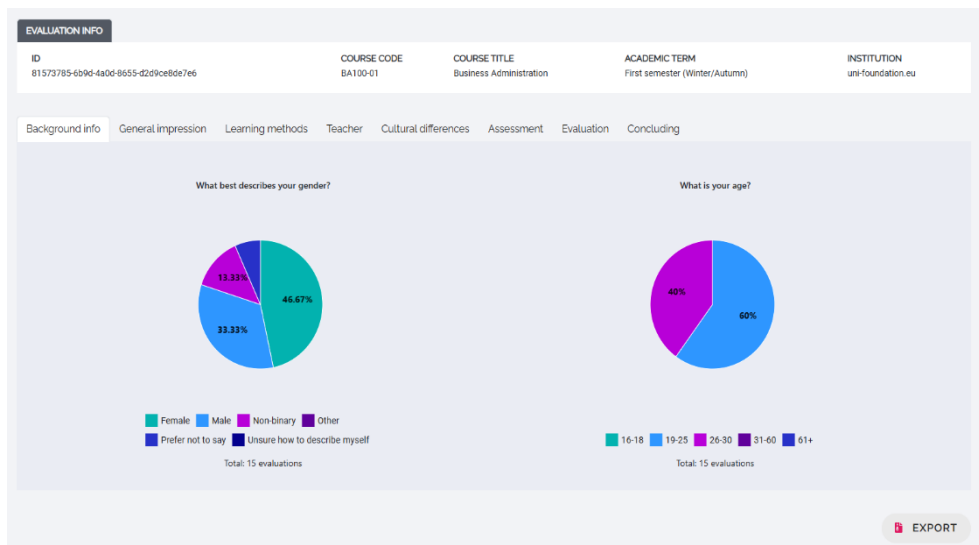


Figure 5 - Comprehensive analytics dashboard for institutional quality monitoring

Demo Impact and Feedback

The interactive demo format provided conference attendees with a first-hand view of the system's usability and its potential to transform mobility management. Key feedback themes included:

- High appreciation for the user-friendly interface design
- Strong interest in the seamless integration capabilities
- Recognition of the transparency benefits for students
- Institutional enthusiasm for quality assurance improvements
- Valuable insights that contributed to platform fine-tuning before wider adoption

Project Timeline and Milestones

The AsCOLA project followed a structured timeline from February 2023 to May 2025:

Phase 1 (2023): Research and methodology development, including desk research on evaluation methods and best practices analysis

Phase 2 (2024): Tool development and blueprinting, including UI/UX design prototypes and technical architecture

Phase 3 (2024-2025): Piloting and testing phase among partner universities, with real-environment functionality and usability testing

Phase 4 (2025): Final implementation, dissemination, and sustainability planning, culminating in the final conference in Brussels

Sustainability and Future Development

The project's integration with existing Erasmus+ infrastructure through the EWP network ensures long-term sustainability. The tool's API-based architecture allows for continuous development and adaptation to evolving institutional needs. Future work will explore scaling up the tool and extending its use to new contexts of international student mobility beyond Europe.

Conclusion

The AsCOLA project demonstrates how digital innovation can enhance the Erasmus+ student experience while strengthening quality assurance mechanisms. By embedding course evaluation into existing mobility infrastructures and providing comprehensive support materials, the project promotes transparency, quality, and collaboration across European Higher Education Institutions. The successful integration with MyAcademicID and EWP systems, combined with positive reception at the ERACON 2025 Conference, positions the tool for widespread adoption and lasting impact on international student mobility.

Disclaimer and Acknowledgments

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ASSESSING THE TERRITORIAL ECONOMIC IMPACT OF ERASMUS+ (2014–2020; 2023–2024): EVIDENCE FROM DESK AND FIELD RESEARCH IN ITALY

Francesca Faggioni, Department of Business Studies, Roma Tre University – Via Silvio D’Amico, 77, 00145 - Rome, Italy. Email: francesca.faggioni@uniroma3.it

Marco Valerio Rossi, Department of Business Studies, Roma Tre University – Via Silvio D’Amico, 77, 00145 - Rome, Italy. Email: marcovalerio.rossi@uniroma3.it

Luisella Silvestri, Italian National Agency Erasmus+ INDIRE – Via Guidubaldo del Monte 54, 00197 - Rome, Italy. Email: l.silvestri@indire.it

ABSTRACT

This research project, conducted by the Department of Business Studies at Roma Tre University in collaboration with INDIRE, assesses the economic and territorial impact of the Erasmus+ Programme (2014–2020 and 2023–2024) on Italian local communities, focusing on the higher education sector (Universities, AFAM, ITS). The study integrates a desk analysis of official data with a field survey, aiming to estimate both the direct and indirect economic effects generated by incoming students during their mobility periods.

The desk analysis elaborates regional data on student inflows, monthly grants, living costs, and average length of stay. It estimates the average spending capacity per student and highlights regional asymmetries in grant adequacy and economic impact, particularly in high-density areas such as Latium, Emilia-Romagna, and Lombardy. The analysis also considers structural variables such as inflation and cost-of-living variations, though cautiously excluded from comparative calculations to avoid distortions caused by uneven student distribution.

The field research collected 1,534 valid responses in 2024 via a structured qualitative questionnaire, enabling a deeper understanding of actual expenditure patterns (e.g. housing, food, leisure, tourism) and their territorial distribution. Qualitative feedback further enriches the analysis by reflecting students’ experiences and perceptions of local contexts.

Overall, the findings reveal that Erasmus+ mobility produces significant but uneven economic returns across Italian regions. The study offers a methodological basis and empirical evidence for informing public policy and promoting more territorially balanced strategies to enhance the local value generated by international student mobility.

Introduction

Since its establishment in 1987, the Erasmus Programme has evolved from a relatively small mobility scheme to the flagship initiative of the European Union in the field of education, training, and youth development. Over the years, it has become not only a symbol of European integration but also a driver of social, cultural, and economic change. With the expansion into Erasmus+ in 2014, the programme was redesigned to reach a broader population of students, teachers, and staff while aiming to enhance Europe's competitiveness through the creation of a highly skilled and mobile workforce.

One of the key objectives of Erasmus+ is to strengthen the European dimension in education by fostering internationalisation and encouraging intercultural dialogue. Yet, as underlined in Regulation (EU) No. 1288/2013, the programme is also expected to generate broader systemic and economic impacts that extend well beyond academic outcomes. Member States and National Agencies are therefore required to conduct evaluation exercises that take into account not only the educational but also the socio-economic effects of mobility.

In the Italian case, the responsibility for monitoring and evaluation lies with INDIRE, the national agency for Erasmus+. Traditionally, the focus of reports has been on academic and institutional results, leaving the economic impact at the territorial level relatively underexplored. While anecdotal evidence and small-scale studies have suggested that incoming Erasmus+ students contribute significantly to local economies—through expenditures on housing, food, leisure, and cultural activities, comprehensive analyses quantifying these effects have been limited.

This paper responds to this gap by presenting evidence from a large-scale research project jointly conducted by Roma Tre University and INDIRE. The study quantifies the direct and indirect economic effects of incoming Erasmus+ students during the 2014–2020 cycle and the first part of the 2021–2027 programme, with particular attention to the years 2023–2024. The analysis aims to answer three main questions:

1. What is the real economic footprint of Erasmus+ incoming students in Italy?
2. How is this footprint distributed across regions, and what disparities emerge in terms of costs, grants, and attractiveness?
3. What policy recommendations can be derived to make the programme more territorially balanced and economically sustainable?

By addressing these questions, the study contributes to both national accountability and the broader European policy reflection on how to maximise the value of Erasmus+ for local communities, not only as an educational but also as a developmental tool.

Methodology

To capture the economic impact of Erasmus+ on Italian territories, the study employed a two-phase mixed-methods approach.

Desk analysis.

The first phase consisted of a desk analysis of secondary data provided by INDIRE, Eurostat, and MIUR. The dataset covered the period 2014–2020, corresponding to the first Erasmus+ programme cycle. Indicators analysed included:

- Number of Erasmus+ incoming students per year and per region;
- Distribution by type of institution (universities, AFAM, ITS);
- Average monthly grant amounts allocated to students;
- Cost of living estimates across Italian regions;
- Average length of stay in Italy.

The desk analysis applied a deductive logic, using territorial segmentation and cross-checking of macroeconomic and institutional variables to estimate average expenditure per student. By aggregating these data, the research team was able to construct a picture of regional disparities in both the distribution of students and the adequacy of grants relative to local living costs.

Field analysis.

The second phase focused on gathering primary data through a national survey. The survey was co-designed with INDIRE and administered between May and July 2024 with the collaboration of Italian universities. A total of 1,632 Erasmus+ students responded, yielding 1,534 valid questionnaires after quality control checks.

The survey consisted of four sections:

1. General profile of the student (age, gender, level of study, sending institution, duration of stay, and host region);
2. Direct expenditures, including rent, utilities, food, transport, and other basic living costs;
3. Sources of additional income, such as family contributions, support from the home institution, personal savings, or part-time work;
4. Indirect expenditures and qualitative reflections, covering areas such as tourism, cultural consumption, and perceived integration into local communities.

The data collection combined quantitative Likert-scale questions with open-ended qualitative items, enabling both statistical analysis and content analysis of students' narratives.

Analytical approach.

The desk and field analyses were integrated by comparing estimated expenditure patterns with actual self-reported spending. Cross-validation allowed for more accurate estimates of the total economic impact and the identification of structural discrepancies between grant provision and real living costs.

Limitations.

Several limitations should be acknowledged. First, expenditure data are self-reported and thus subject to recall bias and rounding errors. Second, the study lacks a control group (such as non-Erasmus international students or domestic students in comparable situations), which would have allowed for a counterfactual analysis. Third, although national in scope, the field survey reflects a higher representation of students in major urban centres, potentially underestimating the experiences of those in smaller or less popular destinations. Finally, while the study acknowledges broader non-monetary spillovers—such as institutional reputation, alumni networks, or intercultural exchange—these were not quantified in monetary terms.

Results**Desk evidence.**

Between 2014 and 2020, Italy welcomed 137,997 Erasmus+ students, including 132,302 in universities and 5,695 in AFAM institutions. However, the distribution of these inflows was far from balanced. Five regions alone—Lazio, Lombardy, Emilia-Romagna, Tuscany, and Veneto—accounted for nearly 68% of total incoming students. This concentration reflects both the presence of prestigious universities and the attractiveness of large metropolitan areas such as Rome, Milan, Bologna, and Florence.

The analysis also highlighted a striking evolution in grant allocations. At the beginning of the cycle in 2014, the average monthly grant was approximately €700. By 2020, however, this figure had declined to around €350, essentially halving in real terms. For most students, grants covered only between 26% and 50% of monthly living expenses, leaving significant funding gaps. These gaps were especially acute in high-cost urban areas: Rome (€1,150/month), Milan (€1,200/month), Bologna (€1,050/month). In contrast, southern cities such as Naples (€850/month) and Palermo (€780/month) remained comparatively more affordable.

Field evidence.

The field survey provides a more detailed picture of actual expenditure behaviour. A large majority of respondents (72%) declared that the Erasmus+ grant alone was insufficient to cover their expenses. To fill this gap, students relied heavily on private resources: 58% received regular support from their families, 16% obtained additional support from their home institution, and 8% drew on personal savings.

On average, Erasmus+ students required an additional €600 per month to meet their living expenses, with variations depending on the region of residence and the type of accommodation chosen. Housing emerged as the single largest expense, often consuming over 40% of total monthly spending. Beyond necessities, students also contributed significantly to the local economy through cultural and leisure activities, ranging from museum visits and concerts to trips to other Italian cities.

The survey further revealed indirect spillovers generated by Erasmus+ mobility. More than 40% of respondents reported hosting family or friends during their stay

in Italy, thereby stimulating local tourism and hospitality sectors. This multiplier effect indicates that the impact of Erasmus+ extends beyond the students themselves to include their networks of visitors.

Discussion

The findings of this study confirm that Erasmus+ mobility generates a substantial economic impact on Italian territories, yet this impact is unevenly distributed. The geographic concentration of student inflows in a limited number of regions reflects broader disparities within the Italian higher education landscape. Universities in Rome, Milan, Bologna, Florence, and Venice benefit disproportionately from incoming flows, while institutions in southern regions and islands capture only a marginal share of mobility.

From a financial perspective, the flat-rate grant system adopted by Erasmus+ appears inadequate to address the real cost of living faced by students. The erosion of grant levels over time, combined with inflationary pressures in housing and urban services, forces students to rely heavily on private and family resources. This dependency raises concerns about social equity and accessibility, as students from less affluent backgrounds may be deterred from participating in mobility programmes in high-cost destinations.

The indirect effects of Erasmus+ are equally important. Tourism generated by visiting friends and relatives, as well as students' engagement in local cultural life, represent significant spillovers for host communities. These impacts highlight the potential of Erasmus+ as a tool for local development, particularly in the context of post-pandemic recovery, where tourism and hospitality sectors have faced major challenges.

Nevertheless, the persistence of regional asymmetries suggests that without corrective measures, Erasmus+ may inadvertently reinforce existing imbalances between northern/central and southern regions of Italy. To align with EU objectives of territorial cohesion, policymakers should consider differentiated grant allocations and targeted incentives to encourage mobility to underrepresented areas.

Conclusion and policy implications

This study offers one of the most comprehensive assessments of the economic impact of Erasmus+ on Italy to date. By integrating desk and field data, it provides robust evidence that the programme generates significant but uneven benefits across regions.

Key conclusions include:

- Erasmus+ students contribute considerably to local economies through direct and indirect expenditures, especially in housing, food, and leisure.
- Grant allocations are insufficient to cover living costs, particularly in metropolitan areas, forcing reliance on family and other private sources of income.

- Regional disparities remain stark, with the majority of inflows concentrated in a handful of northern and central regions, while southern regions and islands are underrepresented.

Based on these findings, three policy recommendations are proposed:

- Regionalised grant brackets. Adjust Erasmus+ grant levels according to local cost-of-living indices, ensuring that students in expensive cities receive adequate support while maintaining affordability in less costly destinations.
- Incentives for peripheral mobility. Promote mobility towards southern and peripheral regions through targeted funding, institutional partnerships, and marketing strategies that highlight the cultural and lifestyle advantages of these areas.
- Broader impact assessment. Extend monitoring frameworks to capture not only direct financial flows but also indirect and intangible benefits, such as tourism spillovers, intercultural integration, and alumni relations.

Future research should expand the analysis to the entire 2021–2027 Erasmus+ cycle, conduct comparative studies with other EU member states, and develop methodologies to quantify non-economic spillovers. Such efforts will provide a more holistic understanding of the programme's value and ensure that Erasmus+ continues to serve as both an educational and developmental driver for Europe.

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BUILDING THE FUTURE OF COURSE CATALOGUES

Hariklia Tsalapatas, *Department of Electrical and Computer Engineering, University of Thessaly, Sekeri – Heyden Str, Pedion Areos, Volos, htsalapa@uth.gr*

Olivier Heidmann, *Department of Electrical and Computer Engineering, University of Thessaly, Sekeri – Heyden Str, Pedion Areos, Volos, ohheidmann@uth.gr*

Manuel Caeiro Rodriguez, *atlanTTic Research Center for Telecommunication Technologies, Universidade de Vigo, Campus-Universitario S/N 36310, Vigo mcaeiro@det.uvigo.es*

Dimitri Ziogas, *Department of Electrical and Computer Engineering, University of Thessaly, Sekeri – Heyden Str, Pedion Areos, Volos, diziogas97@gmail.com*

ABSTRACT

Student mobility under Erasmus+ is central to the European Higher Education Area. Yet, students often face obstacles in selecting institutions and securing academic recognition due to fragmented, outdated, and non-interoperable course catalogues (CCs). This “information gap” complicates student decision-making and burdens academic coordinators. The Erasmus+-funded project Digitising Academic Catalogues for Enhanced Mobility (DACEM) addresses these challenges by co-creating an open-source, multilingual, and interoperable digital platform. Emphasising usability, transparency, and inclusiveness, DACEM enables students to search, filter, and compare courses, while providing staff with standardised data for recognition and credit transfer. This paper presents the project’s rationale, co-creation methodology, and architecture, showing how DACEM re-engineers CCs to reduce uncertainty, strengthen recognition, and enhance equity in Erasmus+ mobility.

1. Introduction

The Erasmus programme, initially launched in 1987 under the acronym European Region Action Scheme for the Mobility of University Students, was designed to promote academic exchange and intercultural learning by enabling students to pursue part of their studies at partner institutions across Europe. Since its inception, Erasmus has become one of the most significant mobility schemes in higher education worldwide, offering students unique opportunities to enrich their studies and broaden their cultural horizons (Papatsiba, 2006; European Commission, 2023). While initially limited to European Union (EU) member states, the programme progressively expanded to associated and partner countries beyond Europe, reflecting the global dimension of higher education cooperation.

Institutionally, Erasmus has evolved through several policy frameworks. In 1995, it became part of the Socrates programme, and in 2007 it was integrated into the Lifelong Learning Programme (LLP). A significant reform occurred in 2014, when Erasmus+ was launched to consolidate all EU education, training, youth, and sport initiatives under one umbrella. Erasmus+ not only continued to promote mobility but also sought to enhance the quality and strengthen the European dimension of higher education through transnational cooperation, transparency, and improved recognition of qualifications (European Commission, 2014; Kehm, 2019).

From its inception, the Erasmus programme has been underpinned by fundamental principles and instruments that make mobility operational:

- **Course catalogues (CCs):** A key reference point for both sending and host institutions, enabling the comparison of academic offers and the identification of equivalent study opportunities.
- **Inter-institutional bilateral agreements:** These agreements define the availability of modules and courses in advance, ensuring students can realistically select a study pathway abroad.
- **Learning agreements:** These are signed by the student and sending and receiving institutions before the mobility begins and require up-to-date and transparent course catalogue information.

Despite its achievements, Erasmus+ has faced persistent structural challenges. For 36 years, generations of students have reported difficulties accessing accurate, transparent, and comparable information on host institutions' academic offerings. Surveys reveal that many course catalogues are incomplete, not updated regularly, or inconsistent in format, making it difficult for students to choose suitable destinations or prepare learning agreements. Typical student concerns include unclear or outdated course descriptions, lack of information on evaluation mechanisms, insufficient guidance on enrollment procedures, and inconsistencies in workload and credit allocation (ESN, 2021; Wächter, 2014).

These limitations are not only a matter of convenience but also directly affect recognition processes. According to the 2021 Erasmus Student Network (ESN) Survey, fewer than 80% of Erasmus students reported receiving full recognition of their study achievements abroad, well below the target of automatic recognition set by the European Education Area (ESN, 2021). Such shortcomings hinder the programme's capacity to achieve its full potential regarding equity, transparency, and academic integration across borders.

Against this backdrop, the Erasmus+-funded project Digitising Academic Catalogues for Enhanced Mobility (DACEM) was launched to tackle the persistent challenges surrounding course catalogues in higher education. DACEM aims to provide a sustainable, open-source, multilingual, and interoperable platform for course information that ensures institutions can deliver accessible, complete, consistent, and up-to-date data. The project contributes to greater transparency, efficiency, and trust in academic mobility by re-engineering course catalogues and aligning them with European interoperability standards.

2. Needs analysis on facilitating student mobility through Erasmus+

The Erasmus Charter for Higher Education (ECHE) Monitoring Guide (European Commission, 2023a) highlights the role of course catalogues (CCs) in ensuring transparency and quality in mobility. Institutions must publish and regularly update CCs well before mobility periods, while Erasmus+ National Agencies monitor criteria such as timely publication, completeness, accessibility, and availability in widely spoken languages.

Despite these requirements, digitising CCs remains difficult due to decentralised academic cultures, technical complexity, and limited resources (Kehm, 2019; Wächter, 2014). Many HEIs still rely on static PDFs or fragmented web pages that are rarely interoperable or multilingual (European Commission, 2015). This undermines transparency and complicates learning agreements.

The Erasmus Student Network (ESN, 2021) reports frequent student complaints about outdated or inaccessible information, while alliances such as EUF and Athena stress the need for interoperable tools to coordinate curricula (Reichert, 2019).

DACEM responds to these challenges by addressing key needs:

- **Transparency:** Clear and consistent course information.
- **Mobility:** Comparability and recognition of achievements.
- **Efficiency:** Streamlined workflows for staff.
- **Accreditation:** Reliable data supporting quality assurance (ENQA, 2015).

By tackling these needs, DACEM contributes to the European Education Area and the Digital Education Action Plan 2021–2027 (European Commission, 2020), advancing transparency, inclusiveness, and the digital transformation of HEIs.

3. DACEM objectives

The main objective of the DACEM project is to enhance student mobility within European higher education institutions by addressing long-standing challenges in the accessibility, usability, and interoperability of course catalogues. In line with the principles ECTS Users' Guide (European Commission, 2015), DACEM aims to modernise CCs through digitalisation, standardisation, and integration with existing European infrastructures, thereby strengthening transparency, recognition, and comparability of qualifications across borders.

This overarching objective can be articulated through the following specific goals:

Mapping the current landscape of course catalogues

Conducting a comprehensive analysis of the state of CCs in European HEIs, with particular attention to institutional practices, technical limitations, and recurring problems in maintaining timely and up-to-date course information (Wächter, 2014).

Developing technical guidance and standards

Offering clear recommendations to institutions on how to design and maintain digital CCs that ensure accessibility for end-users, consistency of content, operational timeliness, and interoperability with other systems, including Erasmus Without Paper (EWP) and the Online Learning Agreement (OLA).

Creating an open-source digital solution

Designing a flexible CC platform supporting the effective management of course digital descriptions and providing application programming interfaces (APIs) to facilitate seamless integration with mobility tools and institutional information systems (Reichert, 2019).

Optimising administrative workflows

Streamlining processes in accordance with ECTS guidelines, enhancing the efficiency of academic and administrative staff responsible for course data management. This reduces redundancies, limits errors, and supports sustainable digital practices in higher education administration.

Improving student experience

Ensuring CCs are more useful, transparent, and reliable for students preparing for mobility. This includes more explicit course descriptions, up-to-date evaluation and enrollment details, and improved comparability between institutions, empowering students to make better-informed academic choices (ESN, 2021).

Leveraging new technologies

Exploring the potential of advanced tools, such as semantic web technologies, to improve the management, searchability, and personalisation of course catalogue data, supporting more innovative and more efficient mobility processes (Veletsianos, 2020).

Supporting European University alliances

Facilitating joint educational offers by enabling interconnected CC instances through API implementation. This reduces redundant data entry across repositories and strengthens collaboration with the European Universities Initiative (European Commission, 2022).

These objectives support the creation of a more interconnected European Higher Education Area (EHEA), where the ECTS framework fosters transparency, recognition, and comparability of qualifications (Kehm, 2019). By digitising course catalogues in line with ECTS, HEIs can improve mobility, recognition, and institutional capacities for quality assurance and resource management. DACEM also contributes to the digital and green transitions outlined in the Digital Education Action Plan 2021–2027 (European Commission, 2020), ensuring course information

is accessible, consistent, and inclusive. In doing so, it enhances equity and opens mobility opportunities for diverse student groups, moving towards a more sustainable, transparent, and student-centred European higher education system.

4. Methodology

The DACEM project adopts a co-creation methodology that places students and academic staff at the centre of platform design. Co-creation in higher education ensures that solutions are robust, relevant, and aligned with stakeholder needs (Bovill & Woolmer, 2019; Healey, Flint, & Harrington, 2014). By involving end-users throughout the lifecycle, DACEM enhances the usability and sustainability of its course catalogue solution.

The framework consists of three components:

- **Qualitative research:** Interviews and focus groups with students, coordinators, staff, and administrators to capture experiences of mobility and course management challenges (Klemenčič, 2016).
- **Mapping studies:** A review of CC systems across HEIs, assessing structures, formats, accessibility, and alignment with the ECTS Users' Guide (European Commission, 2015).
- **Comparative analysis:** Cross-country study of practices in Estonia, France, Greece, Hungary, Portugal, Slovenia, and Spain, highlighting differences between centralised and decentralised approaches (Teichler, 2017).

Findings show that students need transparent, filterable, multilingual, and mobile-friendly catalogues; coordinators require interoperability with Erasmus Without Paper (EWP) and Online Learning Agreements (OLA); and many HEIs lack the resources to redesign their CCs independently.

This mixed-method approach ensures DACEM's outputs are evidence-based, adaptable across diverse contexts, and aligned with the European Higher Education Area (EHEA) and the European Education Area (EEA) goals.

5. Platform design and architecture

The architecture of DACEM platform has been designed to balance openness, scalability, interoperability, and usability, in line with the digitalisation goals set out by the European Higher Education Area (EHEA) and the Digital Education Action Plan 2021–2027 (European Commission, 2020). The technical design ensures that institutions of varying sizes and capacities can adopt the platform through on-premise deployment or cloud-based services. Core design principles of the platform implementation include:

Open-source foundation

The platform is built as an open-source solution to foster transparency, adaptability, and long-term sustainability. Open-source approaches in higher education digitalisation ensure that institutions retain control over their data and can adapt the system to their local needs while contributing to a collective knowledge base (Reichert, 2019).

Standards compliance and interoperability

The architecture supports interoperability with Erasmus Without Paper (EWP), Online Learning Agreements (OLA), and the Network of Recognition of Modules (NORM) to align with European mobility infrastructures. Adherence to standards such as the ECTS Users' Guide (European Commission, 2015) and FAIR principles for data management (Wilkinson et al., 2016) ensures that course information is structured, machine-readable, and reusable across institutional and national systems.

User-centered design

The system prioritises accessibility, multilingualism, and mobile responsiveness. Informed by stakeholder feedback, the architecture integrates features allowing students to filter, compare, and access course information seamlessly, ensuring that staff interfaces are intuitive and efficient.

Technical stack

The DACEM platform architecture integrates widely used, robust technologies:

- **Content Management System (CMS):** Drupal 10, providing modularity, multi-site support, and extensive APIs for integration.
- **Backend:** PHP 8.3 and MariaDB 10.6+, ensuring reliability, security, and scalability.
- **Frontend:** Bootstrap and JavaScript frameworks for responsive, mobile-friendly user experiences.
- **Deployment options:** Flexible architecture enabling both on-premise HEI-managed hosting and cloud-based solutions.

This stack was chosen to ensure broad institutional uptake, reduce technical barriers to adoption, and guarantee compatibility with existing IT infrastructures (Open Source Initiative, 2022).

Functional layers

The architecture consists of three interrelated layers:

- **Data layer:** Structured storage of course information in machine-readable formats, supporting multilingual content and metadata aligned with ECTS descriptors (learning outcomes, credits, workload, and assessment).
- **Application layer:** APIs for integration with mobility tools (EWP, OLA), data validation services, and workflows for catalogue maintenance. This layer supports automated updates and reduces redundancies in administrative processes.
- **Presentation layer:** User-facing interfaces for students, coordinators, and staff. This includes multilingual search and filtering tools, responsive design for mobile use, and dashboards for academic staff managing catalogue entries.

Security and sustainability

Security is embedded throughout the architecture, with measures to prevent SQL injection, cross-site scripting (XSS), and role-based authentication to protect sensitive data. Compliance with GDPR protect personal and institutional data (European Data Protection Board, 2021).

Sustainability is achieved through modular design, allowing HEIs to integrate additional functionalities (e.g., semantic search, big data analytics) without disrupting core services. This future-proofing approach aligns with calls for flexible and adaptive infrastructures in higher education digitalisation (Gaebel et al., 2021).

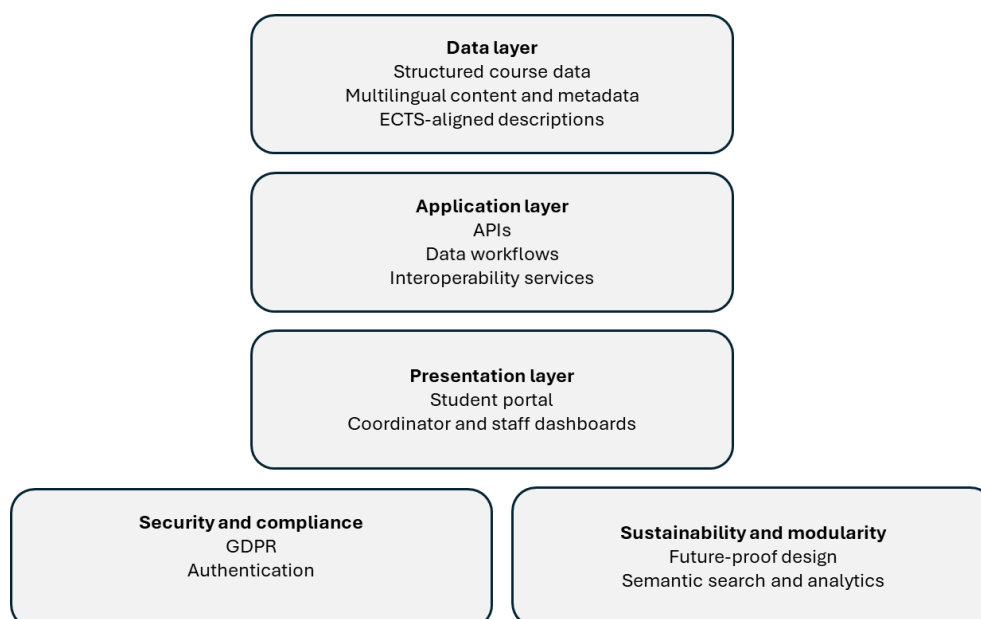


Figure 1. DACEM system architecture.

6. Conclusion and call to action

The DACEM project addresses a core barrier to Erasmus+ mobility: the lack of transparent, accessible, and interoperable course catalogues. By closing this gap, DACEM advances the goals of the European Education Area, promoting transparency, recognition, and inclusiveness. It enhances academic planning with structured, multilingual data, strengthens credit transfer through standardised formats, improves accessibility, and builds student confidence with reliable information. More than a technical tool, DACEM is a step toward higher education's digital transformation, offering an open-source, co-created, and sustainable platform that supports students, staff, and Europe's digital and green transitions.

Acknowledgment

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FROM MANUAL WRITING TO AI MENTORSHIP: HOW THE AI TOOL CALLED MILES BRIDGES KNOWLEDGE GAPS IN ERASMUS+ PROJECT DEVELOPMENT

Igor Razbornik, SMART Institute, Salovci, Slovenia, igor.razbornik@gmail.com

Sanja Todosijević, SMART Institute, Salovci, Slovenia, sanja1todosijevic@gmail.com

ABSTRACT

Over the last two decades, Erasmus+ project writing has transitioned from time-intensive, mentor-led drafting into a faster, more inclusive process shaped by artificial intelligence (AI). This paper presents a longitudinal case study documenting the evolution through three phases: traditional manual mentorship, structured AI prompting via the Idea Development Bricks, and dialogic mentorship through an AI tool called Miles. Developed from 25+ years of Erasmus+ experience, Miles functions not as a template generator but as a strategic thinking partner, supporting users with real-time feedback, logic checks, and iterative co-creation grounded in Erasmus+ evaluation criteria.

This shift mirrors broader trends in AI-supported education, where tools like Miles align with pedagogical calls for more personalised, interactive, and scalable learning environments (Luckin et al., 2016). In parallel, the European Commission has formally encouraged the digitalisation of Erasmus+ processes, including adopting AI, as part of its strategic agenda to broaden access, ensure consistency, and reduce administrative burden (European Commission, 2025).

Drawing on data from over 400 participants across Europe, this paper demonstrates how dialogic AI mentorship improves proposal structure, reduces development time, increases user confidence, and supports under-resourced institutions previously limited to expert mentors. It offers practical insight into how educators and project writers can apply AI not simply as a tool for automation, but as a partner in strategic thinking, inclusion, and quality improvement.

Keywords: Erasmus+, AI mentorship, project writing, co-creation, proposal development, capacity building, educational innovation

1 INTRODUCTION

Erasmus+ has long been a cornerstone of cross-border collaboration, innovation, and learning in European education. Yet, writing competitive and compliant project proposals remains among the most challenging aspects for institutions and educators. For newcomers, the steep learning curve associated with understanding Erasmus+ criteria, strategic impact, and structural coherence often results in lost opportunities (European Commission, 2024).

Over the past decade, the digitisation of proposal development tools has begun to reshape how institutions write and manage projects. However, the emergence of Artificial Intelligence (AI) tools marks an increase in efficiency and a shift in the pedagogy of project writing. With the rise of Transformational AI (Razbornik & Todosijević, 2024), educators and project coordinators are no longer limited to static templates or impersonal automation. Instead, new systems like Miles offer dynamic, responsive mentorship that mirrors human experts' logic, strategy, and evaluation process.

This paper aims to document and analyse the pedagogical transformation of Erasmus+ project writing through the results of a three-phase longitudinal case study. The study addresses how each phase contributed to proposal development efficiency, learner empowerment, and institutional scalability. It further investigates how Miles's dialogic AI mentorship model represents a shift from AI as a writing tool to AI as a thinking partner.

The methodology integrates experiential and dialogic pedagogical frameworks. It employs a mixed-methods approach, combining survey data, observational records, success metrics, and usage logs from institutions in Portugal and Bosnia and Herzegovina. The findings aim to inform researchers and Erasmus+ practitioners on leveraging AI mentorship for higher-quality proposals, faster turnaround, and sustainable staff development.

2 METHODOLOGY: CASE STUDY AND PEDAGOGICAL FRAMING

This study uses a longitudinal multiple-case approach (Yin, 2017), analysing three training models applied over five years across diverse educational settings. The methodological framework is grounded in experiential learning theory (Kolb, 1984) and dialogic pedagogy (Alexander, 2020), treating project writing as both a product and a learning process.

Data sources include:

- Observations and internal reports from over 200 trainees across six countries between 2019 and 2025.
- Performance analytics (writing time, success rates) from Erasmus+ applications developed during each phase.
- Feedback interviews and surveys from training participants

- AI usage logs from Miles, tracing user progression, reasoning challenges, and feedback loops.

In Phase 1, data was collected over four years from online training sessions structured as "10 Teams, 10 Weeks," involving 163 teams with one to three persons per team, located across Europe without specific geographical preference.

Phase 2 involved over two years of data collection from 15 different face-to-face training sessions, each a four-day intensive program from 9:00 AM to 5:00 PM, with 231 participants.

Phase 3, while currently consisting of only one round of online training for using Miles, has already shown significant improvements in project writing technique, time savings, and project quality among participants.

Evidence from surveys and interviews was exclusively collected using online surveys featuring open-ended questions. This approach allowed participants to provide detailed feedback on their experience with each methodology, including their feelings about the process, specific problems encountered, and suggestions for future improvement, avoiding the potential bias of Likert scale questions. Semantic analysis was then applied (Braun & Clarke, 2006) to the qualitative data to identify recurring themes and isolate specific feedback elements relevant for improving future system development.

A mixed-methods design triangulated quantitative (e.g., time savings, success rates) with qualitative (user confidence, clarity, and strategic depth) metrics. Institutional case studies, including Universidade da Beira Interior (Portugal) and International Burch University (Bosnia and Herzegovina), were selected to reflect diverse experience levels and geographic reach.

3 PHASES IN PROJECT WRITING METHODOLOGY

In this model, participants were immersed in the full lifecycle of project writing: understanding Erasmus+ priorities, formulating project objectives, aligning activities with expected outcomes, and developing work packages. However, the time and resource demands were high. On average, project development took between 10 and 12 weeks, often involving multiple reviewers, edits, and feedback loops.

Phase	Year	Avg Time to Write	Support Type	Pedagogical Model
1	2019	10–12 weeks	Human mentor (no AI)	Experiential
2	2023	4–10 days	AI Prompts + peer feedback	Structured scaffolding
3	2025	<1 day	AI Mentor (Miles)	Dialogic mentorship

Table 1: Timeline of AI Integration in Erasmus+ Project Development Pedagogy (2019–2025), Authors' elaboration

3.1 PHASE 1: MANUAL WRITING WITH HUMAN MENTORSHIP

The first phase of the Erasmus+ project writing relied heavily on traditional pedagogical methods rooted in personal mentorship, expert-led workshops, and iterative co-creation. Programs such as “10 Teams, 10 Weeks” delivered longitudinal training in which participants co-developed proposals over an extended period with weekly mentor support.

This approach enabled deep learning and exposed novice writers to real-life challenges, but it lacked scalability and responsiveness to fast-evolving calls. It was particularly burdensome for institutions with limited experience or those unable to access ongoing external mentorship.

Despite these limitations, Phase 1 laid the foundation for a quality-driven, logic-based approach to Erasmus+ writing, embedding key values such as clarity, coherence, and impact alignment that would later be systematised in AI-supported models.

3.2 PHASE 2: STRUCTURED PROMPTING WITH THE IDEA DEVELOPMENT BRICKS

Phase 2 marks a pivotal shift in Erasmus+ project writing, introducing structure and prompting as pedagogical accelerators. Building on the foundational logic instilled during manual mentorship, this phase systematised the proposal development process through modular frameworks such as the Idea Development Bricks.

The Bricks model disaggregated project writing into sequential, interdependent building blocks (e.g., problem definition, objectives, activities, impact, dissemination). Each component became a discrete prompt, allowing AI tools to assist users in completing high-quality text aligned with Erasmus+ criteria. Importantly, prompts were designed to support critical thinking rather than passive completion, ensuring learners remained intellectually engaged with their proposals.

During this phase, workshops focused on training participants to understand and test the logic behind each project component. Participants generated draft responses to AI-generated prompts, iterated through peer and mentor feedback, and gradually improved their reasoning and compliance.

Writing time during this period was significantly reduced, with full proposals often completed in 4 to 10 days. Participants noted improved clarity in how proposal sections interconnect, and training facilitators observed fewer conceptual errors in logic models and outcome descriptions.

However, limitations remained. While prompting increased speed and standardisation, users still needed to interpret and manually adapt AI output. The learning was scaffolded but not deeply dialogic. Prompting offered efficiency, but without full cognitive partnership. This set the stage for Phase 3, where AI would move beyond a tool into a mentor.

3.3. AI MENTORSHIP THROUGH MILES

The third phase in our Erasmus+ project development journey introduces *Miles*, a conversational AI mentor designed to support users in real-time proposal co-creation. Unlike traditional writing tools or static templates, *Miles* functions as a strategic thinking partner, trained on over 25 years of successful Erasmus+ project experience, evaluation feedback, and EU funding logic.

At its core, *Miles* enables users to move beyond pre-written prompts. It engages them in structured dialogue, asking targeted questions, clarifying user ideas, and offering real-time feedback aligned with Erasmus+ criteria. Instead of filling in a form, users co-develop their proposals in conversation with the AI. For example, a user might begin by describing a general idea. *Miles* would then ask:

- “What specific problem does this idea address?”
- “Who will benefit most, and why?”
- “How do your activities connect directly to the desired outcomes?”

This dialogic method mirrors how experienced mentors challenge thinking and guide structure, helping users build logical, fundable proposals. It also adapts dynamically: beginners receive scaffolding and examples, while experienced users are prompted with strategic or evaluative challenges. All conversations are grounded in a 26-step project development model built into *Miles*’ architecture, covering everything from problem definition and SMART objectives to risk assessment and impact planning.

Miles doesn’t just assist with writing. It continuously builds a “canvas” document, a living proposal drafts that updates as the conversation evolves. This eliminates the need for users to copy-paste content or worry about consistency between sections.

Educators, researchers, and coordinators could draft full Erasmus+ proposals in online pilot sessions in less than a day, improving their understanding of proposal logic. Participants reported that *Miles* helped them think more strategically, identify gaps, and revise their ideas on the spot: native language support and a voice interaction mode allowed for smoother collaboration across partners and teams. (Important: While full proposals can be technically completed in one day using *Miles*, the system is intended to support a reflective and iterative development process, not encourage superficial speed).

Miles represents a shift in AI tools: from automation to mentorship and speed to strategic depth. It empowers users to complete proposals faster and better understand them.

4 THE DIALOGIC CONCEPT: HOW MILES FACILITATES LEARNING AND CO-CREATION

Miles operates not as a static information provider but as a dialogic mentor that guides users through Erasmus+ project development via structured, responsive conversation. This pedagogical model combines real-time teaching with co-creation,

allowing users to improve their understanding of proposal logic and produce high-quality draft content simultaneously.

Teaching through Structured Dialogue

Consider a representative example. A user asked, “What does it mean to co-develop the methodology for Strategic Outcome 1?” Instead of providing a generic definition, Miles responded with a series of pedagogically grounded actions:

1. **Validation of the Inquiry**
Miles began by affirming the question's relevance, stating, “Yes, and it’s good you’re asking this now.” This created a safe and encouraging learning space.
2. **Contextual Explanation**
The system then defined “co-developing methodology” within the Erasmus+ context, citing program logic and prior project evaluation practices.
3. **Structured Clarification**
Miles broke the explanation into key components: who is involved, how the process unfolds, and why it is essential for project success.
4. **Theoretical and Strategic Rationale**
It concluded by outlining the underlying reasoning, such as how co-development increases stakeholder buy-in, enhances practical relevance, and supports higher proposal quality.

This teaching process mirrors expert mentorship, helping users understand key proposal elements' operational meaning and strategic purpose (Collins et al., 1989).

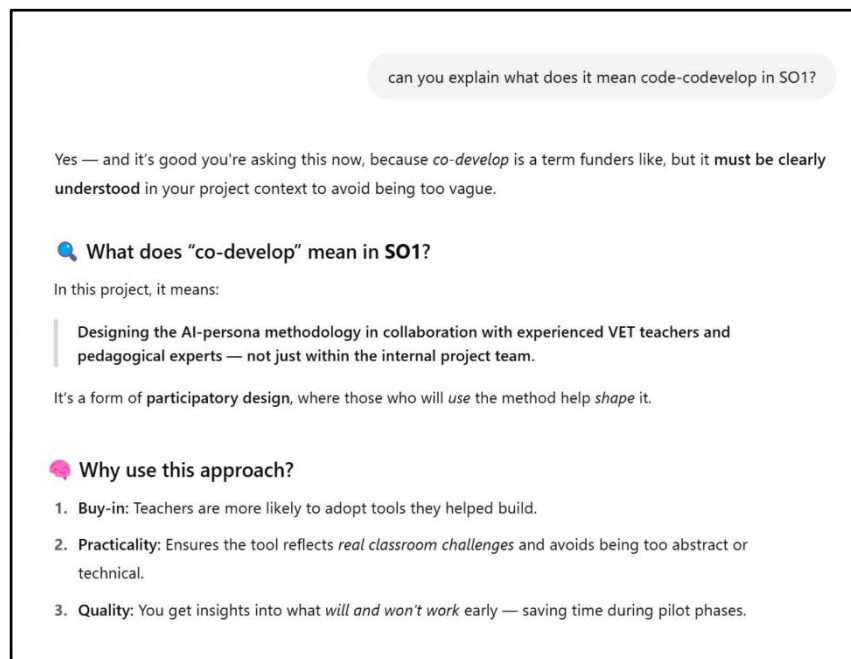


Figure 1: Dialogue with Miles, Authors’ elaboration

Co-creation, embedded in interaction, simultaneously drives and contributes directly to proposal development. *Miles* integrates clarified concepts and structured reasoning into a live proposal draft as the conversation progresses. Users retain agency to confirm, refine, or revise content, but the foundational logic is collaboratively built within the tool's canvas document.

This approach serves dual pedagogical and practical functions. Users learn to think strategically while producing text that aligns with Erasmus+ criteria. Over time, the repeated experience of engaging in such structured dialogue enables users to internalise best practices in project design, reducing reliance on external mentorship.

Rather than teaching through passive instruction, *Miles* supports active knowledge construction. The model is particularly effective for adult learners, as it respects existing expertise while scaffolding areas of uncertainty and provides just-in-time feedback that fosters confidence and clarity.

Why *Miles* Outperforms Generic AI Tools: While general-purpose AI systems like ChatGPT can assist with drafting text, their effectiveness is limited in complex, compliance-driven environments such as Erasmus+ or Horizon Europe. *Miles* was developed to address these limitations, offering a context-aware, evaluator-aligned mentoring system designed explicitly for EU-funded project development. Its comparative advantages stem from five key areas:

Structured Methodology Enforcement: *Miles* operates within a strict 26-step *process*, ensuring project ideas are logically developed and fully aligned with evaluation requirements. Unlike generic AI, it prevents users from skipping steps or jumping ahead prematurely. This structure enforces coherence across problem definition, objectives, activities, and impact—an approach informed by over two decades of project writing and training experience.

Cognitive Partnership and Strategic Feedback: Rather than functioning as a passive drafting tool, *Miles* engages in dialogic interaction. It challenges unclear logic, probes for missing links, and mirrors the role of a senior mentor using strategies drawn from the Socratic method, cognitive scaffolding, and motivational coaching. By anticipating evaluator scrutiny, it guides users to revise weak points proactively.

Embedded Evaluation Matrices and Programme Logic: *Miles* is not limited to language generation. It incorporates Erasmus+ and Horizon evaluation matrices, including the 2025 Erasmus+ Programme Guide, the KA2 evaluation guide, and Horizon Europe RIA excellence criteria, as part of its internal logic. This allows it to continuously align user input with formal expectations—something that generic AI tools cannot reliably simulate.

Integrated Professional Tools and Templates: The system includes access to established templates and reference materials often known only to experienced writers: activity design models, impact pathways, language guides, logical frameworks, and risk management matrices. These tools are contextually triggered, making them available only when relevant to the user's current stage of development.

Reduction of Cognitive Overload and Improved Efficiency: User data from pilot trainings shows that *Miles* improves quality and reduces time spent on proposal development by 40–60%. Its ability to structure thinking, provide targeted examples, and maintain cross-sectional coherence allows even under-resourced teams to produce competitive drafts with minimal external support.

Feature	Generic ChatGPT	Miles
Knowledge of Erasmus+	General, non-specific	Deep integration of guides and logic
Step-by-step process enforcement	Optional or absent	Mandatory 26-step structured development
Evaluator perspective	Simulated or vague	Built-in from real evaluation matrices
Activity and impact templates	Not included	Embedded and context-triggered
Language and style compliance	Inconsistent	Aligned with official EU writing standards
Pedagogical scaffolding	Absent	Dialogic, just-in-time mentorship
Support for beginners	Overwhelming outputs	Guided reasoning, confidence-building
Proposal consistency	Fragmented	Maintains live canvas with internal logic
Time efficiency	Unpredictable	40–60% reduction in writing time (documented)

Table 2. The Synthesises of the Comparative Advantages Across Key Functional Dimensions, Authors' elaboration

By combining pedagogical guidance, regulatory alignment, and process structure, *Miles* exceeds the capabilities of generic AI systems. Its integration into the Erasmus+ project writing represents a technical upgrade and a transformation in how project ideas are shaped, evaluated, and communicated.

5 PEDAGOGICAL AND STRATEGIC IMPLICATIONS

The transition from traditional mentorship to AI-supported project writing represents a technological innovation and a pedagogical transformation. The three-phase model described in this study illustrates how integrating structured prompting and dialogic AI mentorship progressively enhances learning and output quality in Erasmus+ proposal development.

Quantitative and qualitative data collected across the three phases indicate marked improvements in key dimensions: development time, proposal structure, user confidence, and understanding of Erasmus+ logic. These metrics are visualised in a longitudinal trend diagram (Figure 2), which illustrates the progression from slow, mentor-dependent writing to fast, autonomous co-creation supported by real-time AI feedback.

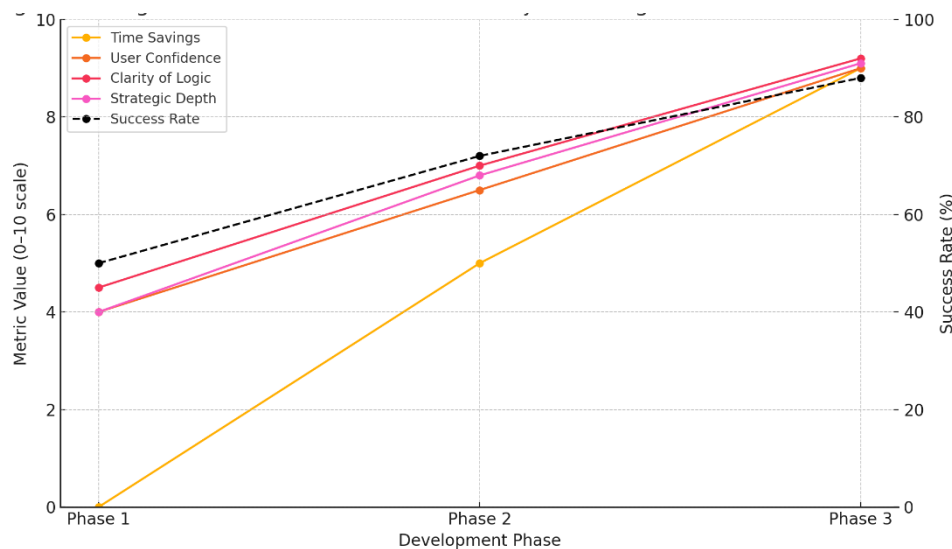


Figure 2: Longitudinal Evolution of Erasmus+ Project Writing Metrics Across Three Phases, Authors' elaboration

In Phase 1, participants relied heavily on direct human mentorship over 10 to 12 weeks. While this enabled deep learning, it was resource-intensive and limited in scalability. Phase 2 introduced structured logic via the Idea Development Bricks framework, significantly reducing writing time and increasing clarity. However, the interaction remained largely one-directional, with AI acting as a prompt generator rather than a reflective partner.

Phase 3 marks a significant pedagogical shift. With the introduction of Miles, project development became dialogic, iterative, and cognitively demanding. Users engaged with the AI as a strategic interlocutor capable of questioning assumptions, suggesting improvements, and verifying structural alignment with Erasmus+ criteria. Unlike passive completion models, this approach requires users to actively reflect on design choices, revise content, and justify decisions. The result is both faster proposal development and deeper internalisation of project logic.

Miles enables users to operate at a higher cognitive level by automating lower-order writing tasks and redirecting attention toward strategic thinking. By reducing the need for copy-pasting, formatting, and document navigation, the tool allows users to

concentrate on framing problems, defining outcomes, and aligning activities with broader policy priorities. This change in workflow significantly increases both efficiency and conceptual precision.

Significantly, this transformation shifts the role of the project writer. In earlier models, writers were often passive implementers, guided by templates or expert feedback. In the dialogic model, they become active designers responsible for strategic coherence, quality assurance, and partnership alignment. AI acts not as a substitute for human expertise but as an extension of it, available continuously and scalable across different contexts.

This shift also addresses key strategic constraints in Erasmus+ project development. Persistent challenges include limited access to expert mentors, uneven institutional capacity, and time pressure. Miles supports inclusive participation and institutional resilience by embedding structural and evaluative logic into an independently useable tool. Under-resourced institutions or new coordinators can now receive guidance equivalent to that of experienced professionals, helping to reduce systemic disparities in success rates.

This transformation is not only technological but also cognitive. Table 2 outlines how the role of the Erasmus+ project writer changes when transitioning from traditional writing models to AI-supported mentorship. Whereas manual drafting required writers to focus primarily on generating text and conforming to formatting demands, the AI-supported model emphasises higher-order skills such as conceptual clarity, strategic alignment, and iterative reasoning. The shift enables users to move from reactive execution to proactive, reflective design, hallmarks of expert-level practice.

Dimension	Traditional Model (Manual or Template-Based)	AI-Supported Model (Dialogic Mentorship with Miles)
Primary Role of the Writer	Content producer and section drafter	Strategic designer and decision-maker
Engagement Mode	Linear, task-driven	Iterative, dialogic, and responsive
Focus of Cognitive Effort	Sentence construction, format alignment, referencing	Structuring logic, defining objectives, and aligning with priorities
Feedback Source	Human mentor (if available)	Real-time AI feedback based on Erasmus+ logic
Proposal Structure Handling	Manually constructed, often fragmented	Continuously updated project canvas with internal consistency
Error Detection and Revision	Post-draft review by peers or mentors	Ongoing logic checks and strategic prompts during development

Learning Approach	Exposure-based, often dependent on mentor availability	Just-in-time, reflective learning embedded in process
Time Management	Heavy on drafting and revisions	More time allocated to conceptual design and refinement
Access to Expertise	Limited, often institution-dependent	Scalable, 24/7 access regardless of institutional size
Agency and Autonomy	Reactive and instruction-following	Proactive and self-directed

Table 3. Cognitive and Functional Shift in the Role of the Project Writer: Traditional vs. AI-Supported Model, Authors' elaboration

In pedagogical terms, the model supports adult learning principles such as self-directed inquiry, iterative reflection, and learning by doing. The system facilitates knowledge construction and skill transfer by offering just-in-time feedback and adapting to the user's level of expertise. It extends its reach rather than replacing human mentoring, enabling more equitable access to high-quality support.

The dialogic AI mentorship model introduced in Phase 3 transforms Erasmus+ project writing into a dynamic, learner-centred process. It provides faster outcomes, higher quality, deeper learning, and institutional scalability.

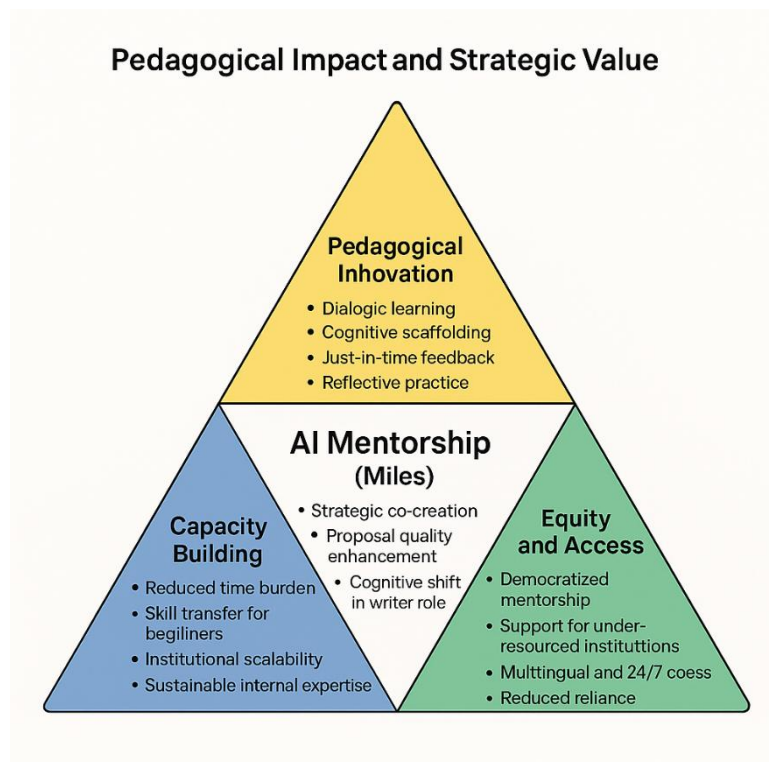


Figure 3: AI Mentorship as a Convergence Point for Pedagogical Innovation, Institutional Capacity Building, and Equity in Erasmus+ Project Development, Authors' elaboration

6 IMPLICATIONS OF THE DIALOGIC MODEL

6.1 CHALLENGES AND LIMITATIONS

While Miles's introduction as a dialogic AI mentor offers clear advantages in speed, structure, and pedagogical support, several challenges and limitations were observed during its development and pilot implementation. These issues are primarily related to user mindset, system maturity, generalizability, and the evolving nature of the project writer's role.

User Mindset and Cognitive Shift: One of the most significant challenges lies in user expectations and mental models. Many participants, particularly those with prior experience in manual or template-based project writing, found it difficult to trust the AI's capabilities fully, similar to research by Visser et al. (2020) on trust in AI. The shift from generating text manually to co-creating strategic content with an AI mentor represents a fundamental change in workflow and cognitive engagement. Users must take a more abstract, decision-oriented role, which some found disorienting initially. This adjustment often involved scepticism, with users attempting to verify the originality or correctness of Miles's suggestions by searching for similar content online.

Overcoming Habits of Linear Writing: Miles facilitates non-linear, conversational proposal development, which contrasts sharply with the conventional, section-by-section drafting approach. Some users initially struggled with the flexibility of dynamically revisiting and modifying earlier sections, especially those trained in linear writing models. This created friction in adoption, particularly during the early stages of use, until users developed confidence in the tool's navigability and internal consistency.

Limited Exposure and Generalizability: Phase 3 of the study, involving Miles, is still in its early stages. While results from pilot trainings in Portugal and Bosnia and Herzegovina were promising, broader implementation across diverse institutional contexts must confirm the model's effectiveness at scale. Cultural, linguistic, and technological variability may influence how well dialogic mentorship transfers across different user groups, especially in under-resourced environments.

Technical and Functional Boundaries: Although Miles performs well in guiding proposal logic, providing real-time structural feedback, and supporting Erasmus+ criteria alignment, it remains under development in some areas. Budgeting modules, multi-user collaboration features, and complex partnership simulations are still underway. Additionally, while the system supports multilingual interaction, translation accuracy may vary, particularly for highly technical or policy-specific language.

No Direct Evaluation Feedback Yet: Because proposals developed with Miles have only recently been submitted, no official evaluator feedback has yet been received. As a result, success rates in Phase 3 are based on internal estimates and alignment metrics rather than verified Erasmus+ outcomes. While promising, these data are provisional, and future validation with formal results will be necessary to confirm impact claims.

Research Design Constraints: The study uses a mixed-methods approach with strong internal logic but is not a controlled experimental design. Observational data, qualitative feedback, and internal performance metrics were triangulated but without a control group or randomized assignment. This limits causal inference, although the observed trends are substantial and consistent.

Miles has demonstrated clear benefits as an AI mentor for Erasmus+ project writing. However, its long-term adoption will depend on effective onboarding, user mindset adaptation, continued system development, and validation across broader institutional settings. These limitations are being addressed through iterative tool refinement, targeted training, and expanded deployment in diverse environments.

6.2 ETHICAL CONSIDERATIONS

The development and deployment of *Miles* as a dialogic AI mentor raise several ethical considerations related to data privacy, user agency, authorship, and long-term responsibility. While the current implementation focuses on a minimum viable product (MVP), these issues are already being addressed through design safeguards and procedural awareness, which are also mentioned in the UNESCO AI Ethics Guidelines.

Data privacy and security are essential, as user inputs to Miles often contain sensitive institutional data, preliminary project concepts, and draft narratives. Data handling protocols have been implemented to mitigate risks and ensure user interactions are securely stored and access controlled. No personally identifiable information is used for training purposes, and data is not shared with third parties. Future development will incorporate additional measures for GDPR compliance, including user-controlled data deletion and anonymisation features.

Transparency and trust are integral to Miles, an AI system that offers formative feedback and strategic advice, directly influencing the content and logic of Erasmus+ proposals. To preserve user trust, the system avoids opaque decision-making. Instead, it explains its reasoning when offering suggestions, citing Erasmus+ criteria, common evaluator feedback, or strategic logic. However, further work is needed to formalise these explanations and make them consistently transparent across all user interactions.

Authorship and responsibility remain key ethical concerns, particularly regarding the attribution of authorship in AI-supported writing. In the case of *Miles*, the AI provides structural guidance, content scaffolding, and contextual feedback, but it does not operate autonomously. The user remains the decision-maker throughout the process. Therefore, responsibility for the final proposal resides entirely with the human author. This model treats *Miles* not as a co-author, but as a pedagogical aid, comparable to a mentor or strategic advisor whose input shapes but does not own the final output.

User mindset and misperceptions emerged as critical factors, with pilot testing revealing a psychological barrier among some users sceptical of Miles' capabilities. The tool's speed and strategic fluency sometimes led to assumptions that it was simply retrieving or rephrasing existing content, prompting users to search online to

verify its originality. This reaction underscores the importance of technical accuracy and user understanding of the system's capabilities and boundaries. Educational onboarding materials and meta-dialogue features are being developed to support user trust and digital literacy.

Equity and access are central ethical considerations, with one of *Miles*' most promising contributions being its potential to reduce structural inequities in Erasmus+ participation. By offering expert-level support regardless of institutional size or geographical location, *Miles* helps democratise access to high-quality proposal development resources. Nonetheless, equitable access also requires attention to digital infrastructure, language support, and user training. Ongoing efforts are focused on improving accessibility features and supporting users across varying levels of digital readiness.

Future directions for ethical safeguards include auditing for potential bias in feedback, enhancing explainability features, and improving transparency into how suggestions are generated. As the system evolves, ethical review processes and user feedback mechanisms will be integral to refining its operations and ensuring responsible use.

In sum, while *Miles* presents significant benefits in efficiency and pedagogical reach, its ethical use depends on clear boundaries, transparent logic, secure data handling, and an emphasis on human agency. The ethical framework for AI mentorship must evolve in parallel with its technical capabilities to maintain trust, equity, and educational value.

7 CONCLUSION AND FUTURE RESEARCH

This study has traced a three-phase transformation in Erasmus+ project development, from manual mentorship to structured prompting and ultimately to dialogic AI mentorship through *Miles*. Each phase reflects a pedagogical and technological advance, aimed at reducing writing time, improving structural logic, and expanding access to high-quality support.

The findings demonstrate that dialogic AI mentorship, as implemented through *Miles*, significantly improves the efficiency and quality of Erasmus+ proposal writing. Unlike tools that automate text generation, *Miles* engages users in active co-creation. It guides thinking, surfaces gaps in logic, and provides formative feedback aligned with evaluator expectations. In doing so, it functions not only as a productivity tool but as a mentor capable of supporting strategic design, critical reflection, and institutional learning.

For educators and Erasmus+ practitioners, this model offers a scalable and inclusive approach to capacity building. Under-resourced institutions, early-career coordinators, and international teams can now access expert-level guidance previously limited to experienced mentors. The result is a more equitable distribution of knowledge and a greater ability to respond effectively to complex funding calls.

Beyond Erasmus+, the model contributes to broader developments in AI in education. It aligns with emerging paradigms such as intelligent tutoring systems,

adaptive learning environments, and AI-facilitated professional development. Unlike static systems, Miles demonstrates the value of dialogic interaction in supporting higher-order thinking, self-regulated learning, and authentic skill acquisition.

Future research should explore several dimensions in greater depth. First, further empirical studies are needed to assess long-term learning outcomes and whether users retain improved project writing skills over time. Second, broader implementation across diverse cultural, linguistic, and institutional settings will help evaluate the model's generalizability. Third, comparative studies with other AI tools would clarify the specific added value of dialogic mentorship.

In addition, the evolving role of the project writer warrants further analysis. As AI tools assume greater responsibility for routine tasks, human writers must shift toward oversight, strategy, and design. Training users for this redefined role will be essential for future capacity-building efforts.

Finally, ongoing development must continue to address ethical dimensions, including data privacy, bias mitigation, and transparency in AI recommendations. As tools like Miles become more widely adopted, ensuring responsible use will be central to maintaining trust and pedagogical integrity.

In conclusion, the transition from manual writing to AI mentorship marks a fundamental shift in Erasmus+ project development. Tools like Miles offer a new model for inclusive, efficient, and high-quality proposal writing by embedding pedagogical intelligence within scalable AI systems. They do not replace human expertise, but extend its reach, enabling a broader community of educators and project writers to participate meaningfully in European cooperation and innovation.

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**THE IMPACT OF BLENDED INTENSIVE PROGRAMS AND
VIRTUAL EXCHANGES: TOOLS FOR INTERNATIONALIZATION
AT HOME ACTIONS AT THE HELLENIC MEDITERRANEAN
UNIVERSITY**

Konstantinos Petridis*

Nikolaos Moraitakis**

George Vardalachakis***

George Kakavelakis****

Emmanuel Lourakis*****

*Professor, Vice Rector of Internationalization & Extroversion, Romanou 3, Chalepa, Chania, Crete, Hellenic Mediterranean University, Email:

cpetridis@hmu.gr

**Ph.D. candidate, Department of Political Science, University of Crete - Scientific Associate at Hellenic Mediterranean University, Email: nemoraitakis@hmu.gr

*** Associate Collaborator, Estavromenos, Heraklion, Hellenic Mediterranean University, Email: vardalachakis@hmu.gr

****Assistant Professor, Department of Electronic Engineering, Romanou 3, Chalepa, Chania, Crete, Hellenic Mediterranean University, Email:

kakavelakis@hmu.gr

***** PhD Candidate, Department of Electronic Engineering, Romanou 3, Chalepa, Chania, Crete, Hellenic Mediterranean University, Email: louromanos@hmu.gr

ABSTRACT

This work examines the Internationalization at Home (IaH) initiatives of Hellenic Mediterranean University (HMU), addressing challenges including low student mobility and the need for global skill development. HMU implements virtual exchanges (VEs)/Collaborative Online International Learning (COILs), and Blended Intensive Programs (BIPs), fostering an inclusive and globally oriented environment. These actions significantly enhance both virtual and physical mobility, enriching the skills of students and faculty alike (e.g., digital literacy, intercultural communication). The institution benefits from enhanced reputation, national ranking, and increased budget. IaH effectively integrates global perspectives into the domestic curriculum for all, demonstrating a transformative approach to internationalization. Despite minor challenges in digital adoption and recognition, it offers practical recommendations for similar institutions. It envisions being the proof of concept that IaH is the future of internationalization in the Greek higher education sector.

Introduction

As an innovative model for internationalization, Internationalization at Home (IaH) represents a critical paradigm shift within higher education, seeking to integrate international and intercultural dimensions into the domestic learning environment for all students, not just those participating in mobility programs [1]. According to the European Association for International Education (EAIE), IaH is defined as "...the **purposeful** integration of international and intercultural dimension into the formal and informal curriculum for all students with domestic learning environments".

IaH is gaining significant attention among academics, policymakers, and international education professionals, and is a key component of European Union (EU) educational policies. One of the primary motivations for IaH stems from the observation that traditional internationalization, particularly through study abroad, often represents an elitist approach due to time constraints, funding limitations, and professional agendas, resulting in many students remaining "at home." Statistical data show that student mobility within the European Educational Area has only reached an average of 9.1%, which is considerably short of the 20% target set for the European Higher Education Area (EHEA) in 2020 [2]. IaH, therefore, seeks to be more inclusive. IaH as an approach aims to achieve greater accessibility and equity in internationalization of learning [3]. This broadened accessibility ensures that a larger proportion of students can develop intercultural competencies essential for navigating an increasingly globalized world, even without physical mobility [4].

This manuscript aims to introduce the impact of BIPs, COILs / VEs as tools for the IaH actions of the HMU in Greece, with a focus on cultivating a global culture within the university community, encompassing undergraduate students, administrators, and faculty members. This comprehensive approach to IaH extends beyond traditional internationalization strategies, which often prioritize student and faculty mobility, to encompass a broader spectrum of international and intercultural learning opportunities within the domestic academic setting [5]. Moreover, this work also reports the impact of BIPs, VEs/COILs on the enhancement of physical reported student and staff mobilities, which is a direct result of them. This impact on physical mobility is reported by HMU, as well as by the collaborating partners in our joint IaH actions.

Ultimately, this research aims to demonstrate how IaH actions as BIPs and VEs/COILs can serve as a powerful tool for decolonizing traditional internationalization paradigms, fostering a genuinely global outlook that is grounded in the local context. This approach enables a more sustainable and equitable model of internationalization, transcending the confines of geographical mobility to foster global citizenship within the domestic educational landscape. This shift is particularly salient in regional institutions, where IaH can reconcile global educational demands with local community needs, fostering a more responsive and regionally relevant approach to internationalization [6].

Literature Review

IaH was defined for the first time as 'any internationally related activity except outbound student mobility' by Benft J. Nilsson, a Swedish Professor and the vice-

rector for International Affairs at Malmö University [7,8]. This initial conceptualization has evolved significantly, particularly with the recognition that IaH encompasses a broader range of activities aimed at integrating international, intercultural, and global dimensions into the formal and informal curricula for all students within their domestic learning environments [9]. This evolution marks a shift from a purely transactional view of internationalization, focused on student mobility, to a more holistic approach that embeds global perspectives directly into the university experience, thereby creating a more accessible pathway to international competencies for all students [10]. This reframing emphasizes the deliberate incorporation of international, intercultural, and global dimensions into the formal and informal curriculum, ensuring that even students not undertaking physical mobility can attain crucial intercultural competence [11, 12].

Key features include embedding internationalized learning outcomes in the compulsory curriculum, not only as electives. Informal activities also support IaH by leveraging classroom diversity for inclusive learning and creating opportunities to engage with “cultural others” locally.

Practical IaH actions include Intercultural Workshops, Buddy Programs, Language Tandems, VEs/COILs, BIPs, Summer Schools, Visiting Professors, International Weeks, Talks, Conferences, Erasmus Days, Student Debates, and Peace Education. VEs consist of online people-to-people activities that promote intercultural dialogue and the development of soft skills [13, 14, 15]. In the USA, ‘COIL’ (Jon Rubin, SUNY) refers to students engaging in structured online intercultural dialogue within their courses, facilitated by trained moderators. Digital platforms replicate aspects of physical mobility. Unlike virtual mobility, which means taking online courses at other institutions, VE focuses on dialogue and collaboration within home-institution courses. VEs can prepare the ground for future physical mobility. The key characteristics of virtual exchange [16] are:

- The focus is primarily on people-to-people interaction and dialogue
- The learning goals include soft skills such as the development of intercultural awareness, digital literacy, and group work
- It is primarily learner-led: following the philosophy of dialogue, where participants are the primary recipients and the main drivers of knowledge
- Intercultural understanding and awareness are not automatic outcomes of contact between different groups/cultures, and virtual exchange programmes explicitly address intercultural understanding and engaging with difference
- VE initiatives are generally integrated in some way into students’ formal learning, or at least, students’ participation in the activity is provided with some form of academic recognition, whether it be in the form of grades, credit, or badges.

VE should align with IaH tools, such as case studies, literature reviews, comparative research, and engagement with local and international groups. While diverse cities foster intercultural learning locally, VE enriches it through global student and staff interaction.

BIPs offer unique opportunities for combining the best of both learning & teaching approaches [17]. BIPs combine short physical mobility (5 days–1 month) with

virtual collaboration, using innovative, challenge-based methods tied to Sustainable Development Goals (SDGs) or societal needs. They must add value beyond existing courses, potentially spanning multiple years, and broaden access by offering flexible mobility to diverse students. Strongly linked to IaH. The latter aims to provide international skills and experiences to a broader range of students within their home country, without requiring extensive physical exchange travel [18]. BIPs are a specific and effective way to achieve this. BIPs are connected with IaH:

- **Inclusive Internationalization:** Traditional study abroad programs often only reach a small percentage of students. IaH, through initiatives like BIPs, seeks to make international and intercultural learning accessible to all students within their home environment [5]. BIPs, by combining virtual components with a short physical mobility, offer a more inclusive approach to internationalization than traditional long-term mobility programs.
- **Leveraging Technology:** IaH strongly emphasizes the use of technology to facilitate international learning [5]. BIPs inherently leverage online and blended learning approaches, which allow for broader participation and the development of intercultural competence without the "constrictions of space or time" [5]. Blended learning, in general, is recognized as a means to integrate international students into a university's educational process.
- **Development of International and Intercultural Competencies:** Just like other IaH initiatives, BIPs are designed to foster cultural awareness, intercultural competence, and interdisciplinary learning [5, 18]. They provide opportunities for students to collaborate with peers from different countries and cultures, enhancing their global perspectives and skills.
- **Alternative to Traditional Mobility:** IaH is presented as a newer concept that aims to address the limitations and inequities of traditional study abroad programs [6, 18]. BIPs serve as a direct alternative, offering a structured international experience that reduces the barriers of cost and time associated with longer-term physical mobility. Initiatives like COILs, which are often components of blended programs, are explicitly mentioned as fostering IaH and creating more inclusive activities in higher education [1].

Methodology

Founded back in 2019, HMU integrates internationalization with openness, collaboration, improvement, and global outreach. Seen as the fastest path to excellence, it aligns with education, research, engagement, and development, advancing a holistic transformation beyond mobility programs.

At HMU, IaH aims to build international skills, boost mobility (physical and innovative), strengthen digital infrastructure, and enhance reputation. It also expands networks while aligning European frameworks with local strategy and societal needs. This strategic shift is particularly pertinent for institutions like the HMU,

where IaH can serve as a potent mechanism to democratize international learning opportunities and embed global perspectives throughout the curriculum [19].

This work aims to address:

RQ1: What specific challenges does HMU face regarding internationalization?

RQ2: How do the implemented IaH initiatives address these challenges and contribute to fostering a more inclusive and globally oriented university environment within the HMU?

RQ3: What are the benefits and challenges experienced by students, faculty, and staff participating in short mobilities?

RQ4: What practical recommendations can be made to improve internationalization at HMU?

In this work, the issues above were addressed through the organization, coordination, and implementation of VEs and BIPS as part of the University IaH strategies. The necessary feedback regarding the assessment of the reported events was collected using online questionnaires. The latter have been completed by all the participants: faculty and students.

Results

HMU adopts digital and short-mobility initiatives to adapt internationalization to evolving needs, ensuring inclusivity for those unable to join long-term mobility. It implements VEs and BIPs to address the research questions:

- **Organizes student debates to foster dialogue and empathy for global challenges** between HMU and students in our international network. An example is the student debate among HMU students, Incoming Erasmus students, and students from Ukraine on the impact of artificial intelligence (AI) in higher education [20]. After the discussion, conclusions on how to use AI in Higher Education were reported (the students' perspectives).
- Through the International Office Academy, HMU launched four COILs in 2024–2025 with university partners from Argentina, Slovenia, Italy, Israel, Poland, the Netherlands, and Ukraine, engaging HMU, Erasmus, and partner students in collaborative online international learning. More particularly, the partners collaborated and delivered the following four COILs: (a) COIL in Research Skills, (b) COIL in Leadership, (c) COIL in Business English, and (d) COIL in AI tools for Digital Communication. More than 300 students and 50 academics collaborated for 12 weeks (the average duration of each COIL) to understand & teach the concepts, and deliver their joint group projects (from group reports, to interviewing experts, to students' conference – [21] presenting at a final international conference where they synthesized their findings into comprehensive reports. This collaborative approach with diverse institutions broadens global perspectives and strengthens students' intercultural skills through real-world problem-solving.
- **Coordination and Participation in BIPs:** Over the last three years, HMU has organized seven BIPs on its campuses. The most recent

ones are (a) BIP in Soft Skills, (b) BIP in Leadership Skills, and (c) BIP in AI Tools for Digital Communication. During these activities, HMU students interacted with more than 250 incoming students during the on-site actions of the BIP schools. In the online sessions, more than 700 students from HMU and partner universities participated in and collaborated on implementing the joint projects.

VEs and BIPs embed international perspectives into curriculum and culture, fostering inclusivity and addressing the research questions. More particularly:

- **RQ1:** What specific challenges does HMU face regarding internationalization? HMU uses IaH to integrate global dimensions, tackling low mobility (2% vs. 20% target). VEs, COILs, and BIPs broaden access, raising student mobility by 85% (173 more mobilities) and incoming staff by 20% (about 100 annually) – see table 1.
- **RQ2:** How do the implemented Internationalization at Home initiatives contribute to fostering a more inclusive and globally oriented university environment within the HMU? HMU's IaH actions build digital, intercultural, and critical thinking skills, while enhancing faculty pedagogy, digital infrastructure, and reputation. Outcomes include 2,500+ virtual mobilities, a higher ranking, 40% budget from internationalization, and contributions to EU Science Diplomacy in the Western Balkans and the Middle East.
- **RQ3:** What are the benefits and challenges experienced by students, faculty, and staff participating in IaH actions? Evaluations show IaH benefits staff and students by building networks, soft skills, intercultural intelligence, and digital literacy, primarily through VEs/COILs. They also sparked new projects, publications, and IVEC 2025, reinforcing digital competencies and international collaboration in higher education.
- **RQ4:** What practical recommendations can be made to improve internationalization at HMU? HMU must expand COILs/VEs across all Departments, making IaH an institutional priority, not just a governance one. Microcredentials should enhance the appeal of programs to international and lifelong learners. Through ATHENA European University, HMU promotes virtual mobilities as inclusive tools, complementing physical ones in the development of skills and competencies.

Type of Activity	Title of the Activity	Number of Partners	Number of Different Nationalities	Online Participants	Onsite Participants	Completion Rate
BIP	BIP in Leadership	11	8	249	102	32%

BIP	BIP in AI Tools in Digital Communication	6	5	219	30	20%
COIL/VE	Business English	5	3	177	N/A	28%
COIL / VE	Research Skills	9	5	161	N/A	35%
BIP	BIP in Soft Skills	10	7	132	75	50%

Table 1: Summary of the last year's BIPs and VE in HMU as part of the IaH Action Plan

Conclusions and Future Work

IaH has transformed HMU into a more inclusive, globally engaged institution, moving beyond physical mobility. As the first Greek HEI to report such actions, HMU aims to model sustainable IaH post-pandemic, leading in intercultural competence and global citizenship through virtual and blended approaches.

Future IaH support includes training faculty in digital tools, BIPs, COILs, and VEs; recognizing virtual mobilities; launching an annual IaH School; and ensuring all students experience internationalization. A national review of IaH in Greek HEIs should address challenges, governance support, and Greece's appeal as a study destination. This analysis will map gaps, assess alignment with global IaH trends, and connect actions to national policies and societal goals, positioning IaH as a driver of institutional transformation.

Noticed limitations of our work, including: (a) low completion rate of the academic programs; maybe the inclusion of the implemented COILs/BIPs into the formal study program will tackle this issue, (b) the barrier of using English as the main communication language, (c) the closed cameras by the students' participants, and (d) the commitment of all the faculty members for the successful completion of the courses. A lack of commitment to participate in online sessions, supervise their students, and contribute to the final project assessment was observed.

The temporary emergency state of online teaching during COVID-19 shifts to the integration of online and offline teaching to develop IaH as a new model of internationalization for all. IaH represents the future development path of Internationalization at Home in Greece.

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TOWARDS EQUITABLE EXCHANGE: UNIVERSITÉ SENGHOR'S ERASMUS+ MOBILITY FRAMEWORK

Rania El Guindy, Université Senghor, Alexandria, Egypt. Email:
rania.elguindy@senghor.univ.org

ABSTRACT

Université Senghor, based in Alexandria, Egypt, is a unique francophone institution dedicated to African development. As an operator of the International Organisation of La Francophonie, it plays a central role in fostering leadership for sustainable development. This paper presents Université Senghor's Erasmus+ mobility framework, highlighting its distinctive South–North–South approach. Through international partnerships, mobility programs, and academic recognition via ECTS, the university contributes to balanced academic exchanges, mutual learning, and employability. The framework illustrates how internationalization can strengthen both academic quality and socio-economic engagement in Africa.

WHAT IS UNIVERSITÉ SENGHOR?

Université Senghor is an international university created in 1990 as a direct operator of the International Organisation of La Francophonie. Based in Alexandria, Egypt, it is a French-speaking university dedicated to African development by offering Master's degrees in multiple fields. Its mission is to train creative leaders in Africa capable of addressing the challenges of sustainable development.

The university was inaugurated on October 4, 1990, by the Presidents of Egypt, France, Zaire, and Senegal, together with former Senegalese President Léopold Sédar Senghor, after whom the institution is named.

- Students from 27 African countries and Haiti.
- More than 52 partner institutions.
- 37 Master's programs.
- Around 200 students selected yearly from 4,000 applications, with at least one year of professional experience.
- Alumni network of more than 500 auditors.

Université Senghor has also welcomed students from France, Spain, Bulgaria, and Romania, confirming its global orientation.

ACADEMIC STRUCTURE AND ACCREDITATION

Université Senghor offers Master's degree programs using the European Credit Transfer and Accumulation System (ECTS) to ensure academic recognition and facilitate mobility. Programs are internationally recognized, upholding high academic standards and quality assurance.

OUTGOING MOBILITY FROM UNIVERSITÉ SENGHOR

Université Senghor encourages students, faculty, and staff to participate in Erasmus+ mobility programs.

- In the current academic year, three students successfully completed a semester at Sciences Po with Erasmus+ financial support.
- Several academic and administrative staff members also took part in mobility programs at partner universities in France and Portugal.

Mobility offers:

- Intercultural exposure.
- Professional growth opportunities.
- Innovative teaching and learning practices.

Université Senghor also works with European institutions to simplify administrative procedures related to mobility.

RETHINKING MOBILITY

Mobility is often viewed as a one-way journey from South to North. However, North–South exchanges are equally rich and transformative. Université Senghor provides a unique environment where visiting students and staff gain cultural, academic, and professional insights.

This reverse mobility fosters:

- Mutual learning.
- Deeper global understanding.
- More balanced partnerships.

WHY MOBILITY AT UNIVERSITÉ SENGHOR?

Université Senghor is a vibrant place where students from many cultures come together to learn and grow.

Key features:

- Global teaching staff from Europe, Canada, and Africa. Faculty members teach intensive 20-hour modules, combining academic excellence with professional expertise.
- Focus on employability, through project-based learning, internships, and exposure to socio-economic actors.

- Business days and capacity-building workshops organized with companies in Egypt.
- Arabic language courses for international students.
- Participation in global events such as COP27 and AITF.
- Guided visits to Egypt's historical landmarks and companies, strengthening cultural and professional integration.

Although training is primarily in French, mobility partnerships remain inclusive, as many partner institutions have French-speaking students who can benefit from these programs.

CONCLUSION

Université Senghor is a strong example of academic cooperation between Africa and Europe. Through Erasmus+, the university promotes mobility in both directions, allowing students and staff to grow personally and professionally. These mobility programs foster new connections, strengthen partnerships, and encourage shared learning across borders.

Université Senghor remains committed to building new opportunities that enhance internationalization, guarantee quality, and reinforce socio-economic engagement.

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