INVITE

R5.A1

Review and report of the evidence on policies, instruments and processes, their impact, including unintended consequences and risks

Author(s):	**COLUMBUS PARTNERS**
Editor(s):	**Daniel Samoilovich –** Columbus Partners **Kelly Henao -** Columbus Partners **Paola Ramírez –** Columbus Partners
Responsible Organization:	**COLUMBUS PARTNERS**
Version-Status:	**Final**
Submission date:	**31/01/2025**
Dissemination level:	**[PU/PP/RE/CO]**

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Document factsheet

Project Number:	**KA220-HED-2021-006**
Project Acronym:	**INVITE**
Project Title:	**Developing Competences and Innovative Designs for International Virtual and Blended Modalities**
Title of Document:	**R5.A1** Review and report of the evidence on policies, instruments and processes, their impact, including unintended consequences and risks
Output:	**R5 A1**
Due date according to contract:	**31/01/2025**
Editor(s):	**COLUMBUS PARTNERS**
Contributor(s):	**Georgios Triantafyllidis** - University of Aalborg **Marina Marchisio** - UNITO **Alice Barana** - UNITO **Nikolaos Vidakis** - HMU **Valeria Chatzea** - HMU
Reviewer(s):	**AAU, HMU, UNITO**
Approved by:	**All Partners**
Abstract:	**An analysis aiming to cover the policy dimensions of the virtual and blended modalities in higher education. This work entailed two main tasks: the scoping view of the existing evidence on policies, instruments and processes and their impact, including unintended consequences and risks and the elaboration of policy recommendations on the sustainability of blended teaching and learning programs.**
Keyword List:	**Institutional analysis, Virtual learning, Hybrid learning, Digital transformation, educational technology, Blended Learning.**

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Consortium

	Name	Short Name	Country
1	**AALBORG UNIVERSITY**	AAU	**Denmark**
2	**HELLENIC MEDITERANNEAN UNIVERSITY**	HMU	**Greece**
3	**UNIVERSITA DEGLI STUDI DI TORINO**	UNITO	**Italy**
4	**COLUMBUS PARTNERS**	CP	**France**

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Content

1. Introduction

As part of the result foreseen by the INVITE Erasmus + project, we proposed to develop an *evidence-based policy analysis* aiming to cover the policy dimensions of the virtual and blended modalities in higher education. This work entailed two main tasks: the scoping view of the existing evidence on policies, instruments and processes and their impact, including unintended consequences and risks and the elaboration of policy recommendations on the sustainability of blended teaching and learning programs.

Evidence-policy analysis is a method that involves systematically assessing the available evidence related to specific policy issues/proposals. It includes identifying relevant research, evaluating the quality and strength of the evidence, considering counterarguments, and making recommendations based on the analysis. Combined with the Scoping Review technique, it is possible to identify the breadth and depth of available evidence, including different study designs, methodologies, and sources of information. (The main difference with the systematic literature review that answers narrow research questions).

This report presents the main findings of the different stages of the policy-evidence analysis. Considering the limitations found in this study, we include an annex of a map showing the distribution of the evidence and the main gaps to help identify dimensions that require further development.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

2. Methodology

Policy-Evidence review

The central core of this study relies on the general methodology for information retrieval and synthesis for evidence-based policies. Such an approach allows the identification, record, and analysis of bibliographic information (articles, studies, reports, statements) complemented by other relevant inputs (policies, road maps, good practices, consensus of experts) to establish recommendations or conclusions on complex issues or problems that involve diverse perspectives, multiple decision makers, and varied contexts.

Under **evidence-based policy methodology**, tasks include:

a) **Define the problem or question** on the defined topic in relation to the specific need detected and the available evidence.

b) **Information retrieval**: Search, select, and systematize evidence, including academic articles, studies, institutional reports, policies, agreements, norms, and survey or diagnostic results. Each consortium partner contributed information, including institutional strategies and unpublished documents.

c) **Analysis and synthesis of the evidence**. The information collected is systematized in formats and matrices, allowing a description and comparative analysis from which conclusions or specific recommendations for the problem or question will be drawn.

d) **Completing the synthesis involves the authors' complementary review**, selection of priorities, and formulation of recommendations.

Evidence Gap Map Methodology

An Evidence Gap Map Methodology (EGM) is a systematic visual presentation of the availability of relevant evidence for a particular policy domain. The evidence is identified through a search process of pre-specified subdomains. Evidence maps summaries what evidence there is, not what the evidence says.[1]

The EGM methodology follows the main characteristics and conditions of other evidence synthesis products: systematic with the evidence search and extraction, transparent about the type of evidence included and selection or assessment criteria applied, and displaying relevant information for the decision-makers or intended users according to its goals. The production process consists of these main steps: Establish the user's needs, questions or goals; evidence search, recovery and selection; evidence analysis and classification; and visual interface display.

EGMs are valuable tools for development decision-makers looking to see what evidence exists to inform policies and programs. For funders and researchers, these maps show where more investments are needed or where they can avoid duplicating existing research.

Each EGM adopts a framework designed to capture different interventions and outcomes associated with an intervention systematically. EGMs do not provide recommendations for policy and programming or guidelines for practice. They provide links to resources that can inform policy or programme development[2].

---

[1] Saran A, White H. Evidence and gap maps: a comparison of different approaches. Campbell Syst Rev. 2018 Oct 12;14(1):1-38. doi: 10.4073/cmdp.2018.2. Available in: https://pmc.ncbi.nlm.nih.gov/articles/PMC8428058/

[2] International Initiative for Impact Evaluation (3ie). Evidence Gap Maps. How to used. Available in: https://www.3ieimpact.org/evidence-hub/evidence-gap-maps

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
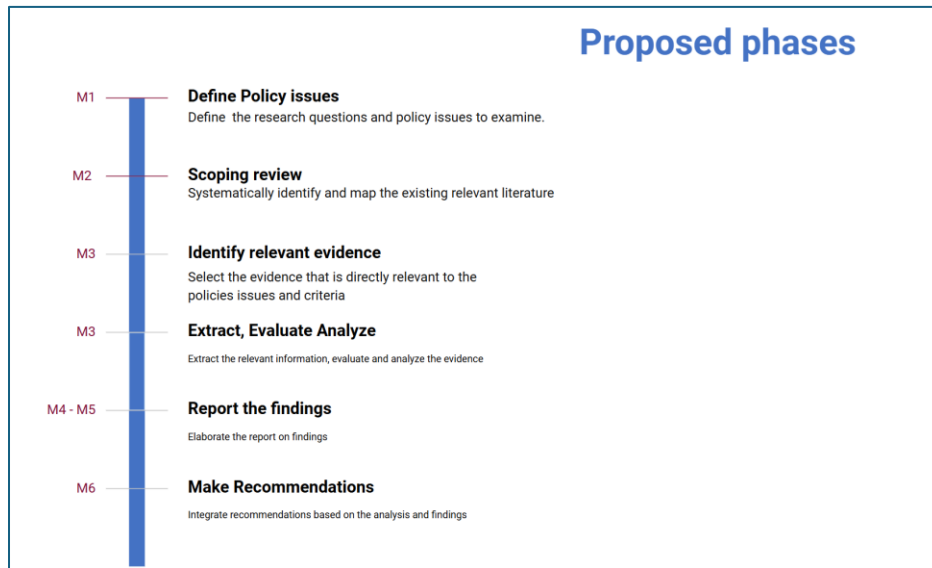of the European Union

Phases of the Policy-Evidence Review

Figure: Proposed phases of the policy-evidence review

For the elaboration of this review, we develop six primary phases:

1. **Definition of policy issues and scoping review**

A systematic search for relevant documents was carried out based on the questions addressing strategic and policy Issues defined by INVITE priorities and partners. For the identification of issues, we tried to include the gaps and needs identified along the different project stages, especially the overview and trends on blended and virtual modalities for teaching and learning and digital transformation in higher education.

Key issues and questions:

Strategy	Sustainability and Business plans
-What are the critical elements of universities' institutional policies/strategies to govern virtual and blended international programs/initiatives - How does the organizational framework respond to those policies/strategies? - What is the impact of the digital education plan? - What is the impact on students learning outcomes?	-What are the critical elements for achieving sustainable business models? -How can the implementation of digital plans be sustainable? -What is the cost-effectiveness relationship in different types of infrastructure?
Resources -How does the technological infrastructure support the development and implementation of virtual and blended international programs -What are the required human resources and HR policies for implementing digital plans? -What are the supporting services required to implement digital plans?	**International collaboration** -What are the main rationales for international digital education? How are demographic trends pressing the attraction of virtual students? -How can the added value/quality and efficiency of international programs be evaluated? -What is the role of international collaboration in enhancing the added value of virtual and blended international programs?

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

2. Scoping review

The inclusion criteria and resource retrieval were defined by the evidence type needed for the scoping review objective and related to the policy issues questions.

Inclusion criteria:

• Systematic reviews (systematic, scoping, and other states of the art or international surveys),
• Policies (national or institutional, and policy brief documents).
• Publication date (last 10 years)

Databases:

• Eric, Science Direct, Lens and institutional repositories from HEI organizations.
• The bibliographies from the selected reviews and policies are included to identify additional relevant evidence

3. Identify relevant evidence

The search was conducted by a specialized librarian, who ensured that the collected documents from every source were reviewed to avoid duplication. The authors read by title and abstract to identify the relevance of the content and evidence to the questions and issues addressed.

Data base	Recovered HITS	Selected by title abstract
ERIC Education Resources Information Center https://eric.ed.gov	830	151
Scopus (Interdisciplinary index of bibliographic databases) https://www.scopus.com/	264	68
LENS (Bibliographic and grey publications repository) https://www.lens.org/	98	16
HEI related organizations (detailed list will be included in the Report)	17	5

All the retrieved references (HITS) and the initial selection are available in bibliography reports in HTML, RIS, and CSV formats to be shared, reused, and published according to the project data management conditions.

4. Extraction, evaluation and analysis.

Two hundred forty-five documents were selected for a full-text evaluation to identify if there is evidence related to the main issues and their questions. From the full-text selection, only 14 were considered relevant evidence to answer the questions and were included in the extraction sheets.

The extraction sheets identify the evidence according to these main elements:

• Strategy and policies,
• Sustainability or Business Plans,
• International collaboration and Recommendations.

These files are available in CVS and Excel formats and can be shared, reused, and published according to the project data management conditions.

invite-erasmus.eu

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

5. Findings report.

Considering the quantity of the retrieved evidence and the few documents that matched the inclusion criteria to provide information for the revision, we decided to include an Evidence Gap Map to show the complete distribution of the primary studies and policies that were entirely reviewed during the process.

259 reviewed documents were classified according to the evidence-analysis elements as well as their content and characteristics as follows:

- Region or Country
- Knowledge area (Nature, applied, social and humanities, or general)
- Study design (systematic review, case studies, survey, models)
- Target sample (students, professors, managers)
- Strategies or actions (pedagogy, financial, infrastructure/resources, or internationalization)

The map allows visualization of the bibliographic distribution to identify the characteristics of the published studies and the aspects and dimensions of a higher or lower number of studies. The bibliography database used to design the map is available in CVS and Excel formats to be shared, reused, and published according to the project data management conditions. The formats can be used in other visualization platforms.

For this report, the Map was uploaded to the open-source software Tableau, https://public.tableau.com/app/discover, to visualize the data. It can be retrieved online, published, and reused according to the project data management conditions.

6. Conclusions: Pathways for digital transformation

With the selected amount of evidence, we proceed to analyze the extracted evidence to synthesize the main findings and elaborate on a list of recommendations that can be linked to each dimension covered by the evidence. It is important to note that these recommendations mainly target higher education leadership and policy-makers and try to focus on the main aspects of the decision-making process. Unfortunately, as pointed out in the Map-Gap and Policy review results, the evidence is not sufficient to deepen the analysis, especially in aspects such as needed resources, sustainability, business models, and the impact of the policies. **To see the conclusions, please consult R5A2.**

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

3. National and Institutional Policies Review

Source-Reference	Country Region	Strategies or Actions
How are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	HEIs employ a growing range of digital technologies in their activities, which require adequate resources and scaffolding policies to support, guide and monitor their use. Policies and regulations related to digital higher education may fall within the remit of public authorities or central bodies. Alternatively, HEIs themselves may have the autonomy to set their local policy. Central or public authorities can include the ministry responsible for higher education, the technology or communication ministry, public agencies responsible for higher education, quality assurance bodies, and National Research and Education Networks **(see Figure 1).** There are diverse elements for which authorities set targets and objectives for digitalization in HE. The top main components are the access to or use of open educational resources, the development of standards of interoperability, and the level of public investment in network connectivity and hardware. **(See figure 2). Many jurisdictions indicated that no legislation or regulation exists for specific modes of delivery or that existing legislation is intended to cover programs offered through all modes of delivery but that HEIs are ultimately responsible for ensuring quality.**
How are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	Many survey responses (e.g., Canada, Iceland, and Sweden) highlighted the autonomy of HEIs in their systems in setting policy on digital education in terms of teaching materials and modes of delivery. However, governments still often play a steering or encouraging role in this regard. 60% of the responding jurisdictions have policies in place to encourage HEIs to develop institution-wide strategies for digital education (18 out of 30). In contrast, half have models available for shared procurement of digital infrastructure (15 out of 30). Some respondents also mentioned the mandate of some national bodies and structures to support digital higher education. For example, the Luxembourg Media & Digital Design Centre (LMDDC), created in December 2020, aims to support Luxembourg's digital education stakeholders in their innovation efforts. **(See Figure 3)**
Staring F, Brown M, Bacsich P, Ifenthaler D. Digital higher education: Emerging quality standards, practices and supports. 2022 nov (OECD Education Working Papers; vol. 281). Report No.: 281. Available : https://www.oecd.org/en/publications/digital-higher-education_f622f257-en.html	International	Four key policy levers that governments can consider as they seek to develop institutional supports for the quality enhancement of digital higher education: • Strategy setting and guidance. The development of a national strategy, advice and guidelines for institutional digitalization, innovation and QA can provide institutions with "broad objectives against which they can monitor progress" (OECD, 2021b, p. 49). • Financial support and incentives This consists of "providing and funding the infrastructure necessary to implement the strategy" (OECD, 2021b, p. 48).

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		• Stakeholder capacity building and collaboration. Supporting higher education staff and students to acquire the necessary digital skills, tools and resources to access and engage in quality digital learning. • Performance monitoring and evidence collection. Collecting data, feedback and best practice from students, staff and institutions on the quality and QA of digital education, to inform institutional decision-making and promote benchmarking against clear and measurable national targets and best practice. **(See figure 4)**
Communication from the commission to the European Parliament, the council, the European Economic and Social Committee and the committee of the regions. Digital Education Action Plan 2021-2027. Resetting education and training for the digital age. {SWD(2020) 209 final}	Europe	**Strategic priority 1: Fostering the development of a high-performing digital education ecosystem** Promoting high-quality and inclusive digital education must be a joint endeavor across society. Governments, education and training institutions, the private sector, and the public all need to be engaged in this endeavor to develop a high-performing digital education ecosystem. Policies relevant to digital education need to be better connected, and the EU can contribute to this work at all levels. The Annual Sustainable Growth Strategy 2021 has, in fact, highlighted the need for unprecedented investments in skills and connectivity and made each of the seven flagship investments for the Recovery and Resilience Facility. Key players, in particular teachers and trainers, should be better equipped and trained to participate more effectively in the digital transformation of education and understand the opportunities this can bring when used effectively. **Effective digital capacity planning and development is vital for education and training systems.** This requires the development and ongoing review and updating of digital strategies addressing technology gaps in infrastructure and devices and developing relevant organizational capabilities in education, including the capacity to deliver hybrid modes of learning and teaching (remote and on-site). Capacity should be designed to ensure accessibility to assistive technologies and accessible digital content and, more generally, address unequal access, e.g. on socio-economic or rural-urban grounds. Institutionalized support is essential for such planning and development, as are interdisciplinary teams, including management, technologists and instructional designers, with the needs and experience of education and training staff at the center. Very high-capacity internet connectivity is critical for education. Demand for connectivity is increasing due to bandwidth-heavy applications such as video streaming, video conferencing, cloud computing, and other emerging applications (such as virtual and augmented reality). Bringing fast and reliable internet to educational institutions and learners plays a vital role in ensuring effective and engaging learning experiences. This means ensuring that internet access is not confined to a specific classroom or computer lab.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Communication from the commission to the European Parliament, the council, the European Economic and Social Committee and the committee of the regions. Digital Education Action Plan 2021-2027. Resetting education and training for the digital age. {SWD(2020) 209 final}	Europe	**To support a high-performing digital education ecosystem, the European Commission will pursue the following actions:** 3. Develop a **European Digital Education Content Framework** that will build on European cultural and creative diversity and include guiding principles for specific sectors of education and their needs (such as high-quality instructional design, accessibility, recognition, and multilingualism) while reflecting the need for interoperability, certification, verification, and transferability of content. Launch a **feasibility study on the creation of a European exchange platform** to share certified online resources (such as massive, open online courses) and link existing education platforms. 4. Support, where necessary, Gigabit **connectivity of schools**, as well as connectivity in schools16 under the Connecting Europe Facility Programme. Carry out Connectivity4Schools awareness-raising actions on funding opportunities. Encourage Member States to include **broadband in investment and reform projects in national recovery and resilience plans under the Recovery and Resilience Facility**, which is in line with the European Connect flagship. **Make the most of EU support** with regard to internet access, purchase of digital equipment and e-learning applications and platforms for schools and, in particular, for students from disadvantaged groups and students and educators with disabilities. 5. **Use Erasmus cooperation projects to support the digital transformation plans** of primary, secondary, and vocational education and training (VET), higher, and adult-education institutions. **Support digital pedagogy and expertise in the use of digital tools** for teachers, including accessible and assistive technologies and digital content, through Erasmus Teacher Academies and launch an online self-assessment tool for teachers, SELFIE for Teachers, based on the European Framework for Digital Competence of Educators to help identify strengths and gaps in their digital, technical and teaching skills. 7. Develop **standard guidelines for teachers and educational staff to foster digital literacy and tackle** disinformation through education and training. This should be done in close cooperation with stakeholders through a multi-stakeholder group, bringing together civil society organizations, European technology companies and carriers, journalists, media and broadcasters, the Media Literacy Expert Group and the European Digital Media Observatory, national authorities, education and training institutions, Safer Internet Centers, educators, parents and young people. This will be done in line with the upcoming Media Action Plan. 14. Establish a E**uropean Digital Education Hub to**: • Support member States by setting up a network of national advisory services on digital education to exchange experience and good practice on the enabling factors of digital education; link national and regional digital-education initiatives and strategies; and connect national authorities, the private

R5A1 - Review and report of the evidence on policies

INVITE

Co-funded by the
Erasmus+ Programme
of the European Union

		sector, experts, education and training providers and civil society through various activities; • monitor the implementation of the Action Plan and the development of digital education in Europe, including through results from EU-supported projects and share good practice by contributing to research experimentation and systematic collection and analysis of empirical evidence, in part through peer learning; • support cross-sector collaboration and new models for the seamless exchange of digital learning content, addressing issues such as interoperability, quality assurance, environmental sustainability, accessibility and inclusion and common standards for digital education; • support the agile development of policy and practice by being a thinker for digital education and engaging stakeholders in user-driven innovation through the Digital Education Hackathon.
Huertas, E, Biscan, I, Ejsing, C, Kerber, L, Kozlowska, L, Ortega, S, Lauri, L, Risse, M, Schorg, K & Seppmann, G 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024,https	Europe	**POLICY FOR QUALITY ASSURANCE Standard:** Institutions should have a policy for quality assurance that is made public and forms part of their strategic management. Internal stakeholders should develop and implement this policy through appropriate structures and processes while involving external stakeholders.
Huertas, E, Biscan, I, Ejsing, C, Kerber, L., Kozlowska, L., Ortega, S, Lauri, L, Risse, M, Schorg, K & Seppmann, G 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024.	Europe	**POLICY FOR QUALITY ASSURANCE** **Elements to consider** When the e-learning strategy forms part of the overall institutional strategy, attention to quality through innovation and earmarked resources—mainly when e-learning is new or supplementing traditional provision—may be more greatly encouraged and prioritized. With the institution's e-learning strategy embedded in its overall strategy, institutions' quality assurance strategies can also be more easily adapted to reflect educational objectives, rapid technological changes, and shifts in pedagogical models. Such quality assurance policies and strategies for e-learning, which may cover quality, pedagogical models, and innovation, can then be well-defined, implemented, and communicated to the public. Stakeholders may be particularly interested in an explanation of why the e-learning strategy has been selected as appropriate for the students being served. Educational objectives and pedagogical models are often included in institutional strategies. In the e-learning context, innovation strategies, rapid iterative review, and connections between research and pedagogy and/or learning design (which requires knowledge of the latest innovations to select

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		the most appropriate means for achieving learning objectives) should be considered.
EADTU-ENQA Peer Learning Activity on blended and online education. 2022	Europe	**A dialogue on innovation and quality assurance between institutions, quality assurance agencies and governments** A dialogue between main stakeholders on digital modes of teaching and learning, the development of blended degree education, and online continuous education should be organized to support these developments and promote appropriate quality assurance policies. - **Institutions:** developing and implementing policies and strategies for digital education in blended degree and extended continuing education provisions, an internal quality framework with a maturity model for online/blended learning and continuing and open education - **Quality assurance agencies:** adapting and fine-tuning criteria/indicators and presenting guidelines for innovation and digital modes of teaching and learning, and sharing good practices of internal and external quality assurance - **Governments:** Develop drivers for innovation and quality and review regulatory frameworks and practices for quality assurance and accreditation in higher education, encouraging and accelerating innovation. National strategies should express a vision for change. This dialogue should lead to concerted actions towards innovation and quality.
EADTU-ENQA Peer Learning Activity on blended and online education. 2022	Europe	**Key elements that should be moved forward in order to strengthen innovation and the dialogue between governments, QA agencies and universities in this field** Key elements to move forward innovation and the dialogue: - **Institutions:** leadership to be continuously innovative, continuous professional development of staff, technology and

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		staff support, collaboration within the institution (teams and support structures), institutional evaluation and research, university extension schemes for extending continuing education to a large scale; - **Quality assurance agencies:** sharing good practices between agencies; seeking a cross-institutional consistent approach backed by stakeholders; evaluating institutions on their active support of innovation and its impact on the quality of teaching and learning; developing a consistent approach on criteria and guidelines for blended and online education; - **Governments:** governmental strategies and visions, funding schemes, large-scale continuing education as an area of provision next to degree education
EADTU-ENQA Peer Learning Activity on blended and online education. 2022	Europe	**Identifying the expertise needed and ways of sharing at the European level** - **Institutions:** teaching and learning departments, university extension structures with expertise in educational/pedagogical, technological, and business models. - **Quality assurance agencies:** in-house expertise on recognizing and supporting digital modes of teaching and learning; expertise also to be reflected in review panels; expertise in blended degree education and online continuous education. - **Governments:** support structure/agency for online and blended education
Huertas, E, Biscan, I., Ejsing, C, Kerber, L., Kozlowska, L., Ortega, S, Lauri, L., Risse, M, Schorg, K & Seppmann, G. 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024	Europe	**Consideration of internal quality assurance** Standard: External quality assurance should address the effectiveness of the internal quality assurance processes described in Part 1 of the ESG. **Elements to consider** European, national, and local policies also apply to e-learning, providing institutions with ethical and legal requirements (for example, data privacy or local legal considerations for students with special education needs). **Indicators** When designing its quality assurance policy and internal quality assurance system, the institution considers European, national, and local policies, as well as ethical and legal considerations.
Huertas, E, Biscan, I., Ejsing, C, Kerber, L., Kozlowska, L., Ortega, S, Lauri, L., Risse, M, Schorg, K & Seppmann, G. 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024	Europe	As with traditional, campus-based provision, external quality assurance will consider an institution's particularities – e-learning included. Usually, the procedure will involve relevant stakeholders at all levels. The teaching and learning process, the learning resources, the VLE, and the student support system for e-learning will be additionally considered. It is an excellent opportunity for institutions to demonstrate their involvement in pedagogical innovation projects and the involvement of stakeholders (students and teaching staff involved with e-learning) in the design of methodologies. **It is a good practice that quality assurance processes are sufficiently flexible to include recognizing and supporting new modes of teaching and learning**. Reviews can consider

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		specific criteria, indicators, guidelines, or frameworks and if there is a strategy supporting the e-learning provision.
Huertas, E, Biscan, I., Ejsing, C, Kerber, L., Kozlowska, L., Ortega, S, Lauri, L., Risse, M, Schorg, K & Seppmann, G. 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024	Europe	The challenge remains with HEIs and QA agencies. On the one hand, QA agencies should develop external review methodologies that consider the particularities of e-learning. On the other hand, traditional institutions providing e-learning or blended programs should adapt their internal quality assurance systems to guarantee the quality of their teaching and learning processes.
Henao, K., Samoilovich, D. (2023), The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration	Europe	**Institutional policies are critical to supporting emerging initiatives in an initial phase and allowing them to upscale and avoid spotty or patchy innovations**. Strategies require talented people, resources, and support structures, but most of all, a clear vision. During the interviews, we identified different reasons an institution might engage in large-scale digital transformation and found the needed elan to overcome organizational inertia. • Satisfying a diverse learner's audience is an opportunity to extend the offer to the population with disabilities and be more inclusive. • Expanding Lifelong Learning, using technology and virtual settings, promotes lifelong learning in ways that traditional teaching in a tertiary context cannot; this refers to flexibility of time and place. • Attractiveness and visibility of the university; attracting international students; important for smaller universities the need to make themselves known. • Being competitive in the market (for example, the Technical University of Munich competes with the Zurich Polytechnic); this is more relevant in countries with less public funding (i.e., the UK); competition among universities and with telematic-online universities, which are developing especially after the pandemic. • Costs reduction, pushing campus technology systems to the cloud, replacing instructors with e-learning and textbooks with digital content, and swapping costly equipment with simulators or VR/AR resources. • Resources sharing, the virtual and digital environment enhances the opportunity to share resources with other institutions, enhancing opportunities for cooperation and collaboration within, e.g., didactic support centers.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		• Internationalization, exposing students to international collaboration, builds cultural understanding, communication skills, knowledge of the wider world, and opportunities for career advancement they never imagined.
Henao, K., Samoilovich, D. (2023), The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration	Europe	**Institutional policies are critical to support emerging initiatives in an initial phase and allow them to upscale and avoid spotty or patchy innovations. Strategies require talented people, resources, and support structures, but most of all, a clear vision.** The interviewees stressed the importance of differentiating the process of digitization vs. digitalization. While the first is not linked to the teaching and learning process, the latter is critical for the sustainable innovation of higher education. The process is a line from digitization to digitalization to digital transformation. Most institutions are at the digitization step. The biggest issue is a move to digital transformation. Many institutions are reluctant. It takes time and resources, but it also changes the culture.
Henao, K., Samoilovich, D. (2023), The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration	Europe	**Public policies can establish a framework that either promotes or hinders the integration of digital technology into higher education.** Higher education policies encompass a wide range of approaches employed by governments, including setting national targets, developing strategies, establishing entities to support digitalization in higher education, and regulating aspects such as quality and data protection. Universities are called upon and financially supported to promote the growth of ICT infrastructure and services. This support includes enhancing the skills of educators through various measures, aid, incentives for digitalization, teaching, and fostering networking opportunities.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

| Huertas, E, Biscan, I., Ejsing, C, Kerber, L., Kozlowska, L., Ortega, S, Lauri, L, Risse, M, Schorg, K & Seppmann, G 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024. | Europe | **Student support**

Proper student support, which is often addressed by institutional policies and strategies and covers aspects such as tutoring, pedagogical, technological, and administrative-related needs, can help improve the student retention rate and success and satisfaction of students (assuming that students are aware of, have access to, and make use of the support). Support may be further enhanced if the institution analyses the profile of e-learning students (including, for instance, their cultural backgrounds, technical experiences, technological equipment, etc.) and uses it to meet the specific needs of its students (for example, students with disabilities). Student support can be tailored to individuals or even at the class or subject level.

Effective student support will be adapted to the e-learning environment, made easily accessible, available as often as possible during the learning period, and appropriate considering the levels of intervention that may be needed (routine error correction and personal and human support for major difficulties). |

3.1 Funding

Source-Reference	Country-Region	Strategies or Actions
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	Among responding jurisdictions' higher education systems, the results of this survey show that public or central authorities are typically primarily responsible for policy related to funding or financial aspects of digitalization – they oversee the setting of system-level policies on the financing of digital education in HEIs in 25 out of 30 jurisdictions **(Figure 1)**. A large share of reporting jurisdictions (11 out of 30) does not have a clear actor responsible for setting policies related to financially supporting learners in fully online or hybrid degrees. However, where responsibility has been clearly assigned, it also tends to fall to central or public bodies, typically ministries for higher education.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	In contrast, individual HEIs typically have discretion over the use they make of financial resources available for the development of digital education. In a large majority of jurisdictions, HEIs are responsible for the acquisition of learning management systems or virtual learning environments as well as decisions related to purchases of technical equipment (in 27 and 25 systems, respective**ly - Figure 1.** HEIs are also most often the responsible actors in setting policies to train teaching staff to deliver digital education (in 17 systems). In a slight majority (16) of systems, HEIs have the freedom to set policies regarding the establishment, maintenance and upgrading of internet connectivity.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey.	International	The growing importance of digital technologies in HEIs also implies that institutions will have to invest a growing share of their budgets in maintaining and developing their digital infrastructure.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

OECD Education Working Papers. No. 303, 2023		
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	In most systems, students in fully online or hybrid programs are eligible for similar grant and loan support to campus-based students.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	As part of efforts to reduce digital divides in higher education, governments or other public bodies have the option to provide a r**ange of services and support in addition to grants and loans for students**. The most common support reported in the survey is public funding or loan schemes dedicated to hardware (e.g. laptops, tablets, etc.) for learners.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Publicly funded services or supports for learners** intended to improve equity of access to online learning and digital technologies in higher education: Regional access centers or "connected centers"; Subsidized or free access to internet connectivity; Subsidized or free access to online higher education courses; Funding or loan schemes for hardware for learners. Another way that public authorities can support digital learners is by f**unding or financially supporting the development or operation of online learning platforms.** Such platforms may offer free certified courses or "freemium" courses or provide open access to higher education learning materials or education resources.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Public authorities can help promote the development of HEIs' digital capacities** by funding specific aspects of digitalization through targeted funding or funding from special purpose or capital funds.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Public funding for digitalization in HEIs.** Aspects of digitalization for which specific public funding has been made to higher education institutions in the past five years: Learning management systems; On-premises hardware; End-user hardware (for students and staff); Audio-visual equipment or facilities for recording lectures; Staff or student improvements in digital capabilities; MOOCs or MOOC platforms; Virtual learning environments; Network connectivity upgrades; Open educational resources
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	The extent to which **different types of resources are provided varies across jurisdictions**. Resources are most often allocated for the development of open platforms to share educational material (16 jurisdictions). To a lesser extent, public or publicly supported bodies provide platforms for the sharing of digital pedagogical practices or training on digital pedagogy. Other resources supported include the development of toolkits or guidelines to help teaching staff in HEIs develop their digital skills (12 jurisdictions) or training on the use of relevant specific software or tools (10 jurisdictions).

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Type of resources provided by public authorities** or publicly supported NGOs to cultivate digital capabilities in staff teaching in HEIs: • Training on the use of relevant software or tools • Toolkits or guidelines for institutions to support the development of the digital skills of staff. • Open resource-sharing platforms available for teaching staff to share pedagogical practices. • Training on digital pedagogy. • -Open resource-sharing platforms available for teaching staff to share educational resources
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	Countries can also support teaching staff working to develop their digital capacities by allowing space for developing material for digital environments as part of their **workload allocation models.**
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	Innovation funds to support experimentation are by far the most common form of policy to support the development of digital capabilities in HEIs. The most common policy is **the creation of innovation funds to support experimentation with new digital tools and pedagogies,** which were reported in 16 jurisdictions. Nine jurisdictions have put in place publicly supported peer-learning networks focusing on digital pedagogy. Austria, Canada, France and Ireland provide awards or other recognition for staff demonstrating digital expertise or leadership. Additionally, Canada, Iceland, Ireland and Spain provide external or self-assessment resources for the evaluation of the digital capabilities of teaching staff.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Incentivizing policies to enhance digital capabilities in higher education institutions:** - External or self-assessment resources for evaluating the digital capabilities of teaching staff; - Recognition or awards for digital expertise or leadership; - Publicly-supported peer-learning networks for digital pedagogy; - Innovation funds to support experimentation with new tools/pedagogies
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	Responsibility for digitalization policy appears scattered in most higher education systems included in the survey. Governments defer to the autonomy of higher education institutions in most aspects of policy, setting few system-level strategic targets for digital higher education while encouraging institutions to develop their strategies.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Some barriers:** Few countries have distinct standards and procedures for authorizing hybrid and fully online programs, and digitalization is rarely specifically accounted for in external quality assurance processes. - Few systems provide dedicated space for teaching in a digital environment in higher education teaching qualifications or workload allocation models.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Source	Country-Region	Strategies or Actions
		- There appears to be less emphasis on the provision of public support to tackle digital divides.
How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303, 2023	International	**Barrier:** The survey results also show that important shares of responding jurisdictions have no clear assignment of responsibility for areas of policy vital to managing risks and ensuring efficiency and quality of digital education.
Huertas, E, Biscan, I, Ejsing, C, Kerber, L, Kozlowska, L, Ortega, S, Lauri, L, Risse, M, Schorg, K & Seppmann, G 2018, Considerations for quality assurance of e-learning provision, ENQA occasional papers, no. 26, European Association for Quality Assurance in Higher Education AISBL, Brussels, viewed 17 Oct 2024,https ://enqa.eu/indirme/Considerations for QA of e-learning provision.pdf	Europe	Institutional policies for e-learning may further include the constituting elements of quality, which include: • institutional support; • course development; • teaching and learning; • course structure; • student support; • faculty support with compulsory e-learning training for new members of staff; • technological infrastructures; • student assessment (learner authentication, work authorship and examination security) and certification; and • electronic security measures. The institution may also define policies to grant proper access and ensure participation for those students affected by disability, illness, and other mitigating circumstances.
Henao, K., Samoilovich, D. (2023), The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration	Europe	Ensuring that funding programs and policies for the digital transition reflect the precedence of digital capacity building over pursuing technological leadership. Support needs to priorities the adoption or upgrading of one's technologies, the hiring of digitally skilled staff, and the uptake of digital skills among current staff. Without this, universities' capacity to innovate will be hampered, and so will the EU's pursuit of technological leadership.

3.2 Internationalization

Source	Country-Region	Strategies or Actions
Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions. Digital Education Action Plan 2021-2027. Resetting education and training for the digital age. {SWD (2020) 209 final}	Europe	**As digitalization advances,** the Action Plan provides the policy context and strategic guidance to increase the digital impact of the Erasmus programs. Blended mobility will be 'mainstreamed' (i.e. integrated) into the Erasmus programme by introducing a 'virtual learning' component to Erasmus and further strengthening successful initiatives such as e-Twinning for schools. This will help bring together learners and teachers from different countries to work online collectively on common projects. This will complement physical mobility and help improve the digital skills of educators and learners. It will also improve the quality of the overall

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		digital learning experience. In addition, greater use will be made of virtual exchanges between young people and education institutions in Europe, and around the world, to further engage young people in intercultural dialogue and improve their soft skills. In higher education, **the European Universities initiative** will develop virtual and face-to-face EU inter-university campuses. In so doing, this initiative will implement innovative models of digital higher education. The European Student Card Initiative will play a key role to facilitate the secure electronic exchange and verification of student data and academic records, becoming a real differentiator for higher education institutions by simplifying the management of their students' mobility. It will allow students to identify and authenticate themselves online in a secure and trusted manner based on the EU's electronic identification rules (eIDAS regulation) when carrying out online learning activities at a host institution in another Member State. By connecting universities' various IT systems, we will achieve a paperless Erasmus mobility in full respect of General Data Protection Rules.
Gaebel M. New forms of student mobility and internationalization: what challenges for QA?. European University Association; 2023. 23 p.	**Europe**	**European higher education policy (for international mobility)** Early political goal, in the EU & Bologna Process: • bringing Europe together – people-to-people exchanges • enabling students a seamless study across European countries • "converging" study structures across Europe Based on: EU European Credit Transfer System – ECTS • first: time-defined, then: learning outcomes
Davis H. Going beyond the 20% student mobility benchmark. Geneva: European University Association; 2023 sept p. 23.	**Europe**	**European Benchmarks: 2009 Bologna Process / EU 2011** "In 2020, at least 20% of those graduating in the European Higher Education Area should have had a study or training period abroad." Start of data collection • physical mobility, all three cycles • at least 15 ECTS credit points or three months & (degree mobility) • Bologna Process: Apart from inclusion, no further discussion on mobility & its quality
		For a quarter of a century student mobility has been at the forefront of ministerial preoccupations. The original commitment to the 'promotion of mobility' soon gained in definition and is now a specified quantitative benchmark: **at least 20% of graduates in the European Higher Education Area (EHEA) should have experienced an academic or work placement outside their home country.** To enlarge the pool of physically mobile students: a) Cross-border traineeships undertaken outside Erasmus+ in the framework of university-industry collaboration, whether in the

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

context of bilateral or formal trade agreements, should be included in the mobility statistics.

b) In the legal framework of the EU's internal market, obstacles to cross-border trainee mobility should be identified and removed.

c) Consideration should be given to whether and how students in branch campuses and on franchised programs can be regarded as mobile.

d) As a complement to the existing strong focus on inclusivity, and in view of the high incidence of physical mobility at master's and doctoral levels, efforts should be made to expand cross-border inter-cycle progression routes across binary divides.

e) Mobilities achieved in non-formal and informal prior learning (RPL-NFIL) should be recognized and counted into the benchmark.

To re-engineer the 20% benchmark:

f) Given the urgency of the digital and green transitions, physical mobility needs to be blended with virtual mobility in ways which assure high quality and amenability to measurement.

g) Wide-ranging debate should be initiated in order to develop a credible, widely accepted and sensitive set of metrics on internationalization in general and on blended and virtual learning in particular.

h) The Scoreboard which the Commission proposes to locate within the European Higher Education Sector Observatory should use the refined metrics as the basis for a new series of longitudinal data.

i) In order for refined metrics to be deployed in evolving digital mobility and recognition instruments, a fourth edition of the ECTS Users' Guide should promulgate precise guidelines and generate good practice.

j) If the 20% benchmark is to be retained, consideration should be given to breaking it down into cycle-based components, with the bachelor's benchmark re-set at a realistic level and the master's and doctorate benchmarks adjusted accordingly.

The history of the 20% benchmark has been one of gradual re-specification, from an initial aspiration to a quantified minimum and a timeline. Since the 2020 target date, Covid-19, the war in Ukraine, and Brexit have seriously disrupted the mobility growth curve. The pandemic accelerated a shift to online learning. The war in Ukraine prompted forced student mobility. Brexit has distorted the direction and volume of mobility flows

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Davis H. Going beyond the 20% student mobility benchmark. Geneva: European University Association; 2023 sep p. 23.	**Europe**	At their **summit in Rome in 2020, when re-affirming the 20% benchmark, ministers** further committed to "enabling all learners to acquire international and intercultural competences through internationalization of the curricula or participation in innovative international environments in their home institutions, and to experience some form of mobility, whether in physical, digitally enhanced (virtual) or blended formats."
		The future mobility model is one which fuses physical, virtual, and blended. The European Universities Initiative (EUI) is a case in point. It allows large university alliances from different European countries to collaborate on learning and teaching provision. Institutions commit to align their education offer and to render 50% of their students mobile. Its factsheet promises inter-university campuses, where "students, staff and researchers enjoy seamless mobility (physical, virtual or blended) to study, train, teach, do research, work or share services at cooperating partner institutions".
		A seductive formulation, sufficiently imprecise to allow the consortia to develop strategies and measures appropriate to their disciplinary focus and their geographical circumstances. Although all will operate within the same funding framework and overall rationale (including the obligation to respect the green and inclusion imperatives, as well as the digital), seamlessness is likely to yield a wide range of models and practices.
		"The benchmark of 50 % student mobility within the alliances is perceived by coordinators and presidents of EUAs as difficult to achieve." (p.45).
		[HEIs] should promote blended mobility, the combination of a physical mobility with a virtual component, within their institution to offer more flexible mobility formats and further enhance the learning outcomes and impact of physical mobility. HEIs must ensure the quality of blended mobility activities and formal recognition for participation in blended mobility, including the virtual component.
		The programme conceives blended mobility as a supplement to physical mobility (for students who can undertake only short placements) or as an enrichment of it (by widening the scope of group learning). The Guide specifies that "a blended mobility for studies must award a minimum of 3 ECTS credits".
Davis H. Going beyond the 20% student mobility benchmark. Geneva: European University Association; 2023 sep p. 23	**Europe**	**Distinct from the blended mobility discussed above is the option of the "blended intensive program".** In this case, "physical mobility must last between 5 days and 30 days (excluding travel time) and be combined with a compulsory virtual component facilitating collaborative online learning exchange and teamwork" . There is no specified duration for the virtual element, but it must – within the minimal element of ECTS 3 – bring "the learners together online to work collectively and simultaneously on specific assignments that are integrated in the blended intensive program and count towards the overall learning outcomes" (p.62)

R5A1 - Review and report of the evidence on policies

INVITE

Co-funded by the
Erasmus+ Programme
of the European Union

| | | **Blended mobility has neither a precise definition nor a stable presence in the EU-funded programs.** The European University Initiative, by invoking the principle of 'seamlessness', would appear to highly dependent on blending, as well as being obliged to credit it, albeit in a variety of ways, as mobility. In the Erasmus Mundus Joint Master's Degree scheme, by contrast, virtual mobility is ruled out. Virtual learning may well take place, but it cannot count as a mobility if it replaces physical mobility.

Blended course delivery, however, has no necessary cross-border dimension, notably when the collaborating institutions are located within the same higher education system…When the institutions collaborating on a student exchange program are located in different countries, it is legitimate to talk of mobility. The assumption here is that both physical and virtual interactions have a cross-border character, but while this is necessarily true of the physical it is not necessarily true of the virtual; if the virtual is wholly undertaken in-house in the home university, there is no blended mobility.

Cross-border physical mobility is measurable: one student in transit is an integer of mobility. The problem posed by blended mobility lies in the difficulty of measuring the cross-border utilization of learning and teaching materials by the student. It must be quantifiable if it is to count meaningfully as a mobility. And unless it can count meaningfully as a mobility, it is irrelevant to the attainment of the 20% benchmark. The benchmark therefore demands a refined set of metrics able to assign relative values to the quantitative and qualitative components of a blended mobility experience. Such a set would have to take due account of the mode and strength of the combination of virtual with physical mobility. Until a methodology emerges, it is difficult to see how blended mobility might contribute to the mobility benchmark |
|---|---|---|

4. Institutional Strategies

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Source-Reference	Country Region	Strategies or Actions
Creating Mature Blended Education: The European Maturity Model Guidelines, Goeman, Katie; Dijkstra, Wiebe, Higher Education Studies; Vol. 12, No. 3; 2022	International	The **European Maturity Model (EMM)** frame conceptual and implementation issues regarding blended learning, teaching and education at several levels. • Blended learning refers to learning as a result of a deliberate, integrated combination of online and face-to-face learning activities; • Blended teaching refers to designing and facilitating blended learning activities; • Blended education is the formal context in which blended teaching and learning take place, determined by policies and conditions with regard to the organization and support of blended teaching and learning. The framework provides 21 dimensions to assess the level of maturity at the course, program, and institutional levels. **At the institutional level, there are eight dimensions to evaluate the level of maturity: Institutional support, Institutional strategy, Sharing and openness, Professional development, Quality Assurance, Governance, Finance and Facilities.** At each subdimension, three maturity levels are indicated: Level 1: ad-hoc, Level 2: consolidated, and Level 3: strategic. **(See Figure 5)**
Creating Mature Blended Education: The European Maturity Model Guidelines, Goeman, Katie; Dijkstra, Wiebe, Higher Education Studies; Vol. 12, No. 3; 2022	International	**The institutional strategy describes the extent to which BT&L is embedded in the vision, the educational model and goals of an institution.** At lower levels of maturity, a strategy is characterized by ad hoc decision-making. A strategically more mature approach ensures that various aspects of BT&L (e.g. legal, ethical, privacy and data management) are embedded in the standard rules and regulations, as well as action plans and guidelines of the HEI. BT&L in a formal HE context is strengthened by a shared vision of its actual and future purpose(s) (Korr et al., 2012). According to Chew and Jones (2009), there are two strategic aspects of particular importance: (1) a single strategy for BT&L promotes an institution institution-wide adoption without confusion; (2) an institutional strategy ought to be clear, simple and driven by research and support from an interdisciplinary center. Maturity level 2 of this dimension (Consolidated) requires an institution to offer dedicated support for BT&L to all teaching staff and students across departments. To attain the highest level of maturity (Strategic), institutional support must be fully integrated into the HE institution's standard services.

Creating Mature Blended Education: The European Maturity Model Guidelines, Goeman, Katie; Dijkstra, Wiebe, Higher Education Studies; Vol. 12, No. 3; 2022		**See Figure 6**, with the maturity level at course, program and institutional level. The course level consists of the following four dimensions and corresponding subdimensions:
		• **Course design process**
		    o Selection of blended learning activities and their sequence
		    o Selection of blended learning tools
		• Course flexibility
		• Course interaction
		• Course experience
		    o Student learning
		    o Study load

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		o Inclusiveness
		The program level consists of the following three dimensions and corresponding subdimensions:
		• Program design process
		  o Program coherence
		  o Alignment and coherence of blended learning tools
		• Program flexibility
		• Program experience
		  o Student learning
		  o Study load
		  o Inclusiveness
		The institution level consists of the following eight dimensions:
		• Institutional support
		• Institutional strategy
		• Sharing and openness
		• Professional development
		• Quality Assurance
		• Governance
		• Finance
		• Facilities

Creating Mature Blended Education: The European Maturity Model Guidelines, Goeman, Katie; Dijkstra, Wiebe, Higher Education Studies; Vol. 12, No. 3; 2022	International	**Dimension 4: Professional development** To provide dedicated pedagogical and technological professional development (PD) for staff, it is vital to create effective BT&L in HE (Owens, 2012). **It is important to note that besides organizing an array of training possibilities, the competencies and achievements of teaching staff in BT&L are formally recognized and awarded by the HEI.** At maturity level 2 (Consolidated), the PD of teaching staff is organized by way of online and offline workshops, short courses, showcases and other formats such as lunch meetings. In 'Building Blocks for Effective Professional Development', one finds scenarios, as well as thirty-thirty-seven building blocks for the PD of HE instructors (Zone Facilitating Professional Development for Lecturers, 2020). Blended education at the third maturity level (Strategic) signifies that all teaching staff have received dedicated PD. These are incorporated into mandatory training for educators, for example, as a part of University Teaching Qualifications or in a portfolio of continuous PD. The European Digital Competence Framework (Redecker & Punie, 2017) includes relevant guidelines in this regard. It presents six categories with 22 competencies deemed necessary for instructors to acquire when involved in digital education. In addition to this publication, one finds in 'Evolving as a Digital Scholar' three different tracks for continuous PD of teaching staff in HE (Van Petegem et al., 2021). Finally, the TPACK model has the merit of making explicit how 'technology-related professional knowledge is implemented and instantiated in practice' (Koehler et al., 2013, p. 18). Recognition and appreciation of teaching staff's PD is institutionally embedded at maturity level 3, in

INVITE

R5A1 - Review and report of the evidence on policies

		contrast to maturity level 2. Both may be organized, for example, by using the open-access resource 'The Career Framework for University Teaching' (Graham, 2018). Among other aspects, this source presents a framework and a reward system that HEIs may embed in their approach regarding teaching staff qualification, PD and career progression. Although it is not explicitly mentioned in the maturity model, it is also essential to embed CQI procedures in-house in order to evaluate PD initiatives. Furthermore, a peer review involving external organizations may critically assess the array of PD opportunities (see VSNU, 2018).
Creating Mature Blended Education: The European Maturity Model Guidelines, Goeman, Katie; Dijkstra, Wiebe, Higher Education Studies; Vol. 12, No. 3; 2022	International	**Dimension 5: Quality assurance** The fifth dimension, quality assurance (QA), refers to the process during which conditions related to BT&L are evaluated and revised on a regular basis. A common practice is first to define the expected outcomes and then assess the contribution of processes, systems and services in a HEI towards their achievement (Varlamis & Apostolakis, 2010). In this respect, one can rely on different frameworks stemming from the literature (see, for example, the PDPP model of Zhang & Cheng, 2012) or quality criteria, which are often benchmarked. QA shows improved maturity if the actual QA standards are grounded in a theoretical base that 'promotes coherence between quality assurance and improvement processes' (Barrie et al., 2005, p. 641). In line with the EMM, maturity level 2 (Consolidated) requires that dedicated QA processes are implemented. It is advisable to use frameworks for this purpose, like the generic 'Standards and Guidelines for Quality Assurance in the European Higher Education Area' (ENQA et al., 2015), alongside specific QA guidelines for blended learning programs such as the Irish 'Statutory Quality Assurance Guidelines' (QQI, 2018). Besides quality frameworks, validated instruments can also be used to evaluate courses or innovation projects in the quality assurance process. Lai and Bower (2019) provide an overview of validated instruments for evaluating educational technology. To reach maturity level 3, labelled as 'Strategic', quality assurance for blended education is encapsulated in the standard QA approach of an HE institution. Continual improvement is a taken-for-granted practice in the event that a 'quality culture' has been established within a HE institution. The report 'Quality Culture in European Universities: A bottom bottom-up Approach' (EUA, 2006) provides insight into this and related matters. Besides striving towards full, full-blown CQI or a quality culture, the third maturity level expects that an institution has a research agenda for its blended courses and programs. Individual researchers or a department may be involved for this purpose. Zeichner (2005) shows how to design and execute such a research agenda. Collaboration with other higher education institutions or research institutions can enhance research and the dissemination of findings and results. The 'UCD Quality

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		Framework' of University College Dublin (2018) is a relevant example.
Creating Mature Blended Education: The European Maturity Model Guidelines, Goeman, Katie; Dijkstra, Wiebe, Higher Education Studies; Vol. 12, No. 3; 2022	International	**Dimension 6: Governance** Governance refers to the way in which the vision and strategy of a HE institution are translated into rules, regulations, action plans and guidelines regarding blended education. Maturity level 2 (Consolidated) describes how these are developed and implemented. During their development process, different vital actors are involved: educators, students, policy officers, educational advisers, deans and (vice)rectors. Mirriahi et al. (2012) offer a helpful approach to identifying the key actors. Among other things, firm governance assumes that standardized models for BT&L are in place. It is strongly recommended that recognition is provided directly from the top management and that excellence in education and research is valued in relation to BT&L, as indicated by Chew and Jones (2009). **Maturity level 2 of the governance dimension** describes the final stage in terms of maturity level: sharing the models for blended course and program design within the institution. This will lead to a more standardized approach to developing blended education. **Maturity level 3 (Strategic) calls for policies, rules, regulations, action plans, and guidelines to be embedded in the standard governance structure of a HE institution**. There are no separate regulations or policies regarding BT&L; they are part of the default or standard education formats. The governance of a HE institution is also systematically reviewed and adjusted. In this context, Davies (2000) offers research methods to evaluate and review policies. Building upon level 2, critical actors at different levels of the institution are involved in the process of reviewing, adjusting and developing policies. This necessitates the involvement of a series of stakeholders among other police officers, students, instructors, and the educational management. Finally, the institution provides standardized models for the development of blended education.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Office for Students. Gravity assist: propelling higher education towards a brighter future. Bristol: Office for Students; 2021 feb. 160 p.	International	This report captures the results of 52 interviews with digital teaching and learning experts and higher education professionals from around the world, 145 responses for evidence, and a survey of 1,285 students and 567 teachers. **Redesign pedagogy, curriculum and assessment** • Design teaching and learning specifically for digital delivery using a 'pedagogy-first' approach. • Co-design digital teaching and learning with students at every point in the design process. • Seize the opportunity to reconsider how assessments align with intended learning outcomes. **Ensure digital access** • Proactively assess students' digital access individually and develop personalized action plans to mitigate any issues identified. • Build learning and procure technology around the digital access actually available to students, not the access they would have in a perfect world. **Build digital skills** • Communicate clearly to students the digital skills they need for their course, ideally before their course starts. • Create mechanisms that allow students to track their digital skills throughout their course and allow these skills to be recognized and showcased to employers. • Support staff in developing digital skills by incentivizing excellence and continuous improvement. **Harness technology effectively** • Streamline technology for digital teaching and learning and use it consistently as far as possible. • Involve students and staff in decisions about the digital infrastructure that will be used and how it will be implemented. • Foster a culture of openness to change and encourage calculated risk-taking. **Embed inclusion** • Review and evaluate whether a provision is inclusive and accessible. • Design inclusively, build a sense of belonging and complement this with tailored support for individual students. • Adapt safeguarding practices for the digital environment. **Plan strategically** • Ensure a strong student voice informs every aspect of strategic planning. • Embed a commitment to high-quality digital teaching and learning in every part of the organization. • Proactively reflect on the approach to the digital and physical campuses
Bozkurt, A. 2022. A Retro Perspective on Blended/Hybrid Learning: Systematic Review,	International	**One of the challenges of blended learning that educational institutions face is effective training support for instructors** (Rasheed et al., 2020). In order to effectively implement blended

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Mapping and Visualization of the Scholarly Landscape. Journal of Interactive Media in Education, 2022(1): 2, pp. 1–15. DOI: https://doi.org/10.5334/jime.751		learning, in addition to institutional support for instructors, developing the technological competencies of preservice teachers is equally essential (Archambault & Kennedy 2014; Mirriahi, Alonzo & Fox 2015). However, blended learning involves more than simply combining onsite and online learning. It requires developing a proper curriculum (Gedik, Kiraz & Ozden 2013) that takes into consideration many critical issues, such as the use of technology, technology provision, and assessment and evaluation strategies.
Groen, J., Ghani, S., Germain-Rutherford, A., & Taylor, M. (2020). Institutional adoption of blended learning: Analysis of an initiative in action. The Canadian Journal for the Scholarship of Teaching and Learning, 11(3). https://doi.org/10.5206/cjsotl-rcacea.2020.3.8288	Canada	Findings indicate that a **collaborative approach among administration and faculty to understanding the meaning of blended learning is essential to its** successful implementation. An institution's commitment to a blended learning transition must be supported across staff levels, spearheaded by senior executives, and informed by the views and experiences of a range of stakeholders, including students.
OECD (2018), "A brave new world: Technology and education", Trends Shaping Education Spotlights, No. 15, OECD Publishing, Paris,	International	Blended pedagogies bringing together online and offline instruction (e.g. "flipped classroom") are already increasingly used… The key is finding the right interplay of the different elements that influence student learning, including the learning goals, specific technologies available, students' prior knowledge and learning needs, teachers' professional competence and the context in which teaching and learning develop (Paniagua and Instance, 2018). This is more easily said than done, however. Leveraging the rapidly growing potential of educational technologies often implies reorganizing common teaching practices and rethinking teachers' role in the classroom. In fact, a number of important elements must go along with the introduction of technology in order for its potential to be realized. **It is the pedagogy of technology application rather than technology itself that makes a difference.** the level of confidence and digital skills of teachers and students in using ICT must be taken into account. Second, effectiveness of ICT in the classroom depends on how it is used – having access to it is not enough. The actual use that teachers make of technology and their ability to integrate it into their teaching to further their learning goals is what counts (Comi et al., 2016).

| Building ecosystems for online and blended learning: advancing equity and excellence in higher education in the Asia-Pacific: policy brief. UNESCO, 2021 | Asia and Pacific | **Promising Practices: Promoting blended learning step by step** In collaboration with UNESCO, the blended learning project at the University of Colombo, Sri Lanka, included all faculty deans, institute directors, and the campus rector. The project coordinator used an online course environment to share all materials and messages related to the project. The stakeholders received messages and notifications via emails once a month. During the first phase, the university identified two capable entities, the University of Colombo School of Computing (UCSC) and its Staff Development Centre (SDC), to conduct capacity development programs on blended learning. All permanent academic staff members were invited to participate in the training programs, and those who expressed their willingness to participate were grouped into a series of workshops. The workshops at SDC focused more on teaching-learning methods, while the seminars at UCSC supported participants in developing blended learning activities using their learning management systems. The project coordinator provided templates and guidance to prepare syllabi, as well as checklists to evaluate the new blended learning courses and course materials. At the end of the first phase, the participants who completed the workshops were awarded with certificates. The second phase of the project was conducted by selecting five entities, each of which created teams of senior academic staff as subject matter experts and junior academic staff as content/course developers. Each team conducted applied research on blended learning practices and developed one blended learning activity addressing a problem they identified in their traditional approach to teaching and learning. Schedules were prepared to identify deliverables and evaluate each stage of the blended learning development process. Finally, the best courses were selected from each entity, and the respective lecturers (course developers) were invited to present their course materials and evaluation results at a blended learning symposium. |
| Bekele, T. A., Karkouti, I. M., & Amponsah, S. (2022), Core Conceptual Features of Successful Blended Learning in Higher Education: Policy Implications | International | The conceptual frameworks' definitions of successful blended learning are highlighted next. Generally, the studies used terms such as successfulness, effectiveness, and impact interchangeably without making clear distinctions to refer to blended learning benefits. **The frameworks explicitly indicated that students take the most significant share of blended learning benefits. Indicators of effectiveness, successfulness, and impact included such student experiences as satisfaction, engagement, motivation, and attitude** (Bekele, 2010; Garrison, 2011; Johnson et al., 2008; Khan, 2010; Ojha & Rahman, 2021; Shea, 2007; Shea & Bidjerano, 2010; Wong et al., 2014); student performance in examinations (Bekele & Menchaca, 2008; Garrison, 2011; Johnson et al., 2008; Khan, 2010; Shea, 2007; Shea & Bidjerano, 2010; Wagner et al., 2008; Wong et al., 2014); knowledge acquisition, construction, and lifelong learning spirit (Andrade et al., 2022; Bekele, 2009b; Garrison, 2011; Lim & Wang, 2016; Mishra & Koehler, 2006; Shea & Bidjerano, 2010; Wagner et al., 2008; Wang et al., 2015); |

R5A1 - Review and report of the evidence on policies

INVITE

Co-funded by the
Erasmus+ Programme
of the European Union

		higher-order thinking including meta-cognition (Bekele, 2009b; Garrison, 2011; Lim & Wang, 2016; Shea, 2007; Wagner et al., 2008; Wang et al., 2015); course instrumentality (Johnson et al., 2008); rate of return from investment in blended learning (Bekele, 2009b; Khan, 2010); and sustainability and scalability of blended learning (Bekele, 2009b). These were the leading indicators of blended learning success, effectiveness, or impact that appear consistent with student-centered and constructivist approaches recently preferred in HE. What seemed missing are blended learning benefits for or effects on teaching faculty. However, the frameworks indicated that faculty characteristics were among the most significant factors affecting success (see the section that discusses factors). Given that students were the prime beneficiaries of blended learning, it was interesting to examine how learning was conceived or defined by the identified frameworks.
Bekele, T. A., Karkouti, I. M., & Amponsah, S. (2022), Core Conceptual Features of Successful Blended Learning in Higher Education: Policy Implications	International	**Factors Affecting Learning** The factors that affected successful blended learning were categorized at several levels **(See Figure 7)**. The most frequently cited were those related *to student characteristics (*Bekele, 2009b; Garrison, 2011; Johnson et al., 2008; Shea, 2007; Shea & Bidjerano, 2010; Wagner et al., 2008; Wang et al., 2015; Wong et al., 2014). Student conceptions of learning, teaching, knowledge, and technology and its role; their past experiences with technology; their knowledge and skills related to particular technologies; and their needs and expectations from courses were conceived to affect effectiveness partly. As students were designated as the prime beneficiaries of blended learning, it made sense that the most significant factors that affected learning were also found to be student characteristics. The second most frequently cited factors in*cluded institutional policy, strategy, goal and vision, infrastructure, support systems, faculty professional development* (Bekele, 2009b; Brezicha, 2022; Garrison, 2011; Khan, 2010; Lim & Wang, 2016; Wagner et al., 2008; Wang et al., 2015; Wong et al., 2014), and faculty characteristics (Bekele, 2009b; Garrison, 2011; Mishra & Koehler, 2006; Shea & Bidjerano, 2010; Wagner et al., 2008; Wang et al, 2015; Wong et al., 2014). Faculty conceptions of learning, teaching, knowledge, and technology and its role, as well as their skills and past experiences with technology, workload, and expectations, were conceived to affect effectiveness partly. This makes a strong case in support of considering faculty and institutions as the other major benefiting stakeholders in blended learning. *Pedagogical factors* (teaching and learning approaches, strategies, and methods, including social presence, interaction, engagement, and collaboration) were also conceived to affect the success (Bekele, 2009b; Garrison, 2011; Johnson et al., 2008; Khan, 2010; Ojha & Rahman, 2021; Shea, 2007; Shea & Bidjerano, 2010). It was interesting to note that the least frequently cited factors were those related to the easiness, usefulness, flexibility

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		and generally the capability of technology (Bekele, 2009b; Khan, 2010; Johnson et al., 2008; Wang et al., 2015), and the relevance and quality of courses (Bekele, 2009b; Lim & Wang, 2016; Wang et al., 2015
Bekele, T. A., Karkouti, I. M., & Amponsah, S. (2022), Core Conceptual Features of Successful Blended Learning in Higher Education: Policy Implications	International	**Institutional Factors** These denote the roles HE institutions play in formulating proactive technology policies and legal frameworks, acquiring new technologies, arranging regular training for students and faculty, creating new opportunities for faculty professional development, hiring teaching support staff, and providing all other logistics required in the successful execution of courses. University leadership needs to have appropriate views of technology and its role in learning, teaching, and knowledge production. The theory of connectivism (Siemens, 2004) aligns with our thinking. Suppose institutions are to thrive and remain relevant in the 21st century amid the pandemics, the knowledge explosion age, and the unforeseen future. In that case, there is a need to reason with Siemens (2004) that knowledge does not only exist in humans. Thus, non-humans (notably the computer) host large volumes of knowledge and make possible connections between the knowledge they host and humans (managers, instructors, students, and other stakeholders). HE institutions should, as a matter of necessity, procure new technologies and train all parties to use them effectively based on well-crafted and publicized policies. To avoid misconstruing the idea of blended learning and rendering faculty ineffective, HE institutions need policy initiatives that will warrant the training of its faculty. This also means creating a conducive environment where adequate provisions are made for both virtual and face-to-face teaching and learning engagements to thrive.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational	International	According to a series of studies on blended learning in institutions in the USA, three aspects of approaches have been identified, **namely strategies** (purpose, advocacy, implementation, definition, policy), **organization** (management, infrastructure, teacher professional development, course arrangement, evaluation), **and support** (technical, pedagogical, incentives).

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.		With the support of UNESCO, Lim and Wang (2016) proposed an implementation framework including nine aspects, namely vision and planning, curriculum, professional development, learning support, infrastructure, facilities, resources and support, policy and institution structure, partnership, research, and evaluation.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	**Setting goals and developing action plans are the start of an institution's implementation of blended learning and are the basis for evaluating the implementation's effectiveness** (Graham 2006). According to the developed goals and action plans, the institution sets up an organizational structure, issues corresponding policies and norms, and establishes a technical-support environment and staff-supporting system (Machado 2007). The institution then implements blended learning through redesigning programs and curricula and enhancing the staff's capabilities with information technology. The cultural atmosphere of implementing blended learning in institutions will gradually be created through this process. Finally, the use of effectiveness evaluation allows the institution to assess progress against the set goals, which can provide the basis for adjusting goals and action plans in the next round. Set goals and develop action plans: An institution determines the positioning of blended learning in student cultivation according to the requirements of the institution's vision and characteristics. Based on the current situation of blended learning, the institution sets the goals (including the overall objectives of implementing blended learning and operable objectives), as well as significant tasks and safeguard measures in action plans.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	Based on the research results and implementation cases of various countries, the framework for institutions to implement blended learning is proposed (Boelens et al. 2017). The framework consists of nine components **(see Figure 8)** 1. Set goals and develop action plans: An institution determines the positioning of blended learning in student cultivation according to the requirements of its vision and characteristics. Based on the current situation of blended learning, the institution sets the goals (including the overall objectives of implementing blended learning and operable objectives) and significant tasks and safeguard measures in action plans. 2. Set up an organizational structure: The institution should build and enhance the corresponding organizational structure for implementing blended learning to accommodate innovations in teaching and learning, refine procedures in the information age, and ensure the smooth implementation of blended learning. 3. Issue policies and norms: To promote the implementation of blended learning, the institution should formulate and issue relevant policies and standards, including the design and development, application, management, and evaluation of implementing blended learning. 4. Enhance capabilities with information technology among staff: To successfully implement blended learning, an institution must continuously enhance teachers', students', and management

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		staff's capabilities with information technology. Teachers' capacity is key to this implementation. The institution should develop a capacity-developing system that includes training content, implementation plans, safeguard measures, and evaluation. In addition, the institution should also improve leaders' information leadership and staff's capacity for information management and service. 5. Redesign programs and curriculum: To meet the needs of talent cultivation in the information age, the institution should reposition the goals of program development and redesign the content of courses and programs. 6. Establish a support service system: To ensure the implementation of blended learning among teachers and students, the institution should establish a support service system, including services to support teachers' teaching and students' learning. The primary role of teaching support services is to provide teachers with relevant information technology support services and offer students learning guidance, technical guidance, and humanistic care related to blended learning at the curriculum and institution levels. 7. Build a technical support environment: The development of the technical support environment required for blended learning is crucial to its effective implementation. The information technology environment and digital resources necessary to support the institution's implementation of blended learning include information infrastructure, the physical teaching and learning environment, and online learning spaces and resources. 8. Create a cultural atmosphere: The institution gradually creates a corresponding meaningful perspective and team atmosphere in the process. An excellent cultural atmosphere can promote teachers' recognition of the value of blended learning implementation and their willingness to participate in the process. 9. Carry out evaluation: Evaluation plans and systems must be developed in line with the goals set. Regular assessment throughout the process should be adopted to improve the implementation of blended learning.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	**The role of institutional leaders implies several possibilities. (See Figure 9)** Based on their current status, institutional leaders should confront the actual conditions of institutional development, especially the current situation of teachers, which will be considered the starting point for blended learning. Clarify the desired goals. **Institutional leaders need to be clear about what needs to be achieved in the institution's digital transformation** (e.g., reaching the transformation goals, building faculty capacity, etc.). Still, the goals are not unambiguous at the outset and require a gradual process of exploration. **Focus on teacher capacity development.** Institutional leaders should plan the institution with teacher guidance at its core. They are generally not directly involved in specific teacher training but rather exercise their responsibilities by introducing policies and norms, formulating development strategies, setting up special

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		programs, and conducting effectiveness evaluations to guide teachers to clarify their direction, improve their skills, motivate them, and broaden their horizons. **Implement blended learning in a phased and focused manner**. Institutional leaders should adopt a phased approach to promoting the construction of blended courses by focusing on different capacities, such as improving teachers' basic skills, design skills and innovation abilities, to achieve the milestones of blended learning implementation and showcase the results. **Provide support services**. Institutional leaders can support blended learning through management guarantee, quality assurance and human resource allocation. Specifically, the management and service support provided by staff in internal support units facilitates a suitable environment for the implementation of blended learning. The development of curriculum standards and requirements enhances the quality of blended learning. People outside the institution, such as experts, peers and technical staff from companies, can help provide practical support for the implementation of blended learning.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	In terms of setting policies and standards for implementing blended learning, there are at least four categories that leaders could take into consideration **(See Figure 10):** guidelines and standards on design and development that tackle the course development, resources and technical support. The second is on application and management, which tackles staff capacity building, managing their implementation of BT&L, and students blended learning behaviors. The third category is related to guidelines and standards on evaluation, which involves quality assessment, approaches to assessing blended learning and teacher performance assessment. The fourth category has to do with policies that involve incentives, ensuring identity, behaviors, effectiveness, security and finance.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	In order to actively **create a cultural atmosphere** for the implementation of blended learning, institutions can start from the following aspects. • **Focusing on the role of leaders**. Cultural development requires values-based leadership. The awareness, enthusiasm and initiative of institutional leaders for cultural development will determine the breadth and depth of institutional cultural development. Institutional leaders should integrate the long-term goals and milestones of blended learning implementation to develop the values of blended learning. In addition, institutional leaders should disseminate and implement these values throughout the institution; • **Emphasizing the role of public relations**. Public relations are an important force in guiding the psychology and behavior of teachers and students. The institution can increase the scope and intensity of publicity about blended learning through the intranet, newspaper, bulletin board and various new media channels, and guide teachers and students to understand the benefits and necessity of blended learning through mobilization meetings, expert lectures, teacher-student representative symposiums,

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		etc.; • **Using role models as examples.** It is necessary to bring into play the role of teachers as pioneers. The institution can introduce incentive mechanisms to recognize and reward those senior teachers who actively implement blended learning, thus encouraging them to take a leading role and • **Promoting Blended learning**. The institution must implement blended learning through routine actions, special ceremonies, and symbols.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	Therefore, **there are four stages for systematic institutional implementation of blended learning, namely, the unawareness stage, the awareness/exploration stage, the adoption/early implementation stage, and the mature implementation/growth stage**. Several key dimensions are involved in the systematic institutional implementation of blended learning, which demonstrates different characteristics at different stages of the reform (Porter et al. 2014). The key dimensions and their attributes at the four stages above are shown in Table 4.3. For an institution to pass from the stage of unawareness to the stage of mature implementation/growth, it has to go through three transitional processes. The focus is different in each process, namely the leaders, teachers and students of the institution **(see Figure 11) Transition I:** In the transitional process from the unawareness stage to the awareness/exploration stage, the focus is to enhance the institutional leaders' understanding of blended learning, formulate goals and plans for the reform and put them into action; **Transition II:** In the transitional process from the awareness/exploration stage to the adoption/early implementation stage, the focus shifts from leaders to teachers, that is, the implementation of training programs to enhance teachers' awareness, attitude, and ability to adopt blended learning. The key point is that the management of the institution needs to have a clear understanding of blended learning and to formulate plans to implement blended learning; **Transition III (The adoption/early implementation stage):** In the transitional process from the adoption/early implementation stage to the mature implementation/growth stage, the focus shifts from teachers to students. Teachers implement blended learning with the ultimate goal of improving learning effectiveness and information-based learning ability.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer	International	**Strategies Adopted by Institutions to Implement Blended Learning** For an institution to systematically implement blended learning, it needs to formulate specific strategies based on its predetermined goals, status quo, and characteristics. Given that different subjects can initiate reform, reform promotion strategies can be divided into two types: top-down and bottom-up approaches.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Nature Singapore; 2024 p. 159-98.		**The top-down strategy** The implementation of the top-down strategy refers to the case when the institution's top management initiates blended learning, conducts overall planning starting from top-level design, and gradually promotes the reform to the bottom level, i.e., teachers and students. The specific sequence for an institution to implement blended learning by adopting the "top-down" strategy is shown in **Figure 12**. Starting from (1) formulating goals and plans, the institution (2) sets up organizations, (3) issues policies and regulations, (4) establishes a support and service system, (5) builds a technical support environment, (6) enhances staff capabilities and reforms the curriculum system, (7) reforms the program and curriculum system, in order to obtain staged evaluation results, and continuously adjusts all aspects, during which (8) a corresponding cultural atmosphere is gradually developed. Then (9), an overall evaluation of the implementation effectiveness is generated for this stage. Based on the evaluation result at this stage, the institution revises (1) its goals and plans. Some of the abovementioned steps are iterative throughout the entire reform process (such as iterative revision of policies and regulations, improvement of information capabilities of staff in cohorts, iterative adjustment of the evaluation system, etc.). The main advantage of the "top-down" strategy is that it allows the institutions to formulate their overall goals and plans, making it possible for them to concentrate their strength and resources on designing and supporting the implementation of blended learning in a holistic fashion. Also, the promotion of blended learning can be conducted with clear time nodes and can achieve expected milestones. Such a strategy sets high requirements on the information leadership of institutional administrators and the management ability of its organizations. It also requires close cooperation of various departments to ensure the effective planning and implementation of all kinds of policies and measures (Porter and Graham 2016). I*n addition, since a top-down reform is mandatory, if a consensus cannot be reached during the process, resistance from teachers is likely to occur*.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98. .	International	**The "bottom-up" strategy** The implementation of the "bottom-up" strategy refers to the case in which teachers voluntarily explore blended learning first and expand the scope after receiving support from the institution. The sequence of implementing blended learning by adopting the "bottom-up" strategy is shown i**n Figure 13**. The premise of adopting this strategy is that (1) a technical support environment is established, (2) some teachers spontaneously explore blended learning, and in this process, (3) personnel capabilities are enhanced. When such teachers make up an increasingly large share of the entire faculty, (4) a cultural atmosphere of blended learning is developed in the institution. In this way, the institution is urged to (5) establish support service systems, (6) improve the technical support environment, (7) issue policies and regulations,

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

<table>
<tr>
<td></td>
<td></td>
<td>

(8) improve the organizational structure, and finally (9) formulate goals and plans at the institutional level and establish (10) establish an evaluation system for the effectiveness of implementation of blended learning. And then, based on the evaluation result, the (9) goals and plans are revised. The main advantage of the bottom-up strategy lies in that since teachers are the initiators of the reform, they share a common internal motivation to drive the reform. Following the trend brought about by the teachers, the institution then gradually promotes the implementation of blended learning, which is not likely to cause great turmoil in the institution. However, due to the lack of preliminary overall planning and solid organizational management, the nodes of the entire implementation of blended learning are clear, and the implementation process can be protracted. It can be not easy to achieve clear milestones in the short term. At the same time, because the demand for teachers is scattered and short-term, the institutional support services for teachers' blended learning implementation will not be sustainable and sufficient. Therefore, it won't be easy to ensure sustainable advancement of the reform with high quality.

Each of the two strategies mentioned above has its advantages and disadvantages. The institution can choose either one approach based on its own needs and conditions. In the process of promoting blended learning, the institution can also integrate the abovementioned two strategies. In this way, the institution still leads the progress of the implementation of blended learning and conducts overall planning and implementation. At the same time, the institution encourages teachers to adopt blended learning, allows a more extended transition period, and provides different training mechanisms and multi-level incentive mechanisms to guide teachers to implement blended learning sustainably.

</td>
</tr>
<tr>
<td>

Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.

</td>
<td>International</td>
<td>

Setting up an Organizational Structure
In order to ensure a smooth and stable implementation of blended learning, an institution needs to establish a customized organizational structure that addresses the management, processes and staff involved in the implementation. Such an organizational structure aims to clarify the roles and responsibilities of relevant departments and to establish a management process for blended learning. In this way, problems are more likely to be resolved efficiently and risks avoided during the process, contributing to the effectiveness of blended learning. In terms of the organizational structure for the implementation of blended learning, special committees and working teams should be added to the existing administrative and service departments in the institution (Moskal et al., 2013). According to organizational design theory (Daft et al. 2010), three aspects of work activity design, reporting relationships and departmental combination should be considered in the organizational setting. Work activities refer to the specific tasks assigned to each responsible department. Reporting relationships refer to the chain of

</td>
</tr>
</table>

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		command or line of authority to which members of the institution should report their work. The departmental combination includes functional grouping, divisional grouping, multi-focus grouping, horizontal grouping and virtual network grouping. Multi-focus grouping is often referred to as matrix grouping. It includes both horizontal and vertical grouping alternatives suitable for organizations with significantly changing environments and objectives that reflect dual requirements. Such a structure can facilitate the communication. Coordination is needed to respond to rapidly changing environments. As the implementation of blended learning involves many departments and staff in an institution, it lends itself to the departmental grouping of a matrix structure. To facilitate the systematic implementation of blended learning, the institution should establish a leadership group, an expert advisory committee, dedicated offices, and working teams to guide the relevant functional departments in coordinating design, implementation, and evaluation.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	**Evaluation of Institutional Blended Learning Implementation** In the institutional promotion of blended learning, it is necessary to evaluate the effectiveness of the reform, identify problems, and adjust the measures in the implementation process accordingly. **A Self-evaluation Framework for Implementation of Blended Learning in Higher Education Institutions** Based on Rogers' Diffusion of Innovations Theory, Graham and Robison (2007) examined the implementation of blended learning in universities in the U.S.A.... They proposed three categories with 12 dimensions of measures, namely *Strategy (*Purpose, Advocacy, Implementation, Definition, Policy), *Structure* (Governance, Models, Scheduling, Evaluation) and *Support* (Technical, Teaching Pedagogical, Incentives). In his subsequent research, he revised the "model" under "structure" into "infrastructure" and "professional development". In order to help higher education institutions evaluate the effect of their implementation of blended learning, he developed an institutional self-evaluation checklist based on the blended learning adoption framework. The checklist contains relevant questions around 12 indicators under the three categories: strategy, structure, and support, which can be used by higher education institutions to qualitatively judge which of the above three stages their implementation of blended learning is in just by answering these questions and to find out areas for improvement.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	**General Strategies for Systemic Reconstruction of Academic Programs** **Summary of Actionable Strategy Suggestions** (1) Implement blended teaching and learning mediums (2) Prioritize blending disciplines in academic programs (3) Learn from the international higher education context (4) Be competitive in emerging fields of science and technology innovation while preserving the advantages of developing non-STEM disciplines (5) Enforce standardization while allowing room for diversification to breed creative education innovations (6) Cultivate students' information technology literacy and digital citizenship (7) Participate in open education and collaboration between universities; promote curriculum sharing and collaborative innovation and research centers (8) Create channels between educational institutions and industries to give students exposure and improve education and market alignment (9) Implement modern methods of evaluating academic programs and providing an "institutional guarantee" of high quality
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	**Evaluation of the effectiveness of blended learning** Students' face-to-face learning and online engagement should be considered when evaluating blended learning, and both formative and summative assessments should be used. Both formative and summative assessments are used to gauge the effectiveness of blended learning. Formative assessment primarily examines the performance of students in the learning process, helping students to identify their learning status, change learning strategies, and improve learning results. Summative assessment measures how well students have learned after completing a course. The process of developing a scientific and appropriate course evaluation system necessitates constant experimentation and optimization. The dimensions of the evaluation model are the ways in which the student's learning effect is measured. Blended learning may make use of a wide range of evaluation methods. Voting and surveys might have a significant impact on assessing students' understanding of certain topics, such as questions in the classroom or on bullet screens. An online self-assessment, peer review, or online demonstration can be used to evaluate a chapter or module as a whole. Summative evaluation analyses whether students accomplish the learning objectives, course knowledge, and competence, and it may be done in various ways, such as an open/closed paper test or a paperless test, oral questions, classroom observation, self-evaluation and peer review, online live broadcast interaction, etc. (Gao et al. 2021).

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

| Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98. | International | **Feedback to students**

Feedback creates a connection between assessment and student growth. For students to learn more effectively, it is important to provide clear and concise feedback. The three pillars of feedback are timely feedback, real-time feedback, and feedback that is specifically tailored to the individual. It is important to provide students with timely and real-time feedback to address any difficulties they may be having with their learning. Providing students with feedback that is specifically tailored to their individual needs and circumstances is known as personalized feedback. Student gains may be boosted by providing them with frequent and detailed feedback on their progress in their studies. Feedback that focuses on how students solve problems rather than their final grades is extremely beneficial to students. To encourage students to reflect on their current learning situation, change their learning strategies, and gain an in-depth understanding of the material, it is important to provide students with timely and constant feedback on their progress. In addition, it can help instructors adjust their teaching methods and improve the quality of classroom instruction (An. 2014).

We have seen a shift in learning feedback due to educational big data: from delayed to instantaneous, subjectivity to objectivity, contextualizing to standardization, and from text to visualization as the feedback's format changes (Chen and Wang 2018). There are three possible components to feedback: the current state of learning, learning objectives, and strategies for achieving those objectives.

- Students' grades, knowledge, information, progress, and reasons for studying are some of the most important aspects of a student's learning status.
- Students' learning objectives may include mastery of current knowledge and mastery of related information.
- Instructor suggestions and recommendations provide strategies to motivate students to achieve their goals. Instructor suggestions are significant in helping students recognize problematic learning behaviors and providing learners with feasible learning approaches.

The recommendation for instructors to recommend learning materials, peer resources and activity alternatives for students (Chen and Wang 2018).

By analyzing learning data, student portfolios will be more accurate, and the academic early warning and support system will be more intelligent. The support system will become more tailored and accurate. Students' tailored learning paths have become more precise thanks to the use of technology, and each learner's unique learning priorities and obstacles have become more clearly defined. More importantly, these support systems may meet students' learning demands, give them tailored assistance and exact answers, and improve their learning efficacy. The Future Learn platform, for example, has taught over one |

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		million students from all over the world, amassed countless amounts of data about the usefulness of the content, and then used patented algorithms to determine exactly what the learners themselves need to learn. The establishment of a working group (including the heads of the institutions) and a framework for cooperation is necessary to help students overcome their real-life issues. There should be some organizations set up to help troubled students, and the person in charge of support should be identified, and the support policy should be publicized in a timely and effective manner. Learner support is expected to increase in scope as intelligent technology develops, and learner support is expected to be improved to better satisfy students' different learning needs in the future.
McCarthy, S., & Palmer, E. (2023). Defining a practical approach to blended learning in higher education: A systematic review. Australasian Journal of Educational Technology, 39(2), 98–114.	International	**Implications for practice or policy:** • University decision-makers should define an institutional approach to blended learning and foster a common understanding of what success will look like. • Institutional strategy must carefully consider the multifaceted roles of students, academics and administrators within blended learning. • Blended learning adoption should be measured using criteria and descriptive standards to evaluate framework implementation.
McCarthy, S., & Palmer, E. (2023). Defining an effective approach to blended learning in higher education: A systematic review. Australasian Journal of Educational Technology, 39(2), 98–114.	International	As such, an appropriate institutional definition might consist of the following: Blended learning involves the thoughtful and ongoing development of curriculum, maximizing the effectiveness of the teacher as a facilitator of knowledge and enabling student learning where, when and how they are best able to receive it. Although this definition remains broad, it is appropriate at the institutional level. It references the need for thoughtful integration of teaching approaches, calls out the role of teachers as expert facilitators and acknowledges that students need effective mechanisms in the form of space, time and technology to participate effectively in the teaching and learning process. **What is the most effective framework associated with blended learning in higher education?** An institutional framework needs to account for a range of factors, including learner needs, aspects of effective curriculum development and delivery, technology advantages, support mechanisms, organizational preparedness, stakeholder roles, risk factors and processes for continuous improvement (Adekola et al., 2017; Garrison & Vaughan, 2008; Lim et al., 2019; Mirriahi et al., 2015; Pima et al., 2018).

McCarthy, S., & Palmer, E. (2023). Defining an effective approach to blended learning in higher education: A systematic review. Australasian Journal of Educational Technology, 39(2), 98–114.	International	The review of the literature associated with the framework theme suggests that **there is a clear difference between frameworks addressing blending at the activity, course and program level and those that address blending at the institutional level.** Just like conceptual clarity, an institutional-level understanding requires a broader framework that provides an effective platform to support flexible delivery. Those that do not address institutional-level blended learning are effective teaching models used to guide the way specific subject matter is taught. As such, an institutional framework should be considered the space in which blended learning can take place, providing a framework with associated criteria and standards by which academic practice can be measured. The most effective blended learning framework would, therefore, address the full range of factors identified in this study; this should be supported by an institutional-level understanding of what each factor means and how these will be supported by all stakeholders (i.e., students, teachers, and administrators). **See figure 14**
McCarthy, S., & Palmer, E. (2023). Defining a practical approach to blended learning in higher education: A systematic review. Australasian Journal of Educational Technology, 39(2), 98–114.	International	**How should blended learning be implemented within universities?** Although it is recognized that there is no single approach to blended learning, there is a desire from higher education institutions to seek a pathway that enables them to reshape their program and course design, transform teaching methods and develop a blend that meets broader learning and teaching need in the form of student access and tailored learning (Galvis, 2018; Smith & Hill, 2019). A strategy that addresses the institution as a whole is required for implementation at a broad scale; however, difficulties lie in how this finds its way down to the underpinning course-level pedagogy and teaching activities undertaken inside and outside of the classroom (Graham et al., 2013). Although ten studies were identified and aligned with the blended learning implementation theme in this review, not all of these had a clear focus on institutional leadership and decision-making. Four studies referenced the same institutional adoption framework (Galvis, 2018; Graham et al., 2013; Porter et al., 2014; Porter & Graham, 2016), while two others targeted administrative considerations for the successful implementation of blended learning (Vaughan, 2007; Vaughan et al., 2017). The remaining studies referenced a mix of framework factors with implementation and adoption recommendations that were split across blending levels (activity, course, program and institution). This was particularly evident in the systematic review carried out by Anthony et al. (2020), who investigated constructs and factors affecting blended learning uptake by students, lecturers and administrators, comparing the popularity of adoption models largely centered around the use of technology in teaching practices. The early work of Garrison and Kanuka (2004) also discussed implementation across the four blending levels and had many similar themes to the later work of Graham et al. (2013) when addressing organizational and leadership issues. Moskal et

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		al. (2013) offered insight into the need for a common language. They highlighted the organizational benefits of blended learning in terms of scalability beyond the institution, arguing that the missing ingredient for implementation is often mid-level capacity needed within faculty to drive support at the course and program level. Chaudhri and Gallant (2013, pp. 83–84) highlighted the potential for multiple approaches to the implementation of blended learning, stating that there was no set recipe, but noted five critical factors required to support implementation: (1) selection of the suitable model of blended learning (2) redesign of curriculum to align with blended learning (3) redesign of assessment tools (4) training of academic staff (5) implementation of information technology infrastructure. These factors have many similarities to the strategy, structure, and support adoption model proposed by Graham et al. (2013), strengthening their argument for this thematic approach to implementing blended learning. Although common themes have been identified in this review, it is also evident that there is no consistent approach to institutional implementation and the research surrounding it. Indeed, Graham et al. (2013) reported that there was little data available to show how well-blended learning has been integrated into higher education, mainly due to the way it is defined and subsequently measured. Despite this mixed approach to implementation, it is clear that a means of measuring framework adoption is required to determine effectiveness and maturity within an institution. The work of Graham et al. (2013) is highly referenced throughout the literature identified in this study, and their 3-stage adoption framework clearly identifies levels of blended learning implementation as well as crucial strategy, structure and support issues that should be addressed at the institutional level (**See figure 15**)
McCarthy, S., & Palmer, E. (2023). Defining an effective approach to blended learning in higher education: A systematic review. Australasian Journal of Educational Technology, 39(2), 98–114.	International	In practice, t**he final application of blended learning is an individual endeavor. It relies heavily on implementation by the teacher, who is ultimately the subject matter expert, along with those directly supporting them in carrying out robust educational design. As a result, any institutional strategy should carefully consider the multifaceted roles of students, academics and administrators and their ongoing importance in the teaching and learning dynamic** to develop an institutional definition that provides both support and flexibility. To this end, it may be most effective to focus less on the ratios of blended learning used and more on the purpose and roles (humanness), technology intervention or lack thereof (fidelity), including when and how they are used (space and time) in order to describe their direct impact on individual student learning and develop a community approach to blended learning. To implement this effectively, an institutional strategy requires a vision and associated policy that enables the development of a

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		definition and framework that fosters a shared understanding of what success will look like. This vision needs to be championed at all levels to facilitate a cultural shift that clearly acknowledges the combined framework factors driving the teaching and learning process. From a practical standpoint, this acknowledgement requires the development of a significant and evolving structure that supports a holistic approach promoting teacher development and student support, tools and infrastructure, technology, and pedagogy, as well as an effective way to measure adoption. This structure helps to create an environment that encourages the most significant level of uptake and informs the development of a systematic approach that continues to influence the future direction of blended learning within an institution. If executed well, a successful institutional framework can facilitate blended learning adoption that results in a paradigm shift altering the very nature of teaching, enabling students to learn in a manner that best suits their needs and provides flexibility and scalability opportunities for the institution.
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Digital modes of teaching and learning can solve problems higher education is facing today** and will offer new opportunities for teaching and learning in each of these areas. They will innovate and even transform higher education provisions in the course of next years: - Blended degree education will r**aise the quality and efficiency of degree education,** facing large numbers of students and lower staff/student ratios. Blended and online education will upscale continuing education and continuous professional development (CPD) by offering flexible courses with a large outreach that responds to the needs of learners at work who face longer careers and career shifts. - MOOCs are offered online only, p**roviding massive and open learning opportunities for al**l, promoting engagement in the knowledge society. - Blended and online systems are important to ac**celerate innovation and to keep pace with the needs of learners of all ages and of society.**
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	For this PLA we use a common understanding of blended as "learning that happens in an instructional context which is characterized by a deliberate combination of online and classroom-based interventions to instigate and support learning." (Boelens, Van Laer, De Wever, & Elen, 2015). The goal of blended education is: **1) more effective pedagogy.** **2) increased convenience and access.** **3) increased cost effectiveness.** Blended teaching and learning practice in degree education is increasing, primarily because of the ubiquitous presence of digital technology and the increase in the digital skills of both students and teachers. EUA studies revealed that a majority of HEIs have

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		established blended learning courses and programs. However, more than half of the institutions applied blended teaching and learning in 'some' faculties or by 'individual teachers' (Gaebel, Kupriyano et al., (2014). The Changing Pedagogical Landscape study made clear that even within frontrunner institutions, only 20% or less of the courses are blended (Haywood, Conelly, Henderikx, et al. 2016). Moreover, many course models used just replicate face-to-face courses or don't meet the requirements of high-quality course design.
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Positive factors for succeeding blended teaching and learning** implementation in degree education were: t**he strong presence of digital technology at universities and digital skills of students and teachers; the availability of strong learning environments; good practices in blended teaching and learnin**g, although incrementally dispersed; the experience with MOOCs; the need for enhancing quality for large student numbers of students; the need for covering all types of learning; where applicable a strong institutional leadership. These positive factors are important for anchoring change processes. Negative factors were: academic culture not in favor of innovation; attitudes of students and staff towards online learning; leadership not engaged for innovation by blended teaching and learning; no policies, strategies, concepts, frameworks; misconceptions on blended/online teaching; low awareness of innovative pedagogies; blended teaching and learning competences of staff not enough developed; no adequate solutions for the changing workload of staff; partial innovations only, no maturity model; no incentives for career development; no substantial budget allocated for innovation; weak governmental strategies and support.
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Institutional strategy and cultural changes** Challenges for universities are multiple, with institutional leadership and strategies being core conditions for the development of blended degree education and the significant extension of continuous education and open education (MOOCs). Generally, the infrastructure of universities (brick and mortar) and the technologies don't reflect the opportunities of digital education. Digital education requires new educational models and a new mindset. Staff fears a higher workload. Staff support is needed. Digital education should be incorporated into the university's quality assurance system. Universities face capacity problems with regard to staff innovation (small number of faculty members, small numbers of professionals. Ways forward can be: • Appoint a vice-rector for innovation, showing leadership with the support of the entire board and at all decision levels of the university (cultural change/mindset) • Develop strategies for continuous innovation in the institution, involving digital education in faculties and degree programs, the extension of constant education and continuous professional development and open education

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		• Promote cultural changes and mindset to support the new institutional strategy • Organize internal funding for innovation (grass-root funding, seed money, project funding)
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Pedagogical models and design for blended courses** Course design for blended education is different from face-to-face education. This requires new pedagogical models based on evidence and sound theories on course design, teaching, and learning (Laurillard, 2012, 2015; KVAB, 2015). Ways forward can be: • Create openness and awareness of the benefits and opportunities of blended learning based on reports of good practice, reports on concepts, theories and evidence on course design • Validate, align and engage in a maturity model for course design with different stages of development • Transform gradually lecture-based courses in blended learning courses • Publish patterns of good practice of course design in the institution(s) • Create (inter-institutional) subject-bound groups to exchange good practice • Deracinate mis-concepts and redress "implicit theories" • Create awareness of the gap between current practice and advanced course design/maturity in blended learning
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**New expertise and staff support are needed.** One significant strategy regarding innovation and blended learning concerns the development of new expertise on blended teaching and learning within the institutions and the continuous development of staff. Trans-institutional initiatives and governments can support this, and teaching and learning departments play a pivotal role in this. Ways forward can be: • Empower teaching staff through continuous professional development on blended learning and innovation using a maturity model. Teaching and learning departments organize CPD for teaching staff • Teaching and learning departments learning support staff in course design teams and identify patterns of good practice in their institution and the partnership • Create peer groups and subject area networks • Teaching and learning departments are organizing institutional evaluation and research on the design, implementation and effects of blended teaching and learning • Develop multimedia labs.
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European	International	**Including blended education in quality frameworks** In many institutions, blended and online education is not yet systematically integrated into the quality framework of universities. This has an impact on the pedagogies and learning processes of institutions and probably on the quality of learning outcomes. ENQA already has set up a working group to define a

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).		set of ENQA recommendations, guidelines, and policies. Ways forward can be: • Revision of the internal quality system, including blended and online education • ENQA developing recommendations, guidelines and policies for institutions • Quality assurance agencies sharing good practices between them
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programs in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Quality assurance of online and blended education: challenges and ways forward** The major challenge regarding quality assurance of higher education in the future is to find the right balance between the assessment of high-quality learning outcomes, the quality of the learning processes leading to those higher-quality learning outcomes, and the quality of institutional interventions leading to continuous improvement and innovation of the institution. This also implies that blended and online programs should support quality criteria. Ways forward can be: • A template/framework with specific criteria and indicators/ guidelines for blended and online education, aligned to the recommendations of the ENQA Working Group, which is currently doing its work • Providing guidance (standards & guidelines) to institutions which want to set up blended or online courses • Sharing good practices (agencies supporting agencies) • Developing criteria for assessing innovation (level of innovation) by adopting a maturity model for blended education • Inviting at least one member on the review panel with experience in blended and online / distance learning. Panel members should have the competence to assess blended and online teaching and learning and consider (listening to) the feedback of all stakeholders (learners, teachers, institutional leaders). • Distinguishing blended and online teaching and learning from misconceptions • Start from learning outcomes and assess if the teaching mode (any, incl. blended) is appropriate to achieve that outcome • Assess also elements which are not straightforward to measure • Evaluate teacher competencies for blended and online teaching and learning • Provide a (international) database of experts and eventually look for reviewers/evaluators abroad • Create an open mind to new ideas / new methods / new pedagogies
European Education Area. Digital education action plan (2021–2027). European Commission; 2022.	Europe	**• Digital competence should be a core skill for all educators and training sta**ff and should be embedded in all areas of teacher professional development, including initial teacher education. Educators are highly knowledgeable and skilled professionals who need the confidence and skills to use technology effectively and creatively to engage and motivate their learners, support the acquisition of digital skills by learners and ensure that digital tools

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		and platforms used are accessible to all learners. Teachers and trainers should have access to ongoing opportunities for professional learning and development tailored to their needs and their discipline. Digital teaching methods and innovation in digital education should be embedded throughout all initial teacher education programs and promoted in the education and training of youth workers. • **Education leaders play a key role in digital education.** They need to understand how and where digital technologies can enhance education, provide appropriate resources and investment, empower educators, learn from best practices, and support relevant organizational change and a culture that values and rewards innovation and experimentation. Education and training systems need to evolve and adapt, and this requires all players, including institutional leadership and decision-makers in policy, to lead this change.
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. EADTU-ENQA Peer Learning Activity on blended and online education. EADTU-ENQA; 2017 p. 3. (Peer Learning Activity).	Europe	Blended degree programs will be standard offerings in degree education in the future. Blended education can be defined as learning that happens in an instructional context, characterized by a deliberate combination of online and classroom-based interventions to instigate and support learning. **The goals of blended learning are course design according to more effective pedagogies, increased convenience and access for the learners, and** increased cost-effectiveness.
Henao, K., Samoilovich, D., The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	Summarized from expert interviews, the distinction between full virtual, hybrid, or blended learning modes becomes essential. According to Michaels Gaebels, the European University Association defines Blended as a modality where all students engage in in-person and online classes. In contrast, Hybrid involves some students attending in person and others participating virtually concurrently. These two approaches entail distinct technological and skill prerequisites. Blended learning combines online training with face-to-face components, whether synchronous or asynchronous. Conversely, Hybrid Learning combines in-person and online students simultaneously. This modality poses challenges, as teachers and students often favor those present in the classroom, potentially neglecting online participants. **Moreover, scaling Hybrid Learning can be problematic. On the other hand, Blended Learning, primarily used in continuing education, has demonstrated efficacy, enabling synchronous and asynchronous participation in distance courses.** Regarding the institutional decision, there is a shared opinion that a minimum percentage of classes must be kept face-to-face to guarantee the students' feeling of belonging to the institution and contact among them and with their professors. There is a shared opinion among the interviewed experts that virtual learning in Higher Education will not replace traditional universities; they can be complementary as they fulfil different needs and create other possibilities. Teachers and students should have an active role in selecting the percentage of online/virtual and in-person. The

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		subject/academic field is also critical to deciding the rate of virtuality of a given course.
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	At KU Leuven, for example, different spaces were built and equipped for flexible hybrid teaching purposes. Joint systematic research is carried out in order to assess the impact of such spaces on teachers' and learners' experiences (Raes et al., 2019; Raes et al., 2020). Choosing consciously between different classroom setups can be challenging, but tools like the Education Spaces Viewer (TU Delft, 2020) can assist when doing so. Furthermore, the e e-book 'Learning Spaces' (Oblinger, 2006), the 'Cookbook Education Spaces' (Van der Zanden et al., 2018), as well as the 'UK Higher Education Learning Spaces (JISC, 2018) provide readers with inspiring ideas and guidelines in this regard.
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	**All tools offered by a HE institution should align with those used in BT&L courses and programs**. Alhogail and Mirza (2011) describe the implementation of a VLE from a change management perspective.
Henao, K., Samoilovich, D., The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	According to McKinsey research (Child et al., 2023), there are six criteria for higher education institutions to consider when **redesigning the online student experience:** • What kind of scale is the institution looking to achieve? (e.g., increasing student adoption in underserved segments). • Customization: What level of customization does the university/college want to achieve (e.g., greater customization to use consumer data, support cross-selling, and enhance the product offering over time)? • Human resources: Does the institution have the necessary talent and skills within the university to allow in-house building? • Speed to market: What is the expected timeline? (e.g., building a minimal viable product that can be launched in a short time frame is critical in markets where competitors are building similar offers), • Regulation: Are there local legal constraints that could affect the program's design (e.g., regulation limiting the number of virtual hours in undergraduate programs)? • Investment: What is the budget? Are there financial constraints?

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

UNESCO. Building Ecosystems for Online and Blended Learning: Advancing Equity and Excellence in Higher Education in the Asia-Pacific. Policy Brief. UNESCO Bangkok; 2021.	Asia and Pacific	Together with experts throughout Asia and the Pacific region, UNESCO and the Education University of Hong Kong developed an an**alytical tool for higher education leaders to self-assess their level of readiness to deliver blended learning for quality higher education. The self-assessment process is based on eight dimensions (see Figure 16)** 1. Institutional vision and philosophy: Clear vision grounded within an institution's philosophy for learning and teaching in blended learning environments. 2. Curriculum: Systematic curriculum consisting of established competencies (i.e. knowledge, skills and attitudes that are underpinned by values) that learners should acquire through formal and non-formal contexts. 3. Professional development: Professional development of teaching staff to ensure successful implementation of blended learning skills. 4. Learning support: Learning support to bridge the digital divide in higher education institutions. 5. Infrastructure and support: Establishing an appropriate plan for the technological infrastructure, facilities, resources and support. 6. Policy and institutional structure: Driving organizational change and development through policies that are supported by appropriate institutional structures. 7. Partnerships: Building internal and external partnerships; and 8. Research and evaluation: Research and evaluation to assess lessons learned throughout higher education institutions. Based on these dimensions, UNESCO and project partners developed an online institutional self-assessment tool to review the readiness levels for quality teaching and learning and effective institutional governance of blended learning practices.
Henao, K., Samoilovich, D., The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	**Institutional integration** • The digital agenda's sustainable development requires collaboration between university management, teachers, and, in general, all involved stakeholders • Creating mechanisms that stimulate co-development, peer learning, and transversal exchanges. • Consultations with EUA members show that strategies and structures for digital education should be developed in an evidence-based manner, including institution-wide self-assessment of the digital and physical environment. This process should take into account educators, students, and technical and administrative staff and consider the impact on the institutional community. This will allow institutions to identify good practices and then scale and multiply them across the whole system, considering differences in institutional profiles and missions.
Anthony B. et al. Blended Learning Adoption and Implementation in Higher Education: A Theoretical and Systematic Review. Technology,	International	This study systematically reviews synthesizes and provides a meta-analysis of 94 BL research articles published from 2004 to 2020 to present the theoretical foundation of BL adoption and implementation in higher education. The main findings of this study show the constructs and factors that influence students, lecturers, and administration in adopting BL in higher education.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Knowledge and Learning. jun de 2022;27(2):531-78.		Moreover, findings suggest that the BL practices to be implemented comprise face-to-face activities, information, resources, assessment, and feedback for students and technology, pedagogy, content, and knowledge for lecturers. **Figure 17** shows the constructs and factors related to the adoption of blended learning in higher education by the three main actors: teachers, students, and administrative staff.
European Education Area. Digital education action plan (2021–2027). European Commission; 2022.	Europe	**Digital education content and training in digital skills – including digital teaching methods – will be essential for staff.** They will benefit from more robust support for online, in-person or blended teaching, depending on the context and needs of the learner. Educators should be empowered to adopt innovative methods, be aware of the environmental and climate impact of digital technologies and services to make the most sustainable choices, collaborate, engage in peer learning, and share their experiences. A trusted digital education ecosystem requires high-quality content, user-friendly tools, value-adding services and secure platforms that maintain privacy and uphold ethical standards. Accessibility, inclusiveness and learner-centred design are vital. The development of European digital educational content should promote the highest pedagogical and academic quality and respect the diversity and cultural richness of the Member States.
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	**Sharing and openness** **The creation of a culture of openness and sharing of practices, materials, and courses improves cost-efficiency and increases quality in an institution's blended approach**. Policies that facilitate communities and distribution platforms may help an HEI increase enrolment and gain international recognition (Jansen et al., 2015). To achieve this, it is recommended that open education practices propagate the institution's vision and mission (Dos Santos, 2019). On the second maturity level (Consolidated), professional communities are facilitated. These may be inspired by models such as the 'Community of Practice' for strengthening networking and sharing of experiences between instructors (Wenger, 2011; Farnsworth et al., 2016). Platforms may facilitate such actions, for example, within one institution (e.g., Online Learning Hub at TU Delft, CELT Toolboxes at UTwente or OpenED from The University of Edinburgh). Also, at an international level, platforms were created with similar objectives (e.g., SURF Communities, EADTU Empower). Besides this, standardized templates enable an institution to exchange best practices (Alwazae et al., 2015). By establishing an open courseware (OCW) website, an institution demonstrates a mature dimension of sharing and openness. Examples include MIT, the University of Michigan, Harvard and TU Delft. At maturity, level 3 (Strategic), professional communities are more purposefully built and maintained, for example, by 'community facilitation teams. Such teams schedule meetings, organize events, edit publications, and so forth. Moreover, pertinent QA regarding sharing and openness is in place. As such,

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		the standards and processes may be based on a framework such as 'OERTrust' (Almendro & Silveira, 2018) or the 'Quality Assurance of Open Educational Resources' (SURF).

4.1 Financial resources & infrastructure

Source-Reference	Country-Region	Strategies/Actions
van Valkenburg W, Dijkstra B, Delft University of Technology, The Netherlands and Katie Goeman, van Rompaey V, Poelmans S. European Maturity Model for Blended Education. 2020 may, 20 p.	International	**Besides external funds (e.g., from the government), it is important to allocate internal budgets to innovation**. As Schopenhuizen and Kaltz (2020) indicate, when experimentation is not only dependent on external funds, but it will also contribute to the increase of the adoption, implementation and long-term sustainability of initiatives. Budgets can be used for hiring (more) staff and student assistants, conducting experiments and pilots, engaging an innovation team, procuring new educational tools, awarding grants, prizes, and so on. Financial support, project funding, incentives or other rewarding initiatives contribute to mature blended education (Oh & Park, 2009). In order to reach maturity level 2 (Consolidated), financial resources are allocated ad hoc to develop, support, stimulate and improve blended learning and teaching.
Soncin M, Agasisti T, Frattini F, Patrucco A, Pero M. The Costs, Quality, and Scalability of Blended Learning in Postgraduate Management Education. Journal of Management Education. diciembre de 2022;46(6):1052-85..	Italy	As suggested by Levin and McEwan (2000), each of the costs of teaching management programs can be classified under one of four headings: (i) staff, factoring in every person who contributes in any capacity to delivering the program. (ii) materials, factoring in all the equipment of any kind required to offer the program; (iii) services and contracts, factoring in any additional costs resulting from the involvement of external providers; and (iv) facilities, factoring in any physical locations required for the program. **Costs, quality and scalability: three parts of a whole** Moreover, costs are not a dimension per se, but rather part of what has been defined as the "iron triangle" (Daniel et al., 2009; Ryan et al., 2021), which sees cost as one of the immovable vertices of a triangle, together with quality and access (scalability). Whenever one vertex moves, the other two are impacted as well.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Maloney S, Nicklen P, Rivers G, Foo J, Ooi YY, Reeves S, et al. A Cost-Effectiveness Analysis of Blended Versus Face-to-Face Delivery of Evidence-Based Medicine to Medical Students. J Med Internet Res. 21 of july 2015;17(7):e182.	Malasia & Australia	Under the study settings, **a blended learning approach to training practitioners to be competent in applying evidenced-based medicine was more cost-effective to operate than the traditional face-to-face model**. Furthermore, the BL approach resulted in significantly greater increases in student attitudes toward EBM and self-reported use of EBM in clinical practice. When taking into account the cost of transitioning to the new format, the benefit of the cost-effectiveness is realized by the institution only after the third operational year. The primary drivers of cost-effectiveness were the low-cost online resources chosen, decreased staffing levels, and economies of scale. Implementing BL is not without its risks though and requires a significant investment cost in tailoring the teaching and learning resources to the Web-based environment during the transition to this approach. Using a BL approach will not necessarily be cost-effective, and consideration should be given to the blend utilized, staff expertise, and the educational setting. Health professions' education and educational research has developed into a respectable scientific discipline due to the shift toward scientific rigor and peer-review. To maintain its relevance and accountability and to improve the adoption of new educational approaches and innovations, the next cultural shift in this field needs to be toward fiscal responsibility alongside learning outcomes, such as measuring outcomes of cost-effectiveness alongside measures of educational outcomes and the learning experience. The purpose of this shift is not to cut costs or to increase spending but simply to improve value. Under the study conditions, a blended learning approach was more cost-effective to operate and resulted in improved value for the institution after the third-year iteration, when compared to the traditional face-to-face model**. The wider applicability of the findings are dependent on the type of blended learning utilized, staffing expertise, and educational context.**
Anthony-Okeke L, Cockayne H, Edwards M, Lomer S. Estimating the cost of blended / hybrid post-pandemic teaching and learning. 2012.	UK	Hybrid and/or blended teaching and learning is a privileged mode which requires redefining 'contact time' as potentially: • Synchronous and asynchronous • On and offline • Guided and independent learning: Incorporating the principles of Active Learning into Blended Learning for an Active Blended Pedagogy. Bringing students on board in a partnership model that makes the principles of the pedagogy transparent and engages students as educational designers.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		Assessing the cost of pedagogy and learning design, development and delivery in terms of: • Staff training costs • Resource development time • Testing and piloting • Ongoing delivery Ensuring that all students have a computer and can get online, which is often incorrectly taken for granted.
Anthony-Okeke L, Cockayne H, Edwards M, Lomer S. Estimating the cost of blended / hybrid post-pandemic teaching and learning. 2012.	UK	While online learning has been unpopular with many student and parent groups and perceived as second class, this is often as a result of the perception that the learning outcomes cannot be equivalent to a traditional face-to-face delivery. Active blended learning is our recommended response to this issue of perception, demonstrating the value through interactivity inherent in the design. However it is imperative that appropriate planning and resourcing goes into designing the active blended materials as blended learning that is not active is likely to be unpopular with students and have limited benefits for students' success and lasting learning outcomes. The promise of active blended learning offers a more judicious choice of pedagogical approaches, and administrative and technological systems and infrastructure that support an active blended mode of delivery. For a successful active blended programme the design, development, and delivery all need to be costed with awareness of the real demands of the process. There is likely to be an up-front and ongoing cost to ensure all students and staff have access to appropriate digital devices, infrastructure and training to successfully rethink their practice and support learner-centered experiences as we reimagine and re-engage with the next chapter of higher education.
van Valkenburg W, Dijkstra B, Delft University of Technology, The Netherlands and Katie Goeman, van Rompaey V, Poelmans S. European Maturity Model for Blended Education. 2020 may, 20 p.	International	In order to reach **maturity level 2 (Consolidated)**, financial resources are allocated ad hoc to develop, support, stimulate and improve blended learning and teaching. Besides external funds (e.g., from government), it is important to allocate internal budgets to innovation. As Schopenhuizen and Kaltz (2020) indicate, when experimentation is not only dependent on external funds, it will contribute to the increase of the adoption, implementation and long- term sustainability of initiatives. Budgets can be used for hiring (more) staff, student assistants, for conducting experiments and pilots, for engaging an innovation team, for procuring new educational tools, to award grants, prizes, and so on. A study with five HE institutions in the Netherlands shows that funds are mostly used to employ people.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		Approximately half of a regular innovation budget (40 to 70%) goes to providing various types of support. Depending on the institution, between 15 and 40 percent are invested in facilities, licenses and tools (SURF, 2018). Also, some Dutch institutions have 'education fellows' who experiment with innovative methodologies and technologies. They receive a budget for this purpose and become a 'champion of innovation' (Centre for academic teaching, 2020; TU Delft Teaching Academy, 2020). This approach accelerates innovation. **Figure 18**
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	**Maturity level 3 (Strategic) entails that financial resources are structurally allocated to innovation and BT&L, in addition to occasional or recurring funds.** Nevertheless, it might not be easy to distinguish between both types of budgeting (SURF, 2018). Therefore, it is crucial to systematically assess and finetune the HEI's finances in this regard. This is executed by using explicit criteria, budgets, results and timelines for projects (e.g., project plans), support staff (e.g., personal development plans), pilots (e.g., pilot plan), and so forth. Afterwards, qualitative and quantitative data are needed to evaluate the allocation of resources.
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	Tong and Trinidad (2005) explain that '**providing appropriate and sufficient computer facilities and digital resource materials, reliable technological infrastructure, and on on-site and just just-in-time technical support for teachers'** (p. 11) are necessary conditions for facilitating any technology technology-enhanced education. The extent to which institutions are equipped with physical and digital facilities that make possible BT&L is described by means of the dimension 'Facilities'. On the one hand, this refers to physical spaces and equipment to create media for educational purposes, such as a video recording and editing studio, a lightboard (see Peshkin, 2020), or a virtual reality studio. These facilities are to be staffed and financially supported (see also the dimension 'Support'). On the other hand, this refers to different classroom setups.
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	**The dimension 'Facilities' also refers to instructional tools for information processing, communication, and interaction purposes. Typical digital facilities include the university-wide virtual learning environment (VLE), which has become indispensable for BT&L. Others are** publicly available websites dedicated to the development of media, such as video (e.g., Create at the University of Derby).
Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	**At maturity level 3 (Strategic), instructors influence scheduling (room) facilities.** For example, instructors may choose the classroom set-up for their face-to-face sessions. This prevents, for example, a project course from being scheduled in a lecture theatre. Level 3 also indicates that the range of teaching facilities, both physical and digital, is evaluated and adjusted systematically based on clear criteria and multiple data sources.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.	International	Contributions such as 'A Rubric for Evaluating E-Learning Tools in Higher Education' (Anstey & Watson, 2018) and 'Evaluating Virtual Learning Environments' (Dyson & Campello, 2003) **provide adequate frameworks for evaluating digital facilities**. The chapter 'Assessing Learning Spaces' by Hunley and Schaller (2006) is helpful in assessing physical facilities and deciding upon the type of method to adopt for this purpose (e.g., photographic study).
Groen J, Ghani S, Germain-Rutherford A, Taylor M. Institutional Adoption of Blended Learning: Analysis of an Initiative in Action. Canadian Journal for the Scholarship of Teaching and Learning. Decembre de 2020;11(3).	Canada	Senior-level administrators also have to **secure funds in advance of implementation as investments in software, hardware, appropriate staff, and training require substantial financial outlays**. Performing appraisals to gauge the efficiency of existing technical skills and campus hardware and software can lead to cost reductions.
Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024 p. 159-98.	International	**The purpose of a financial security policy is to ensure a long-term and sustainable financial investment during an institution's implementation of blended learning**. When formulating an economic security policy, the following aspects should be considered: • Formulating a sustainable institutional funding mechanism, • Establishing a normalized reserve fund for the implementation of blended learning, • Considering an appropriate allocation of funds for the development of hardware, software, teaching and learning resources, maintenance of technical systems and staff development, • Improving the cost-benefit analysis of funding investments, • Developing a long-term method of monitoring project effectiveness and • Establishing a tailor-made project evaluation and audit mechanism.
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programmes in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Blended learning combines conventional and digital methods to achieve an "optimal exploitation of ICT and the internet"** integrated with the traditional technologies of physical material and co-presence in space and time. The value of blending is that digital methods offer much greater personalization, flexibility, inclusiveness and efficiency than conventional methods can, but they have to be used appropriately (Laurillard, 2015).
European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programmes in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).	International	**Funding of innovation** Governmental and institutional leadership and strategies are the most important drivers of change. Funding, which comes from national governments, agencies, or institutions, is an important instrument for stimulating and activating change. Ways forward can be: • Create an institutional innovation fund with funding for different purposes: seed money, project funding, additional staff.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		• Fund projects which have a systemic impact (faculty/program level) • Stimulate individual staff with seed money, prizes and career opportunities • Create an innovation fund at the governmental level, including for large-scale innovation (cf. France, Germany) • Create an innovation agency/council at the governmental level
Ossiannilsson E. Considerations for Quality Assurance of E-Learning Provision. JECP. 16 de jun 2019;(1):222-30.	Europe	Institutions can better guarantee the effectiveness of delivering an e-learning programme by acquiring, operating, and maintaining a computer-based system capable of -registering students for courses and programmes. -distributing e-learning materials to students - maintaining and updating records of student performance - conducting aspects of e-business - and facilitating communication between the institution, its students, and staff. Computer-based systems can also provide accurate returns to quality management. **Institutions often prefer that their chosen technical solutions comply with platform-independent and non-proprietary web standards.** VLEs deserve special attention, for example, in order to ensure that sufficient financial resources are secured, thereby achieving system security and reliability, as well as service availability. Good VLEs are interoperable and robust, aligned with the institution's technical infrastructure, and regularly subjected to internal evaluations, updating, and improvements as needed. The technical infrastructure should ensure the accessibility of learning materials and the e-assessment system by students with special educational needs.
Henao, K., Samoilovich, D. The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	The allocation of resources towards the digitalization of higher education plays a crucial role in either facilitating or obstructing the adoption of digital practices by educators and students in higher education institutions. Universities are called upon and financially supported to promote the growth of ICT infrastructure and services. This support includes enhancing the skills of educators through various measures, aid, incentives for digitalization, teaching, and fostering networking opportunities.
Henao, K., Samoilovich, D. The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	**Having a business plan/model** • The fourth higher education revolution should include in their business plan how new teaching, e.g., pedagogies technology, should be integrated within learning and teaching activities to have a student-centered approach. Technology decisions are high-risk. When an institution chooses a technology, it must have it for several years. How do we make decisions in this case? It is easier to decide in terms of buildings. Some institutions choose to buy existing

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		solutions on the market, although some voices oppose this. In the past, the university market was more limited. • The business models are directly related to the perceived demands; in this way, they are adjusting what training is done online and what training is done face-to-face. For example, face-to-face training can be complemented with some elective online modules. • Microlearning wave: A professional who would like to upscale or rescale their competencies follows specific parts of a course (not the entire course). • Leveraging the Micro credential wave that allows professionals to learn part of a course/lecture and through assessment to accredit these qualifications.

4.2 Internationalization

Source-Reference	Country-Region	Strategies-Actions
Carthy Ú. Blended Mobility Project: Ireland, Germany, and Spain. Research-publishing.net; 2022.	Germany, Ireland and Spain	**Case study**: Within the parameters of the new Erasmus program, this Blended Intensive Program (BIP) combines virtual exchange with physical mobility. There were three institutions involved in this project: Letterkenny Institute of Technology, Ireland; Hochschule Bremerhaven, Germany; and Malaga Healthcare College, Spain. The virtual exchange ran for five weeks from November to December 2021, and the physical mobility took place in Bremerhaven in the first week of April 2022. Twenty-seven participating students from diverse academic backgrounds engaged in shared tasks during the virtual exchange on a Blackboard platform hosted by Letterkenny Institute of Technology. They were awarded two ECTS credits, which were embedded into their local curricula. The content was delivered using both synchronous and asynchronous tools. The topic was global citizenship, and students collaborated in multicultural teams to create presentations on their chosen topics. In addition to this teamwork, they also shared their insights into the course content by posting to a discussion forum in Weeks 1, 3, and 4. The concept of blended mobility, while in its infancy, has already generated interest among some scholars. Essentially, blended projects combine physical mobility with some element of virtual exchange; this blend of physical and virtual comes in various iterations. It is not surprising that the new Erasmus program 2021-2027 has prioritized blended mobility, given the manifold educational benefits it can provide (Helm & O'Dowd, 2020). While recognizing these advantages, scholars are anxious to emphasize the challenges to be overcome when embarking on such projects. Purg, Širok, and Brazil (2018) discuss the transformative effect of blended mobility in the context of the Master's program in Media Arts and Practices, which ran from 2011 until 2014 in four EU countries; in

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		particular, they highlight the intercultural value added to the learning experience (Purg et al., 2018). Welzer, Escudeiro, Druovec, and Holbl (2018) also acknowledge the positive impact of such programs as a way of internationalizing the education system in the context of the AIM project, which ran from 2016 until 2018 and involved ten EU countries.
Carthy Ú. Blended Mobility Project: Ireland, Germany, and Spain. Research-publishing.net; 2022.	Spain and Germany	The pedagogical benefits of blended mobility programs are evident in both the background literature and the BIP case explored. These programs have the potential to develop **21st-century skills, and intercultural and interpersonal communication skills** are also crucial in today's multicultural workplace.
UNESCO. Building Ecosystems for Online and Blended Learning: Advancing Equity and Excellence in Higher Education in the Asia-Pacific. Policy Brief. UNESCO Bangkok; 2021.	Asia and Pacific	**Promising Practices: Providing higher education learners with anytime access to digitized, portable transcripts and credentials online in the Asia Pacific region.** A new public-private partnership is emerging in Japan to ensure anytime access to higher education transcripts and credentials through a nationwide rollout. Together with Japan's Research Consortium for Sustainable International Education (RECSIE) and the global EdTech firm Digitary, the Japanese higher education community will see the creation of the country's very first "credential wallet" for postsecondary learners. Once fully operational, the national network will enable learners and alums of Japanese higher education institutions to access and share their official digitized transcripts and credentials online – anytime, anywhere in the world. "The National Network will have a strong impact on the realization of UNESCO's Tokyo Convention, **which promotes the mobility of students and talent in the Asia Pacific region,"** said Professor Shingo Ashizawa of Toyo University and Director of RECSIE.
Ossiannilsson E. Considerations for Quality Assurance of E-Learning Provision. JECP. 16 de june 2019;(1):222-30.	Europe	Institutions may consider encouraging the virtual mobility of students and academics by providing them with opportunities to participate in activities offered by other institutions.
Henao, K., Samoilovich, D. The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	**Collaboration with other Universities,** • Especially beneficial for the smaller ones. • National networks in which universities learn from others with a similar profile allow for the shortening of learning paths and the saving of resources. • Last but not least, naivety often prevails, according to one of the interviewees. A specific dose of cunning (the best example is Ulysses); during the Pandemic, Institutions counted on pilot experiences to the online switch. To overcome resistance, this is not enough.
Henao, K., Samoilovich, D. The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	**Experts and practitioners have approached internationalization in at least three distinct ways: as a rationale or motivation for digital transformation, as a means to enrich teaching and learning, or as an accelerator for the digital transformation process.** The imperative to enhance international attractiveness,

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

expand accessibility, and increase visibility on the global stage is considered a rationale for leaders to embark on the digital transformation process. Virtual platforms empower institutions to cater to the diverse needs of intercultural students by providing non-formal courses and personalization options for learning and interaction and by continuing to expand their offer to international students located abroad.

International collaboration becomes a means to enhance teaching and learning when it becomes an integral part of an education module design. This approach offers students international exposure, fostering intercultural understanding, improved communication skills, broader knowledge, and global awareness, as well as insights into previously unforeseen professional opportunities. Different modalities are found: Blended Intensive Programmes, Tele-collaboration, Virtual exchanges, Collaborative Online International Learning, International Capstone, PBL projects, and challenge-based projects facilitated by online environments. An example of this is the Erasmus+ Blended Intensive Programs initiated by the European Commission in the post-pandemic era. These programs commence online, bringing together students from three or more European universities to study a specific topic, complete with real-world case scenarios from companies and other stakeholders that the multinational teams must address. Subsequently, students convene face-to-face in workshops.

In the realm of digital transformation, international collaboration assumes a role in shortening the learning curve and expanding access to resources. This has to do with the dissemination of best practices on an international scale, the potential for peer-to-peer learning, and the knowledge exchange through virtual communities of practice at both European and global levels. As one interviewee noted, "In Croatia, we looked at other universities and adopted the best practices from places like Edinburgh, Finland, Helsinki, Porto, and TU Wien." Visiting scholars can introduce innovative methodologies through staff exchanges. Within the framework of Erasmus programs, instructors have the option to participate in well-structured international teaching weeks that offer training in teaching methodologies, digital tool utilization, and new pedagogical approaches. These innovations can subsequently be transferred and applied at their home institutions.

Linked to this are the open access and open science movements, which have revolutionized access to research and innovation and influenced the types of outputs published. European programs and projects provide funding opportunities related to the exchange and implementation of good practices and innovative methods.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Henao, K., Samoilovich, D. The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023.	Europe	**Some of the barriers underlined for international collaboration are:** • For courses offered internationally, cultural differences can be a barrier. • Diverse organizations in various countries and different programs. • Differences among partner institutions regarding expected outcomes, credit transfer systems, country legislation regarding education language and potential cultural differences between international partners • Lack of English and language proficiency from teachers and students. • Integration of policies among different European countries.
Henao, K., Samoilovich, D. The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023,	Europe	**During the Pandemic, international collaboration expanded its possibilities with the explosion of remote accessibility and the limitations to physical mobility. After the Pandemic, the European Commission, National governments, and institutions continued promoting diverse modalities for virtual and blended international collaboration.** Computer-supported collaborative learning, whether synchronous or asynchronous, fostered teamwork across diverse time zones, mirroring the working modalities prevalent in today's companies. From internships to collaborative modalities, remote guest lectures (professors, researchers, and industry experts) are more prevalent factors that enrich the teaching and learning experience than they were before the Pandemic.
HIBLend Project. Exploring the Key Aspects of Blended Student Mobility. HIBLend Project. 2023.	Europe	Noteworthy aspects of Blended Mobility that make it a game-changer in higher education: **The Fusion of Virtual and Physical Learning:** At the heart of Student Blended Mobility (SBM) lies the integration of virtual and physical learning components. The virtual aspect utilizes cutting-edge digital technologies, enabling remote or online learning experiences. From online classes and webinars to interactive multimedia content, students engage in collaborative discussions and knowledge exchange regardless of their physical location. This fusion of face-to-face interactions, such as in the classroom, a laboratory or other educational venues, with virtual resources ensures a comprehensive and enriching educational journey. **Flexibility and Personalization**: One of the most remarkable features of BSM is its flexibility. Students can choose from various models, such as short-term or long-term mobility, or even participate in blended joint degree programs. With the self-blend and "a la carte" models, learners can tailor their learning paths according to their individual needs and preferences. This personalized approach fosters greater autonomy, empowering students to take control of their education.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		Enhancing Cross-Cultural Understanding: BSM brings students from diverse backgrounds together, facilitating cross-cultural learning experiences. Physical mobility allows students to immerse themselves in a different cultural and linguistic setting, thus developing intercultural competencies. The virtual component complements this by enabling interactions with peers from different countries before, during, and after the mobility period, creating a truly global learning environment.
		Project-Based Learning for Real-World Impact: Project-based blended learning is a standout feature of BSM. By combining online and face-to-face experiences, students engage in authentic, collaborative projects, addressing real-world challenges. This approach hones critical thinking, problem-solving, and communication skills, preparing students for future careers and civic engagement. Moreover, it allows learners to connect their academic knowledge to real-life contexts, creating a profound impact on their personal and professional growth.
		Embracing Asynchronous and Synchronous Learning: BSM strikes a balance between asynchronous and synchronous learning. Asynchronous elements enable students to complete activities at their own pace, promoting flexibility and accessibility. On the other hand, synchronous elements facilitate real-time interactions, encouraging collaboration and immediate feedback. This dynamic combination ensures that students receive a comprehensive and engaging learning experience.
HIBLend Project. Exploring the Key Aspects of Blended Student Mobility. HIBLend Project. 2023.	Europe	**Key benefits of SBM:** The reasons that motivated the administrative staff surveyed look different from the reported academics' motivations. The top three factors behind the institution's decision to incorporate Student Blended Mobility SBM in its activities are linked to opportunities provided by the Erasmus+ programme (80%), particularly through BIPs, as well as aspirations to broaden opportunities for internationalization (77%) in line with institutional internationalization strategies (67%). These findings indicate that SBM is currently mostly perceived as a new instrument for internationalization and, to a lesser extent, a tool supporting inclusion (39%), digitalization (27%) and sustainability (21%) goals. This view has been captured in the following quote: "Indeed, at institutional level willingness to keep elements from the COVID period, but also diversification of internationalization options is a good argument." "Other" responses show that SBM is used to respond to academics' bottom-up interest in this new learning format as well as to balance student interest in mobility by "stabilizing

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		mobility numbers" and to prepare the ground for long-term mobility (e.g., "The way I see it, BIPs are not about the very strict formal academic experience and learning, but they are much more well rounded experiences, transformative ones for all involved, which is why we choose them.'') Several respondents expressed doubts about the added value of SBM, which can be exemplified with the following statement: "My HEI is reluctant to use SBM. There is a contradiction between students and lecturers, who are interested in these kinds of formats vs the institutional level, which is still hesitant. We are still unclear of the benefits and implementation."
HIBLend Project. Exploring the Key Aspects of Blended Student Mobility. HIBLend Project. 2023.	Europe	For teachers and students, students' interest in SBM particularly lies with **pedagogical innovations reflected in the course content delivered through a blended format** (64% of administrative and 43% of academic respondents). Another reason related to flexibility as compared to more traditional mobility formats (63% vs 39%) and an alternative for longer physical mobility (55% and 33%). Interestingly, more academic staff respondents **are convinced in the perceived value of SBM as a way to enhance personalized learning environment for students.**
Knoch S. Types of learning mobility: Blended, hybrid and online. Paris: European Union. Council of Europe Youth Partnership; 2022 mar 10 p.	Europe	**Key benefits of blended learning mobility** • A combination of the extended learning process, as well as an intense period of being together residentially, enables more opportunities for stronger group bonding. This, in turn, contributes to deeper connections and more profound sharing and exchange. In addition, this combination provides for more opportunities to work on participants' attitudes, values and behavior, which often need more time and space. • All participants go through the same flow/structure of the learning process. • It enables an impact on communities of all involved participants. Given that there are online • activities upon participants' return to their "home" environments, they can support their • follow-up and increase their motivation and engagement. • Online activities, which support the residential ones, offer a stronger chance for a more • structured and "connected" preparation (both in local groups and in the whole, international • group), and ensure a stronger personal follow-up with participants • A blended approach can support participants to meet in their local groups, in order to increase • their confidence for an international process and then come together to meet others online. • It supports participants in the process of reintegration in the "home" community, which can sometimes be quite harsh and abrupt. Knowing that the process is not over

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

		and that they have an international network to fall back on can make the reintegration smoother and less sudden, allowing them to adjust changes into everyday life.
Knoch S. Types of learning mobility: Blended, hybrid and online. Paris: European Union. Council of Europe Youth Partnership; 2022 mar 10 p.	Europe	**Key challenges** • It is a long process to prepare and see through and it requires a lot of commitment and resources from both leaders/facilitators and participants themselves. The enthusiasm and dedication can vary and there has to be quite a lot of investment to maintain a stable engagement and exchange. • The time that needs to be dedicated to the online part of the activity can sometimes be perceived as an overload. It is arguably easier to be fully committed to an activity when participants are together in person, while commitment might be more difficult to maintain online, when participants' everyday reality kicks in. • Knowing that they would meet in person, participants might be tempted to skip pre-residential online preparation with the intention of catching up when they all meet together. • On the other hand, it is not always easy to keep the group together, especially in the follow-up phase. While the international exchange and the network might be a great support for some participants in their reintegration efforts, some participants will be drawn into their everyday reality and the extensive process might be seen as a burden – or, at least, not a "decent replacement" for an in-person reality. • Having one logical flow of all the blended activities is often easier said than done. Having a clear plan which works towards one set of objectives and, at the same time, being constantly open to the needs and contributions of the participants can be quite a tiresome ordeal. • Not being the only learning environment, investment into setting up the online part of the process is sometimes overlooked. At the same time, the need for equal access to the internet and digital devices, as well as adequate digital competences, is very important to ensure an inclusive and quality process.
Gaebel M. New forms of student mobility and internationalisation: what challenges for QA?. European University Association; 2023 23 p.	Europe	"Virtual student mobility (VSM) is a form of mobility that uses information and communication technologies to facilitate cross-border and/or inter-institutional academic, cultural, and experiential exchanges and collaboration which may be credit-bearing or not for credit." UNESCO IESALC. **Virtual exchanges:** • More opportunities for students who cannot have physical mobility (92%) • Complements physical mobility – focus on blended

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

|		
		• 50% think that staff and students like it (20% do not know) Most institutions: early days experience to be gathered, legal & organizational issues to be solved **Quality aspects – risks & concerns** • Dependence on external partners • Dependence on technology • Different formats • Transparency of the offer: learning outcomes • Assessment & recognition • Student guidance, student support • Languages • Replace physical with virtual (economic reasons • Lower reputation - stigmatization • Pretext to limit student mobility (greenwashing) • Excuse for lack of inclusion measures • Global exchange & collaboration – incl. global South **= High workload for the institution**
Henderikx P, Ubachs G. Models and guidelines for digital collaboration and mobility in European higher education. Zenodo; 2022.	Europe	**Institutional benefits:** University ecosystems are increasingly hybrid and international, combining physical and virtual spaces (EUA, 2021). Next to individual universities, the alliances of the European University Initiative strengthen this development (European Commission, 2021. The virtual campus makes the university ubiquitous and truly international. It promotes academic collaboration and improves access for all to international education and research through physical and digital mobility schemes.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

5. Map of Evidence

A Map of evidence

As stated, the evidence is scarce, mainly in key issues such as the impact of technology-mediated activities on learning outcomes and the amounts of funding required for sustainable investment over time. Moreover, the resulting panorama is one in constant evolution, e.g. the availability and cost of emerging technologies (consider IA new applications).

Therefore, we decided to complement the evidence analysis with a map of evidence. An Evidence map is a systematic search of a broad field to identify gaps in knowledge and/or future research needs that presents results in a user-friendly format, often a visual figure or graph, or a searchable database. In the context of this policy review, it will be helpful to visualize where the evidence is concentrated and what areas further investigation would allow for a better understanding of the factors at play.
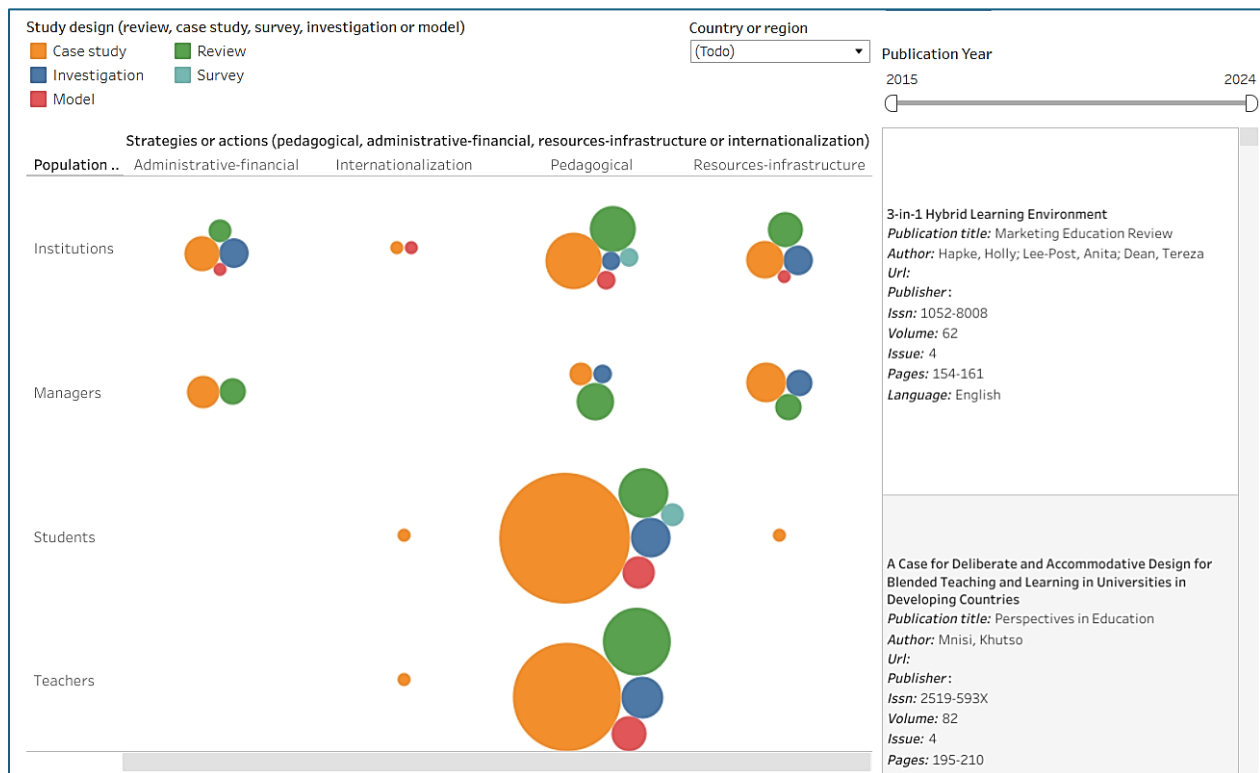
Full View at: https://public.tableau.com/app/profile/kelly.henao/viz/EGM_17325362425530/Dashboard1

See Annex - Bibliography Map

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union
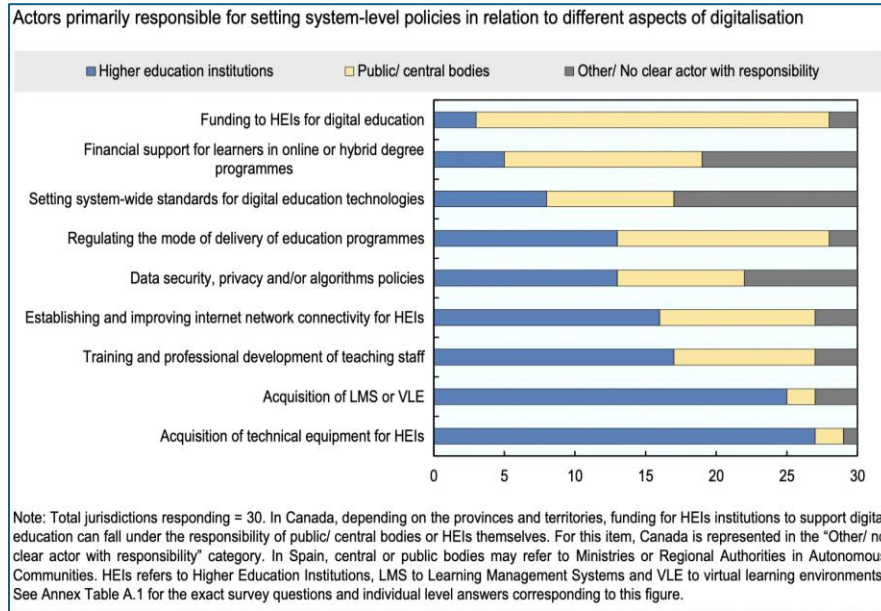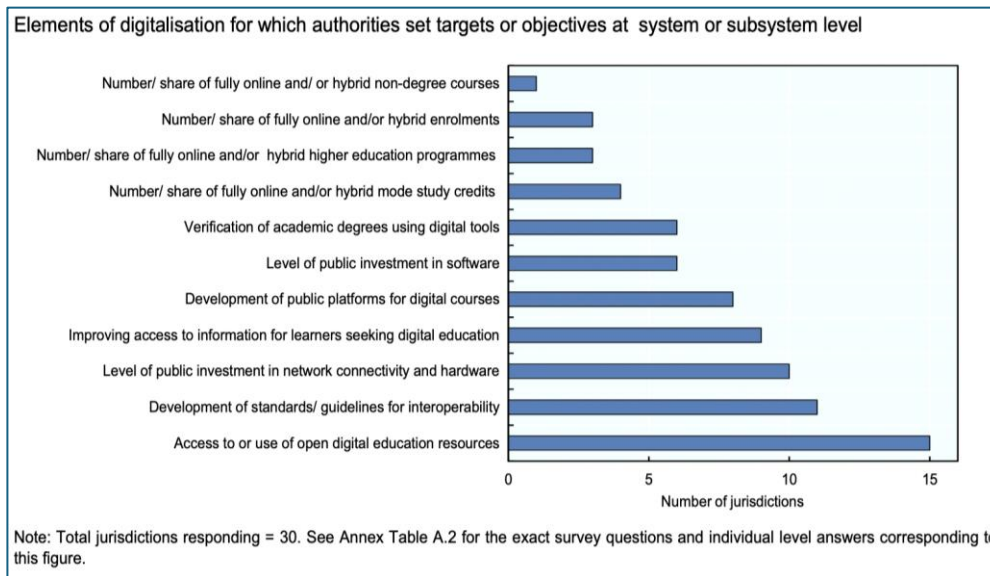
6. Figures

The following figures were selected from the included articles on the strategies and actions extracted for this Report.

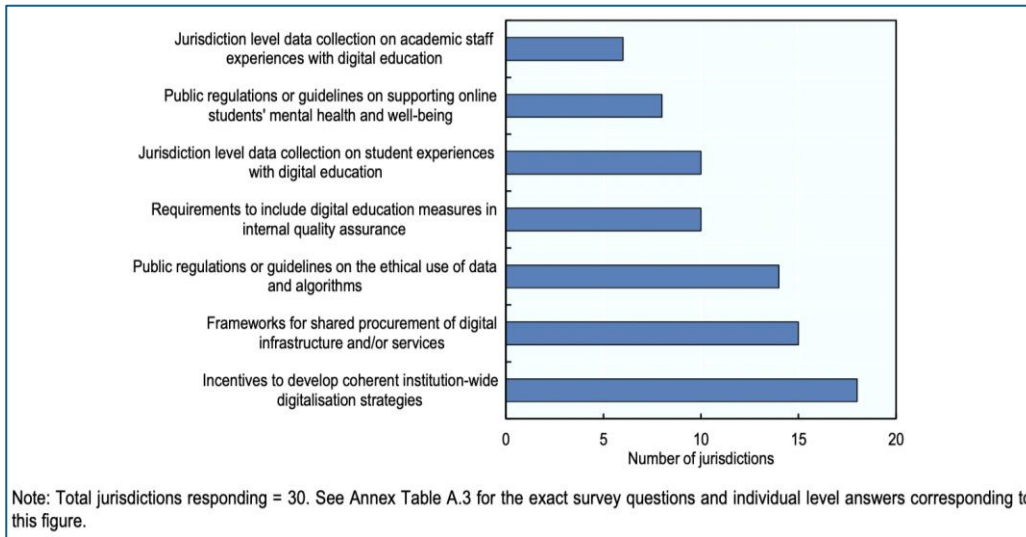## Figure 1. Digitalization policy decision makers in OECD higher education systems

Figure 2. Targets and objectives for digitalization in OECD higher education systems

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Figure 3. Policy Levers to guide, evaluate or enhance digitalization in Higher Education Institutions.

Note: Total jurisdictions responding = 30. See Annex Table A.3 for the exact survey questions and individual level answers corresponding to this figure.

Figure 4. Policy levers to support the quality enhancement of digital teaching and learning in higher education (OCDE)

Government co-ordination and support for the institutional quality enhancement of digital teaching and learning in higher education					
What?	**Policies**	**Resources**	**People**	**Processes**	**Implementation**
How?	Strategy setting and guidance	Financial support and incentives	Stakeholder capacity building and collaboration	Performance monitoring and evidence collection	**Who?**
1. Vision, mission and strategy for digitalisation and innovation	✓				Government, QA agency, sectoral associations, NREN, national centre for teaching and learning
2. Organisational quality culture centred on digitalisation, innovation and collaboration	✓				Government, national centre for teaching and learning, NREN, QA agency, Rectors' Conference
3. Digital education infrastructure		✓			Government, NREN, international funds
4. Digital course content, design, delivery and assessment		✓			National centre for teaching and learning, national research centre, sectoral associations
5. Supporting and incentivising staff professional development			✓		National centre for teaching and learning, Rectors' Conference, sectoral associations
6. Preparing and supporting students for digital learning			✓		School education system (development of digital skills), national student union
7. Monitoring the quality of digital teaching and learning				✓	National statistics office, sectoral associations, national centre for teaching and learning, national research institute, QA agency, NREN
8. Strengthening feedback and monitoring practices				✓	National centre for teaching and learning, QA agency, NREN

Figure 5. The European Maturity Model (EMM) for the Institutional Dimension

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

FINANCES

The extent to which financial resources are allocated to develop, support, and stimulate blended learning

Level 1 Ad Hoc	Level 2 Consolidated	Level 3 Strategic
No allocation of financial resources specifically for blended learning purposes.	Financial resources are incidentally allocated (e.g., projects, pilots) to develop, support, stimulate and improve blended learning and teaching. The allocation of the resources is evaluated.	Financial resources are structurally allocated to develop, support, stimulate and improve blended learning, teaching and blended education. The allocation of the resources is systematically evaluated and adjusted, based on clear criteria and qualitative and quantitative data.

FACILITIES

The extent to which institutions are equipped to facilitate blended learning and teaching.

Level 1 Ad Hoc	Level 2 Consolidated	Level 3 Strategic
Limited availability of blended learning and teaching facilities.	A wide variety of facilities is available. This includes both digital (e.g., digital learning environment, educational tools) and physical (e.g., video recording studios, the availability of different classroom set-ups) facilities.	A wide variety of facilities is available. This includes both digital (e.g., digital learning environment, educational tools) and physical (e.g., the availability of different classroom set-ups, video recording studios) facilities. Teachers have influence on the scheduling of the facilities. The development of facilities is aligned with the institutional strategy. The quality, quantity and assortment of facilities is systematically evaluated and adjusted, based on clear criteria and multiple data sources.

Figure 6. The EMM Framework: course, programme and institutional level.

The EMM framework

The EMM consist of 21 (sub)dimensions, divided over three levels. The following table provides an overview of all the (sub)dimensions of the EMM.

COURSE LEVEL	PROGRAMME LEVEL	INSTITUTION LEVEL

Course design process
  o Selection of blended learning activities and their sequence
  o Selection of blended learning tools
Course flexibility
Course interaction
Course experience
  o Student learning
  o Study load
  o Inclusiveness
	Programme design process
	  o Programme coherence
	  o Alignment and coherence of blended learning tools
	Programme flexibility
	Programme experience
	  o Student learning
	  o Study load
	  o Inclusiveness
		Institutional support
		Institutional strategy
		Sharing and openness
		Professional development
		Quality assurance
		Governance
		Finances
		Facilities

Figure 7. A generic conceptual framework of Blended Learning: different factors affecting learning success.

R5A1 - Review and report of the evidence on policies

Co-funded by the
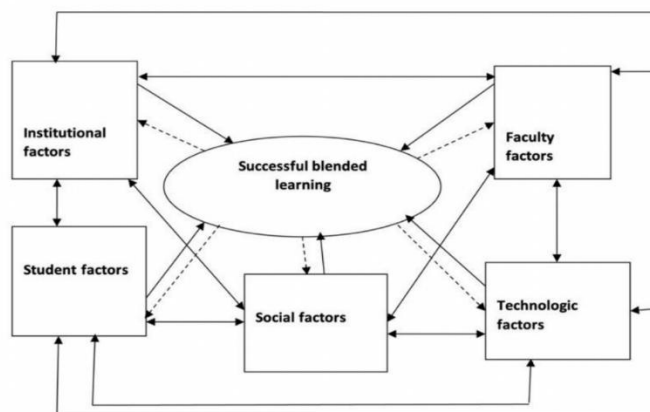Erasmus+ Programme
of the European Union

Figure 8. A framework for institutions to implement blended learning
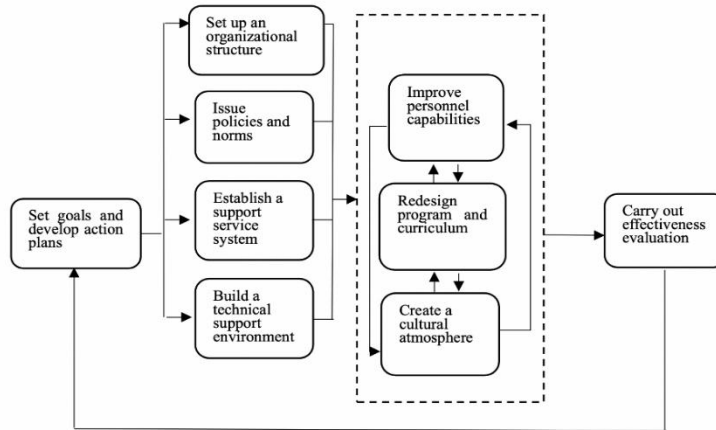

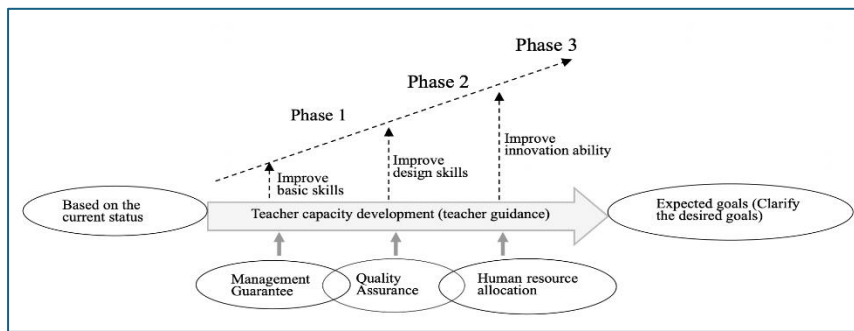## Figure 9. The focus of institutional leaders for implementing blended learning.

Figure 10. Classification of policies and standards for implementing blended learning
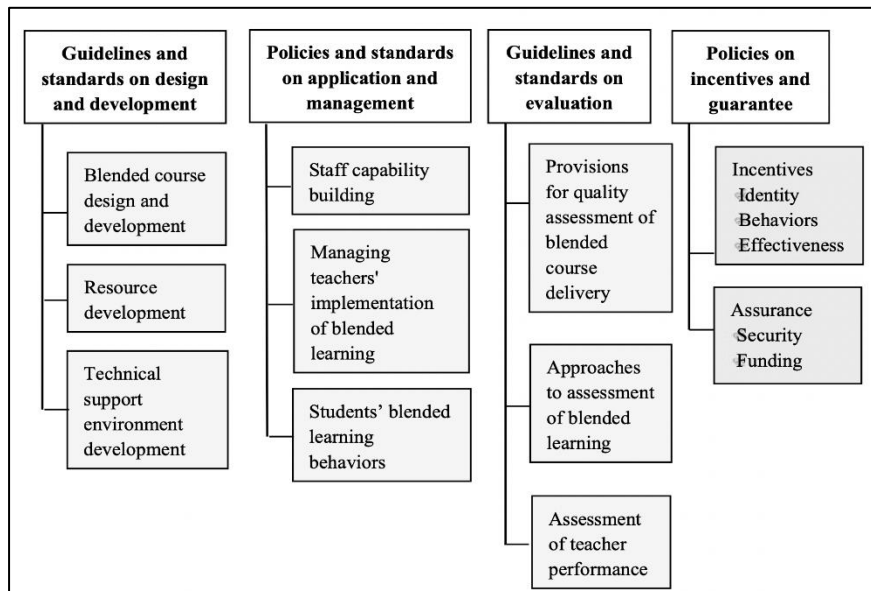
R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Figure 11. The different stages of institutional implementation of blended learning and their focus
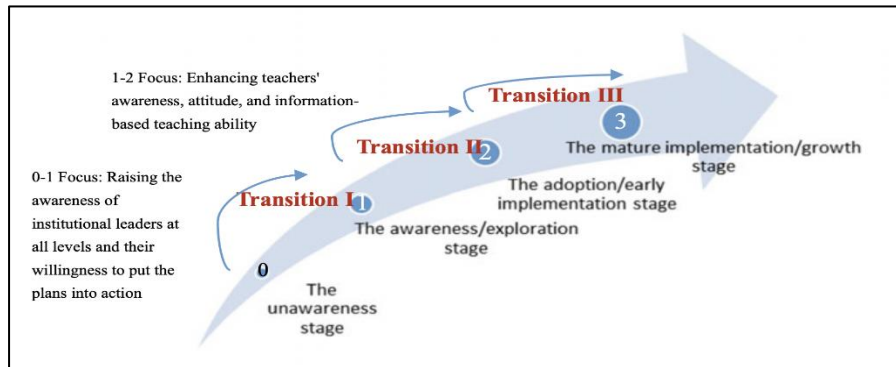

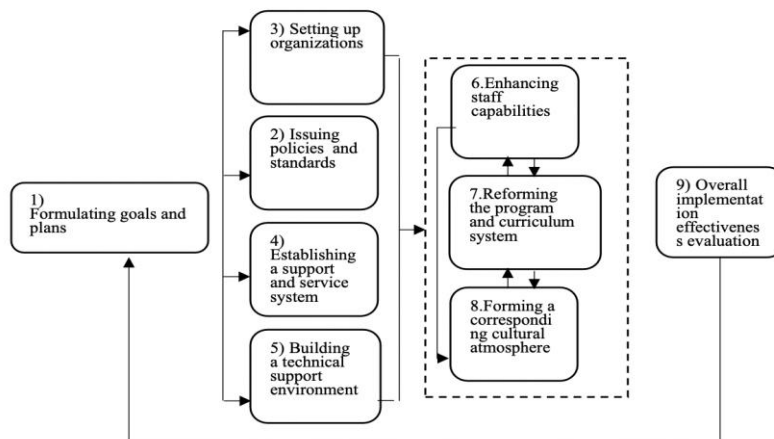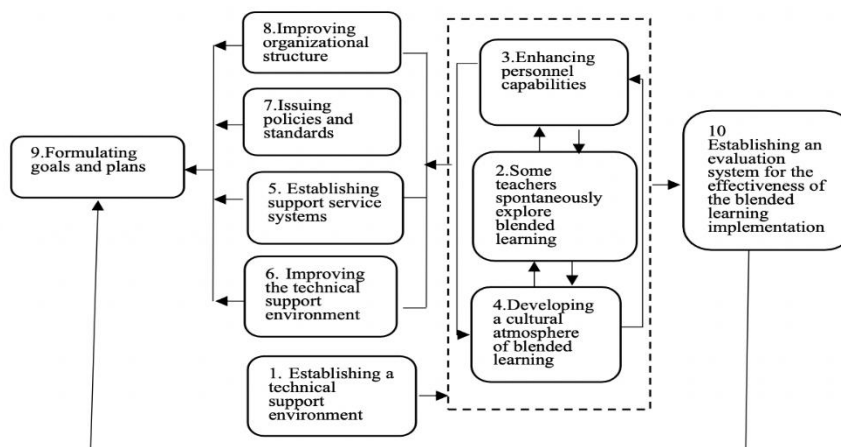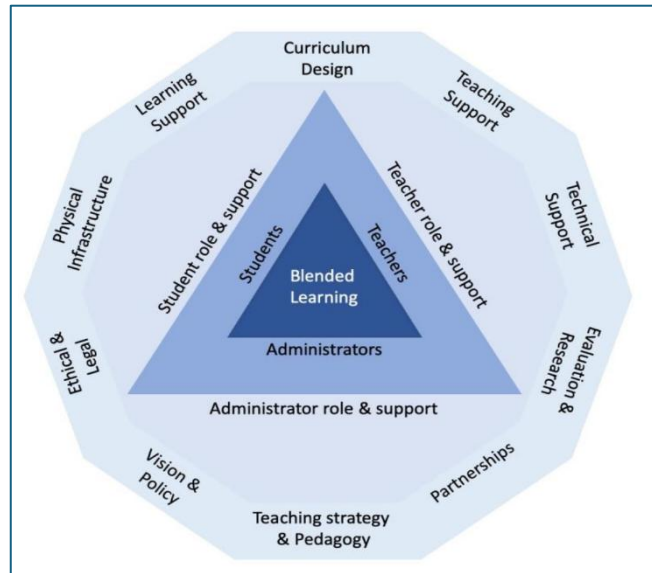**Figure 12. A reference sequence for institutions to implement blended learning by adopting the *top-down approach*.**

Figure 13. A reference sequence for institutions to implement blended learning by adopting the *bottom-up approach.*

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

Figure 14. An Institutional-level blended learning framework.

Figure 15. Implementation stages for blended adoption

Implementation stages for blended learning adoption (adapted from Graham et al., 2013, p. 7)	
Stage	Description
Stage 1: Awareness/exploration	No institutional blended learning strategy, limited awareness and support for individual faculty exploring ways in which they may employ blended learning techniques in their classes
Stage 2: Adoption/early implementation	Institutional adoption of blended learning strategy and experimentation with new policies and practices to support its implementation
Stage 3: Mature implementation/growth	Well-established blended learning strategies, structure and support that are integral to university operations

Implementation categories for blended learning adoption (adapted from Graham et al., 2013, p. 7)	
Theme	Description
Strategy	Issues relating to the overall design of blended learning, such as definition of blended learning, forms of advocacy, degree of implementation, purposes of blended learning, and policies surrounding it
Structure	Issues relating to the technological, pedagogical, and administrative framework facilitating the blended learning environment, including governance, models, scheduling structures, and evaluation
Support	Issues relating to the manner in which an institution facilitates the implementation and maintenance of its blended learning design, incorporating technical support, pedagogical support, and faculty incentives

Figure 16. Key dimensions to build institutional readiness for blended learning.

invite-erasmus.eu

INVITE
R5A1 - Review and report of the evidence on policies
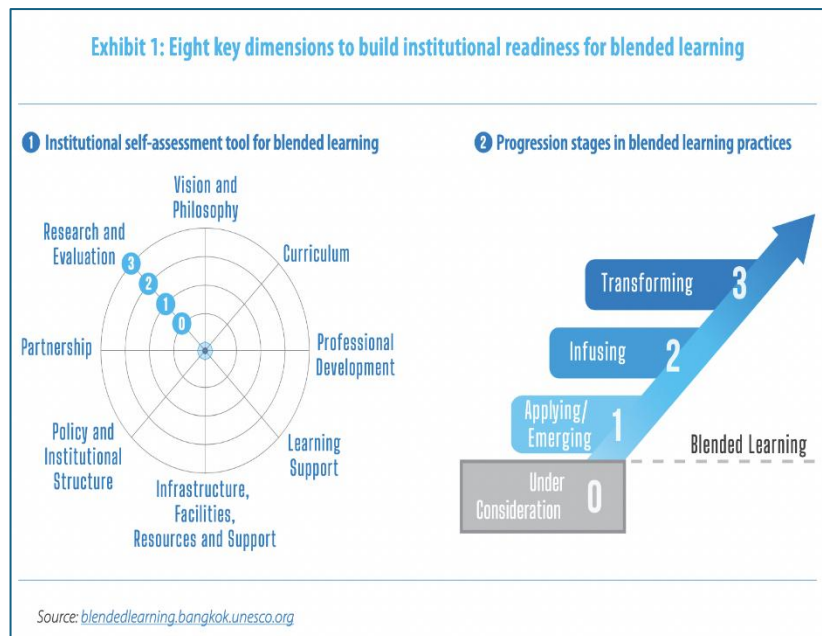Co-funded by the
Erasmus+ Programme
of the European Union

Figure 17. Constructs and factors related to the Blended Learning adoption in Higher Education.
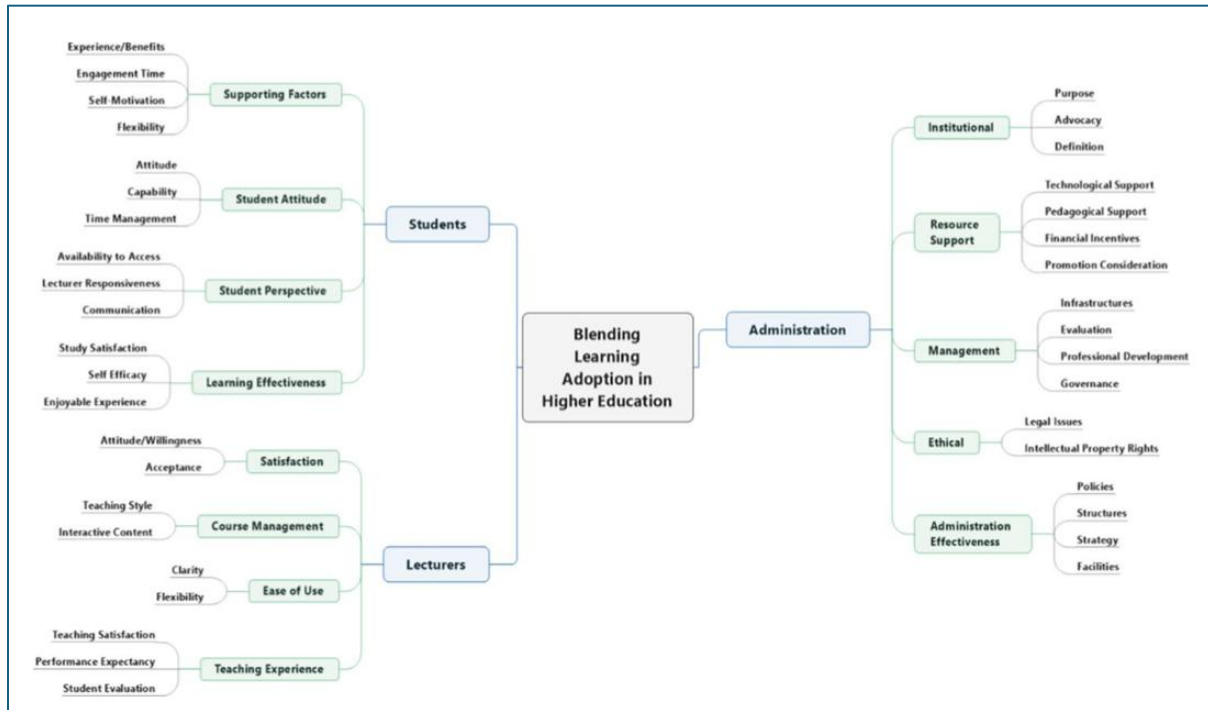

Figure 18. Finances dimension at Maturity Levels

FINANCES

The extent to which financial resources are allocated to develop, support, and stimulate blended learning

Level 1 Ad Hoc	Level 2 Consolidated	Level 3 Strategic
No allocation of financial resources specifically for blended learning purposes.	Financial resources are incidentally allocated (e.g., projects, pilots) to develop, support, stimulate and improve blended learning and teaching. The allocation of the resources is evaluated.	Financial resources are structurally allocated to develop, support, stimulate and improve blended learning, teaching and blended education. The allocation of the resources is systematically evaluated and adjusted, based on clear criteria and qualitative and quantitative data.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

7. References

1. Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.

2. Office for Students. Gravity assist: propelling higher education towards a brighter future. Bristol: Office for Students; 2021 feb p. 160. Available in: https://blobofsproduks.blob.core.windows.net/files/Gravity%20assist/Gravity-assist-DTL-finalforweb.pdf

3. Bozkurt A. A Retro Perspective on Blended/Hybrid Learning: Systematic Review, Mapping and Visualization of the Scholarly Landscape. Journal of Interactive Media in Education. 2022;2022(1).

4. Groen J, Ghani S, Germain-Rutherford A, Taylor M. Institutional Adoption of Blended Learning: Analysis of an Initiative in Action. Canadian Journal for the Scholarship of Teaching and Learning. December 2020;11(3).

5. OECD. A brave new world: Technology and education. Paris: OECD; 2018 jun. (Trends Shaping Education Spotlights; vol. 15). Report No.: 15. Available in: https://www.oecd.org/en/publications/a-brave-new-world_9b181d3c-en.html

6. UNESCO. Building Ecosystems for Online and Blended Learning: Advancing Equity and Excellence in Higher Education in the Asia-Pacific. Policy Brief. UNESCO Bangkok; 2021.

7. Bekele TA, Karkouti IM, Amponsah S. Core Conceptual Features of Successful Blended Learning in Higher Education: Policy Implications. Education Policy Analysis Archives. October de 2022;30(156).

8. Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024. p. 159-98. Available in: https://link.springer.com/10.1007/978-981-99-6269-3_4

9. McCarthy S, Palmer E. Defining an Effective Approach to Blended Learning in Higher Education: A Systematic Review. Australasian Journal of Educational Technology. 2023;39(2):98-114.

10. European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programmes in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).

11. European Education Area. Digital education action plan (2021–2027). European Commission; 2022. Available in: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:4617905

12. European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. EADTU-ENQA Peer Learning Activity on blended and online education. EADTU-ENQA; 2017 p. 3. (Peer Learning Activity). Available in: https://eadtu.eu/documents/News/2017_-_EADTU-ENQA_PLA_Outcomes.pdf

13. Henao, K., Samoilovich, D., The new educational landscape in Europe: Overview of virtual and blended learning modalities and international collaboration, 2023

14. Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.

15. Anthony B, Kamaludin A, Romli A, Raffei AFM, Phon DNALE, Abdullah A, et al. Blended Learning Adoption and Implementation in Higher Education: A Theoretical and Systematic Review. Technology, Knowledge and Learning. june 2022;27(2):531-78.

16. van Valkenburg W, Dijkstra B, Delft University of Technology, The Netherlands and Katie Goeman, van Rompaey V, Poelmans S. European Maturity Model for Blended Education. 2020 may p. 20. Available in: https://embed.eadtu.eu/download/2470/

17. Soncin M, Agasisti T, Frattini F, Patrucco A, Pero M. The Costs, Quality, and Scalability of Blended Learning in Postgraduate Management Education. Journal of Management Education. December de 2022;46(6):1052-85.

18. Maloney S, Nicklen P, Rivers G, Foo J, Ooi YY, Reeves S, et al. A Cost-Effectiveness Analysis of Blended Versus Face-to-Face Delivery of Evidence-Based Medicine to Medical Students. J Med Internet Res. 21 de july de 2015;17(7):e182.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

19. Anthony-Okeke L, Cockayne H, Edwards M, Lomer S. Estimating the cost of blended / hybrid post-pandemic teaching and learning. 2012. Available in: https://pure.manchester.ac.uk/ws/portalfiles/portal/198515758/FINAL_Estimating_the_cost_of_blended_hybrid_learning.pdf

20. Ossiannilsson E. Considerations for Quality Assurance of E-Learning Provision. JECP. 16 de junio de 2019;(1):222-30.

21. Carthy Ú. Blended Mobility Project: Ireland, Germany, and Spain. Research-publishing.net; 2022.

22. HIBLend Project. Exploring the Key Aspects of Blended Student Mobility. HIBLend Project. 2023. Available in: https://hiblend.eu/exploring-the-key-aspects-of-blended-student-mobility/

23. Knoch S. Types of learning mobility: Blended, hybrid and online. Paris: European Union. Council of Europe Youth Partnership; 2022 mar p. 10. Available in: https://pjp-eu.coe.int/en/web/youth-partnership/-/types-of-learning-mobility-blended-hybrid-and-online

24. Gaebel M. New forms of student mobility and internationalisation: what challenges for QA?. European University Association; 2023 p. 23. Available in: https://www.eua.eu/images/site1/events/2023/EQAF/Plenary_I_Gaebel.pdf

25. Henderikx P, Ubachs G. Models and guidelines for digital collaboration and mobility in European higher education. Zenodo; 2022. Available in: https://zenodo.org/record/7016333

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

8. Annex - Bibliography – Map of Evidence

MAP BIBLIOGRAPHY

1. Achmad S, Miolo S. Preparing Prospective and Sustainable EFL Professional Teacher Development by Applying Blended Lesson Study and Clinical Supervision. European Journal of Educational Research. 2021;10(3):1449-70.

2. Adinda D, Mohib N. Teaching and Instructional Design Approaches to Enhance Students' Self-Directed Learning in Blended Learning Environments. Electronic Journal of e-Learning. 2020;18(2):162-74.

3. Agustina W, Degeng INS, Praherdhiono H, Lestaric SR. The Effect of Blended Project-Based Learning for Enhancing Student's Scientific Literacy Skills: An Experimental Study in University. Pegem Journal of Education and Instruction. 2022;13(1):223-33.

4. Ahmed A, Bin Amin S, McCarthy G, Khan AM, Nepal R. Is Blended Learning the Future of Education? Students Perspective Using Discrete Choice Experiment Analysis. Journal of University Teaching and Learning Practice. 2022;19(3).

5. Aisha N, Ratra A. Online Education amid COVID-19 Pandemic and Its Opportunities, Challenges and Psychological Impacts among Students and Teachers: A Systematic Review. Asian Association of Open Universities Journal. 2022;17(3):242-60.

6. Akhmetshin EM, Kozachek AV, Vasilev VL, Meshkova GV, Mikhailova MV. Development of Digital University Model in Modern Conditions: Institutional Approach. Digital Education Review. 2021;

7. Al Ghazali F. Towards an Optimal Blended Learning Model during Disrupted Education Periods. Pegem Journal of Education and Instruction. 2022;12(3):97-105.

8. Al-Bazar H, Abdel-Jaber H, Labib E, Al-Madi M. Impacts of Blended Learning Systems on AOU Students' Satisfaction: An Investigational Analysis of KSA's Branch. Turkish Online Journal of Distance Education. 13 de julio de 2021;22(3):213-35.

9. Al-Ghoweri JA, Al-Zboun MS. The Extent of the Impact of Blended Learning on Developing Habits of Mind from the Standpoint of Students of Learning and Scientific Research Skills Course at the University of Jordan. International Journal of Higher Education. 2021;10(4):196-206.

10. Al-Maroof R, Al-Qaysi N, Salloum SA, Al-Emran M. Blended Learning Acceptance: A Systematic Review of Information Systems Models. Technology, Knowledge and Learning. septiembre de 2022;27(3):891-926.

11. Al-Qatawneh S, Eltahir ME, Alsalhi NR. The Effect of Blended Learning on the Achievement of HDE Students in the Methods of Teaching Arabic Language Course and Their Attitudes towards Its Use at Ajman University: A Case Study. Education and Information Technologies. mayo de 2020;25(3):2101-27.

12. Alamri HA, Watson S, Watson W. Learning Technology Models That Support Personalization within Blended Learning Environments in Higher Education. TechTrends: Linking Research and Practice to Improve Learning. January 2021;65(1):62-78.

13. Almusaed A, Almssad A, Cortez MR. Maximizing Student Engagement in a Hybrid Learning Environment: A Comprehensive Review and Analysis. International Society for Technology, Education, and Science; 2023.

14. Alrouji OO. The Effectiveness of Blended Learning in Enhancing Saudi Students' Competence in Paragraph Writing. English Language Teaching. 2020;13(9):72-82.

15. Alsalhi NR, Al-Qatawneh S, Eltahir M, Aqel K. Does Blended Learning Improve the Academic Achievement of Undergraduate Students in the Mathematics Course? A Case Study in Higher Education. EURASIA Journal of Mathematics, Science and Technology Education. 2021;17(4).

16. Alsalhi NR, Eltahir M, Dawi E, Abdelkader A, Zyoud S. The Effect of Blended Learning on the Achievement in a Physics Course of Students of a Dentistry College: A Case Study at Ajman University. Electronic Journal of e-Learning. 2021;19(1):1-17.

17. Altinpulluk H, Kesim M. A Systematic Review of the Tendencies in the Use of Learning Management Systems. Turkish Online Journal of Distance Education. julio de 2021;22(3).

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

18. Alvarez AV. Learning from the Problems and Challenges in Blended Learning: Basis for Faculty Development and Program Enhancement. Asian Journal of Distance Education. 2020;15(2):112-32.

19. Anthony B. Institutional Factors for Faculty Members' Implementation of Blended Learning in Higher Education. Education & Training. 2021;63(5):701-19.

20. Anthony B, Kamaludin A, Romli A, Raffei AFM, Phon DNALE, Abdullah A, et al. Blended Learning Adoption and Implementation in Higher Education: A Theoretical and Systematic Review. Technology, Knowledge and Learning. June 2022;27(2):531-78.

21. Anthony-Okeke L, Cockayne H, Edwards M, Lomer S. Estimating the cost of blended / hybrid post-pandemic teaching and learning. 2012. Available in: https://pure.manchester.ac.uk/ws/portalfiles/portal/198515758/FINAL_Estimating_the_cost_of_blended_hybrid_learning.pdf

22. Anthonysamy L, Koo AC, Hew SH. Self-Regulated Learning Strategies and Non-Academic Outcomes in Higher Education Blended Learning Environments: A One Decade Review. Education and Information Technologies. September 2020;25(5):3677-704.

23. Antwi-Boampong A. Blended Learning Adoption in Higher Education: Presenting the Lived Experiences of Students in a Public University from a Developing Country. Turkish Online Journal of Educational Technology - TOJET. April 2021;20(2):14-22.

24. Antwi-Boampong A, Bokolo AJ. Towards an Institutional Blended Learning Adoption Model for Higher Education Institutions. Technology, Knowledge and Learning. Septembre 2022;27(3):765-84.

25. Ascencio R. The Impact of Blended Learning in Higher Education Retention. University of Maryland University; 2023.

26. Ashraf MA, Tsegay SM, Meijia Y. Blended Learning for Diverse Classrooms: Qualitative Experimental Study with In-Service Teachers. SAGE Open. Septembre 2021;11(3).

27. Awofala AO, Oladipo AJ. A Simulation Study of Preservice STM Teachers' Technostress as Related to Supposed Utility, Attitudes Towards Portable Technology and Continuance Intents to Use Portable Technology. Digital Education Review. 2023;

28. Ayyanathan N. Learning Analytics Model and Bloom's Taxonomy Based Evaluation Framework for the Post Graduate Students' Project Assessment -- A Blended Project Based Learning Management System with Rubric Referenced Predictors. Shanlax International Journal of Education. June 2022;10(3):48-60.

29. Bada JK. Evaluating Blended Learning of a Systems Analysis and Design Course in an MBA Class. International Journal of Education and Development using Information and Communication Technology. 2022;18(3):76-92.

30. Baroni F, Lazzari M. Universal Design for Learning at University: Technologies, Blended Learning and Teaching Methods. Online Submission; 2022.

31. Bayyat M. Blended Learning: A New Approach to Teach Ballet Technique for Undergraduate Students. Turkish Online Journal of Distance Education. April 2020;21(2):69-86.

32. Bebbington W. Leadership Strategies for a Higher Education Sector in Flux. Studies in Higher Education. 2021;46(1):158-65.

33. Bekele TA, Karkouti IM, Amponsah S. Core Conceptual Features of Successful Blended Learning in Higher Education: Policy Implications. Education Policy Analysis Archives. October 2022;30(156).

34. Bekmanova G, Ongarbayev Y, Somzhurek B, Mukatayev N. Personalized Training Model for Organizing Blended and Lifelong Distance Learning Courses and Its Effectiveness in Higher Education. Journal of Computing in Higher Education. December 2021;33(3):668-83.

35. Belt ES, Lowenthal PR. Video Use in Online and Blended Courses: A Qualitative Synthesis. Distance Education. 2021;42(3):410-40.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

36. Bernay R, Jenkin C, Utumapu-McBride T, Schoone A, Gibbons A. A Review of Undergraduate Education Student Responses to the Online Component of Blended Learning: A Cautionary Tale. Australian Journal of Teacher Education. June 2022;47(6):37-54.

37. Bervell B, Umar IN. Blended Learning or Face-to-Face? Does Tutor Anxiety Prevent the Adoption of Learning Management Systems for Distance Education in Ghana? Open Learning. 2020;35(2):159-77.

38. Bervell B, Umar IN, Masood M, Kumar JA, Armah JK, Somuah BA. Promoting Voluntary Use Behavior of Learning Management Systems among Tutors for Blended Learning in Distance Higher Education. Contemporary Educational Technology. 2022;14(4).

39. Beytekin OF. Transformation of Higher Education into New Normal. Higher Education Studies. 2021;11(3):125-33.

40. Bilbao-Aiastui E, Gómez AA, Morillo RC. Definition of a Self-Reflection Tool Named Aurora for the Assessment of University Professors' Digital Competence. Digital Education Review. 2023;

41. Blackmon SJ, Major CH. Inclusion or Infringement? A Systematic Research Review of Students' Perspectives on Student Privacy in Technology-Enhanced, Hybrid and Online Courses. British Journal of Educational Technology. November de 2023;54(6):1542-65.

42. Border S, Woodward C, Kurn O, Birchall C, Laurayne H, Anbu D, et al. Working in Creative Partnership with Students to Co-Produce Neuroanatomy E-Learning Resources in a New Era of Blended Learning. Anatomical Sciences Education. August 2021;14(4):417-25.

43. Bordoloi R, Das P, Das K. Perception towards Online/Blended Learning at the Time of COVID-19 Pandemic: An Academic Analytics in the Indian Context. Asian Association of Open Universities Journal. 2021;16(1):41-60.

44. Bosch C, Laubscher DJ, Kyei-Blankson L. Re-Envisioning and Restructuring Blended Learning for Underprivileged Communities. Advances in Educational Technologies and Instructional Design (AETID) Book Series. IGI Global; 2021.

45. Bozkurt A. A Retro Perspective on Blended/Hybrid Learning: Systematic Review, Mapping and Visualization of the Scholarly Landscape. Journal of Interactive Media in Education. 2022;2022(1).

46. Bozkurt A. Resilience, Adaptability, and Sustainability of Higher Education: A Systematic Mapping Study on the Impact of the Coronavirus (COVID-19) Pandemic and the Transition to the New Normal. Journal of Learning for Development. 2022;9(1):1-16.

47. Broberg N, Golden G. How Are OECD Governments Navigating the Digital Higher Education Landscape? Evidence from a Comparative Policy Survey. OECD Education Working Papers. No. 303. OECD Publishing; 2023.

48. Brown M. What Are the Main Trends in Online Learning? A Helicopter View of Possible Futures. Asian Journal of Distance Education. 2021;16(2):118-43.

49. Buhl-Wiggers J, Kjaergaard A, Munk K. A Scoping Review of Experimental Evidence on Face-to-Face Components of Blended Learning in Higher Education. Studies in Higher Education. 2023;48(1):151-73.

50. Cacciamani S, Perrucci V, Fujita N. Promoting Students' Collective Cognitive Responsibility through Concurrent, Embedded and Transformative Assessment in Blended Higher Education Courses. Technology, Knowledge and Learning. December de 2021;26(4):1169-94.

51. Calderón A, Scanlon D, MacPhail A, Moody B. An Integrated Blended Learning Approach for Physical Education Teacher Education Programmes: Teacher Educators' and Pre-Service Teachers' Experiences. Physical Education and Sport Pedagogy. 2021;26(6):562-77.

52. Carthy Ú. Blended Mobility Project: Ireland, Germany, and Spain. Research-publishing.net; 2022.

53. Castro-Gil R, Correa D. Transparency in Previous Literature Reviews about Blended Learning in Higher Education. Education and Information Technologies. mayo de 2021;26(3):3399-426.

54. Chang H, Windeatt S. Designing and Applying a Moodle-Based E-Textbook for an Academic Writing Course. International Journal of Mobile and Blended Learning. 2021;13(2):73-95.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

55. Chang Y, Lee E. Addressing the Challenges of Online and Blended STEM Learning with Grounded Design. Australasian Journal of Educational Technology. 2022;38(5):163-79.

56. Chen PJ. Looking for the Right Blend: A Blended EFL University Writing Course. Computer Assisted Language Learning. 2023;36(7):1147-76.

57. Choi H, Hur J. Passive Participation in Collaborative Online Learning Activities: A Scoping Review of Research in Formal School Learning Settings. Online Learning. March 2023;27(1):127-57.

58. Choi-Lundberg DL, Butler-Henderson K, Harman K, Crawford J. A Systematic Review of Digital Innovations in Technology-Enhanced Learning Designs in Higher Education. Australasian Journal of Educational Technology. 2023;39(3):133-62.

59. Christensen JM. Student Preferences and Decisions for Online or In-Person Class Sessions in Blended Learning. Brigham Young University; 2021.

60. Clark CEJ, Post G. Preparation and Synchronous Participation Improve Student Performance in a Blended Learning Experience. Australasian Journal of Educational Technology. 2021;37(3):187-99.

61. Coco M. Career and Technical Education. Scorecard Analysis Annual Report: 2020-2021. Publication 20.27. Online Submission; 2022.

62. Courduff J, Lee H, Cannaday J. The Impact and Interrelationship of Teaching, Cognitive, and Social Presence in Face-to-Face, Blended, and Online Masters Courses. Distance Learning. 2021;18(1):1-12.

63. Crosling G, Lee ASH, Passey D, Azizan SN. A Study of the Use of Blended Learning/Online Learning Tools in a Higher Education Institution in an ASEAN Country. Journal of Educators Online. mayo de 2023;20(3).

64. Cukurbasi B. Review of Student Opinions on Blended Educational Implementations in the Pandemic Process: A Case Study. Journal of Educational Technology and Online Learning. 2022;5(1):66-83.

65. Cuming T, Verdon S, Hoffman L, Hopf SC, Brown L. Mothers' Experiences of Engaging in Blended Online Learning in Higher Education. International Journal of Lifelong Education. 2023;42(2):177-94.

66. Damanik EL. Blended Learning: An Innovative Approach on Social Sciences at Indonesian Higher Education. Education Quarterly Reviews. 2020;3(1):52-65.

67. Davidson J, Prahalad V, Harwood A. Design Precepts for Online Experiential Learning Programs to Address Wicked Sustainability Problems. Journal of Geography in Higher Education. 2021;45(3):319-41.

68. Davidson ZCM, Dang S, Vasilakos X. Blended Laboratory Design Using Raspberry Pi Pico for Digital Circuits and Systems. IEEE Transactions on Learning Technologies. 2024;17:1170-83.

69. Davis H. Going beyond the 20% student mobility benchmark. Geneva: European University Association; 2023 sep p. 23. Available in: https://www.eua.eu/images/publications/Publication_PDFs/Mobility_target_briefing.pdf

70. de Freitas S, Waring P, Douglas HE, Curtis GJ, Ritchie SM. Delivering Blended Learning to Transnational Students: Students' Perceptions and Needs-Satisfaction. Studies in Higher Education. 2022;47(9):1890-902.

71. Eggers JH, Oostdam R, Voogt J. Self-Regulation Strategies in Blended Learning Environments in Higher Education: A Systematic Review. Australasian Journal of Educational Technology. 2021;37(6):175-92.

72. Eliza MM. Digital Transformation in Adult Education: Empowering Global Understanding and Sustainable Development. Journal of Educational Sciences. 2023;24:46-63.

73. Ellis R, Bliuc AM, Han F. Challenges in Assessing the Nature of Effective Collaboration in Blended University Courses. Australasian Journal of Educational Technology. 2021;37(1):1-14.

74. Erwin B. A Policymaker's Guide to Virtual Schools. Policy Guide. Education Commission of the States. 2021.

75. European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. EADTU-ENQA Peer Learning Activity on blended and online education. EADTU-ENQA; 2017 p. 3. (Peer Learning Activity). Available in: https://eadtu.eu/documents/News/2017_-_EADTU-ENQA_PLA_Outcomes.pdf

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

76. European Association for Quality Assurance in Higher Education, European Association of Distance Teaching Universities. The development of blended and online programmes in European higher education: Issues of quality assurance. EADTU-ENQA; 2017 nov p. 43. (Peer Learning Activity).

77. European Education Area. Digital education action plan (2021–2027). European Commission; 2022. Available in: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=legissum:4617905

78. European University Association. Universities without Walls: A Vision for 2030. European University Association; 2021.

79. Evenhouse DA. Student Implementation Experiences in Blended Learning: A Phenomenographic and Narrative Analysis to Inform Pedagogical Innovation. Purdue University; 2020.

80. Fardella C, Baleriola E, Enciso G. Practices and Discourses of Academics: Local Lessons to Address the Digital Shift in Academic Management. Digital Education Review. 2020;

81. Farmati C, Yeou M, Benzehaf B. Blended Learning in English for Specific Purposes Instruction: A Systematic Review. Digital Education Review. 2023;

82. Fichten C, Havel A, Wileman S, Jorgensen M, Arcuri R, Ruffolo O. Digital Tools Faculty Expected Students to Use during the COVID-19 Pandemic in 2021: Problems and Solutions for Future Hybrid and Blended Courses. Online Submission; 2021 oct p. 24-30.

83. Floris F, Genovese A, Marchisio M, Roman F, Sacchet M. Teacher Support in COVID-19 Pandemic to Develop Blended Learning Disruptive Models in Higher Education. International Association for Development of the Information Society; 2020.

84. Fuller L. Negotiating a New Blend in Blended Learning: Research Roots. Inquiry. mayo de 2021;24(1).

85. Fuzi B, Géring Z, Szendrei-Pál E. Changing Expectations Related to Digitalization and Socialization in Higher Education. Horizon Scanning of Pre- and Post-COVID-19 Discourses. Educational Review. 2022;74(3):484-516.

86. Gaddis ML. Faculty and Student Technology Use to Enhance Student Learning. International Review of Research in Open and Distributed Learning. November de 2020;21(4):39-60.

87. Gaebel M. New forms of student mobility and internationalization: what challenges for QA?. European University Association; 2023 p. 23. Available in: https://www.eua.eu/images/site1/events/2023/EQAF/Plenary_I_Gaebel.pdf

88. Gaebel M, Zhang T, Stoeber H, Morrisroe A. Digitally Enhanced Learning and Teaching in European Higher Education Institutions. Survey Report. European University Association; 2021.

89. Gallego-Arrufat MJ, García-Martínez I, Romero-López MA, Torres-Hernández N. Digital Rights and Responsibility in Education: A Scoping Review. Education Policy Analysis Archives. 2024;32(3).

90. Gao N, Hill L, Lafortune J. Distance Learning Strategies in California Schools. Public Policy Institute of California; 2021.

91. Gardner KM. Exploring Blended Learning Supports for First-Generation and Underrepresented Minoritized Undergraduate Students. Brigham Young University; 2023.

92. Garone A, Bruggeman B, Philipsen B, Pynoo B, Tondeur J, Struyven K. Evaluating Professional Development for Blended Learning in Higher Education: A Synthesis of Qualitative Evidence. Education and Information Technologies. julio de 2022;27(6):7599-628.

93. Ginzburg T, Daniela L. Adults' Perceptions of Studying English in Face-to-Face, Online, and Blended Modalities. IAFOR Journal of Education. 2024;12(1):67-92.

94. Goeman K, Dijkstra W. Creating Mature Blended Education: The European Maturity Model Guidelines. Higher Education Studies. 2022;12(3):34-46.

95. Goh TT, Yang B. The Role of E-Engagement and Flow on the Continuance with a Learning Management System in a Blended Learning Environment. International Journal of Educational Technology in Higher Education. 2021;18.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

96. Goldhaber D, Kane TJ, McEachin A, Morton E, Patterson T, Staiger DO. The Consequences of Remote and Hybrid Instruction during the Pandemic. Working Paper No. 267-0522. National Center for Analysis of Longitudinal Data in Education Research (CALDER); 2022.

97. Gonick L. Scaling Silver Linings: Change and Sustainability in a Pandemic. Change: The Magazine of Higher Learning. 2021;53(1):18-21.

98. Graduate Management Admission Council. GMAC Prospective Students Survey. 2023 Summary Report. London: Graduate Management Admission Council; 2023. Available in: https://www.gmac.com/-/media/files/gmac/research/prospective-student-data/2023_prospectivestudentsummary_v2.pdf

99. Groen J, Ghani S, Germain-Rutherford A, Taylor M. Institutional Adoption of Blended Learning: Analysis of an Initiative in Action. Canadian Journal for the Scholarship of Teaching and Learning. December de 2020;11(3).

100. Guàrdia L, Clougher D, Anderson T, Maina M. IDEAS for Transforming Higher Education: An Overview of Ongoing Trends and Challenges. International Review of Research in Open and Distributed Learning. mayo de 2021;22(2):166-84.

101. Hadiyanto H, Failasofah F, Armiwati A, Abrar M, Thabran Y. Students' Practices of 21st Century Skills between Conventional Learning and Blended Learning. Journal of University Teaching and Learning Practice. 2021;18(3).

102. Halibas AS, Hoang MDT. Charting Blended Learning in the Social Media Age: A Bibliometric Perspective and Pathways for Future Development. Journal of Information Technology Education: Research. 2024;23.

103. Hamad F, Shehata A, Hosni NA. Predictors of Blended Learning Adoption in Higher Education Institutions in Oman: Theory of Planned Behavior. International Journal of Educational Technology in Higher Education. 2024;21.

104. Han F, Ellis RA. Assessing the Quality of University Student Experiences in Blended Course Designs: An Ecological Perspective. Higher Education Research and Development. 2021;40(5):964-80.

105. Hapke H, Lee-Post A, Dean T. 3-in-1 Hybrid Learning Environment. Marketing Education Review. 2021;31(2):154-61.

106. Hasanah H, Malik MN. Blended Learning in Improving Students' Critical Thinking and Communication Skills at University. Cypriot Journal of Educational Sciences. 2020;15(5):1295-306.

107. Hehir E, Zeller M, Luckhurst J, Chandler T. Developing Student Connectedness under Remote Learning Using Digital Resources: A Systematic Review. Education and Information Technologies. septiembre de 2021;26(5):6531-48.

108. Henderikx P, Ubachs G. Models and guidelines for digital collaboration and mobility in European higher education. Zenodo; 2022. Available in: https://zenodo.org/record/7016333

109. Hernández Encuentra E, Barberà Gregori E. Online Readiness in Universities from Disabled Students' Perspective. Digital Education Review. 2021;

110. Herodotou C, Muirhead DK, Aristeidou M, Hole MJ, Kelley S, Scanlon E, et al. Blended and Online Learning: A Comparative Study of Virtual Microscopy in Higher Education. Interactive Learning Environments. 2020;28(6):713-28.

111. HIBLend Project. Exploring the Key Aspects of Blended Student Mobility. HIBLend Project. 2023. Available in: https://hiblend.eu/exploring-the-key-aspects-of-blended-student-mobility/

112. Hill J, Smith K. Visions of Blended Learning: Identifying the Challenges and Opportunities in Shaping Institutional Approaches to Blended Learning in Higher Education. Technology, Pedagogy and Education. 2023;32(3):289-303.

113. Hueske AK, Aggestam Pontoppidan C, Iosif-Lazar LC. Sustainable Development in Higher Education in Nordic Countries: Exploring E-Learning Mechanisms and SDG Coverage in MOOCs. International Journal of Sustainability in Higher Education. 2022;23(1):196-211.

114. Hundarenko O, Leláková E, Bacová B. Sustainability of Foreign Language Education at a Slovak University during COVID-19 Global Pandemic. Arab World English Journal. 2022;

115. Hundey B, Anstey L, Cruickshank H, Watson GPL. Mentoring Faculty Online: A Literature Review and Recommendations for Web-Based Programs. International Journal for Academic Development. 2020;25(3):232-46.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

116. Ipek J, Kalay A, Ertas S. Examination of Teacher Candidates' Views on Peer Learning Performed with Interactive Videos in the Blended Learning Process. Education Quarterly Reviews. 2021;4(2):301-11.

117. Ivanova EM, Vishnekov AV. A Computer Design Method of an Effective Educational Trajectory in Blended Learning Based on Students' Assessment. Education and Information Technologies. March 2020;25(2):1439-58.

118. Jahn VB, Lombaerts K. Actualizing Affordances of Audiobooks for Elective Readings in a University Course. International Journal of Mobile and Blended Learning. 2022;14(2).

119. Jansen D, Schuwer R, Teixeira A, Aydin CH. Comparing MOOC Adoption Strategies in Europe: Results from the HOME Project Survey. International Review of Research in Open and Distributed Learning. November de 2015;16(6):116-36.

120. Jazayeri M, Li X. Examining the Effect of Blended Instructional Method on Students' Grades in an Introductory Statistics Course. International Journal of Mathematical Education in Science and Technology. 2021;52(8):1240-9.

121. Jiang L. Factors Influencing EFL Teachers' Implementation of SPOC-Based Blended Learning in Higher Vocational Colleges in China: A Study Based on Grounded Theory. Interactive Learning Environments. 2024;32(3):859-78.

122. Jimenez EC. Project N.E.W. - N.O.R.M.A.L.: Navigating Electronic World to Numerous Online Resources of Modality Approaches in Learning. Online Submission; 2021 p. 134-40.

123. Joshi DR, Neupane U, Joshi PR. Synthesis Review of Digital Frameworks and DEPSWALIC Digital Competency Framework for Teachers from Basic to University Level. Mathematics Teaching Research Journal. 2021;13(2):108-36.

124. Just E. Learning and Students' Experiences with Blended Education. International Journal of Higher Education. 2021;10(6):213-23.

125. Kapenieks J, Kapenieks J. Spaced E-Learning for Sustainable Education. Journal of Teacher Education for Sustainability. diciembre de 2020;22(2):49-65.

126. Kara A. COVID-19 Pandemic and Possible Trends for the Future of Higher Education: A Review. Journal of Education and Educational Development. junio de 2021;8(1):9-26.

127. Kastner JA. Blended Learning: Moving beyond the Thread Quality of Blended Learning and Instructor Experiences. Journal of Educators Online. julio de 2020;17(2).

128. Kelly O, Hall T, Connolly C. PACE-IT: Designing Blended Learning for Accounting Education in the Challenging Context of a Global Pandemic. Accounting Education. 2023;32(6):626-45.

129. Khaldi A, Bouzidi R, Nader F. Gamification of E-Learning in Higher Education: A Systematic Literature Review. Smart Learning Environments. 2023;10.

130. Khamitova A. Innovative Learning Spaces of Higher Education: A Systematic Mapping Review of Themes. TechTrends: Linking Research and Practice to Improve Learning. septiembre de 2023;67(5):830-42.

131. Khan MEI. Deploying Blended Learning in the New Normal Pedagogy: Challenges and Prospects in Bangladesh. Online Submission; 2021 dic p. 531-8.

132. Khashaba AS. Evaluation of the Effectiveness of Online Peer-Based Formative Assessments (PeerWise) to Enhance Student Learning in Physiology: A Systematic Review Using PRISMA Guidelines. International Journal of Research in Education and Science. 2020;6(4):613-28.

133. Khor ET, Dave D. A Learning Analytics Approach Using Social Network Analysis and Binary Classifiers on Virtual Resource Interactions for Learner Performance Prediction. International Review of Research in Open and Distributed Learning. November de 2022;23(4):123-46.

134. Knoch S. Types of learning mobility: Blended, hybrid and online. Paris: European Union. Council of Europe Youth Partnership; 2022 mar p. 10. Available in: https://pjp-eu.coe.int/en/web/youth-partnership/-/types-of-learning-mobility-blended-hybrid-and-online

135. Kuswoyo H, Rido A, Mandasari B. A Systematic Review of Research on EFL Online Learning: Effectiveness, Challenges, Learning Tools, and Suggestions. International Association for Development of the Information Society. 2022;

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

136. Le TN, Allen B, Johnson NF. Blended Learning: Barriers and Drawbacks for English Language Lecturers at Vietnamese Universities. E-Learning and Digital Media. March 2022;19(2):225-39.

137. Le TN, Johnson NF. Supporting and Managing EFL Students' Online Learning in Vietnamese Blended Learning Environments. Issues in Educational Research. 2022;32(3):1001-19.

138. Lee GG, Hong HG. Development and Validation of the Blended Laboratory and E-Learning Instructional Design (BLEND) Model for University Remote Laboratory Sessions: Responding to the COVID-19 Pandemic and Planning for the Future. Educational Technology Research and Development. 2024;72(2):1025-65.

139. Leung JKL, Chu SKW, Pong TC, Ng DTK, Qiao S. Developing a Framework for Blended Design-Based Learning in a First-Year Multidisciplinary Design Course. IEEE Transactions on Education. mayo de 2022;65(2):210-9.

140. Li S, Liu Q, Guo S, Li Y, Chen F, Wang C, et al. Research on the Application of the Blended BOPPPS Based on an Online and Offline Mixed Teaching Model in the Course of Fermentation Engineering in Applied Universities. Biochemistry and Molecular Biology Education. junio de 2023;51(3):244-53.

141. Li X, Yang Y, Chu SKW, Zainuddin Z, Zhang Y. Applying Blended Synchronous Teaching and Learning for Flexible Learning in Higher Education: An Action Research Study at a University in Hong Kong. Asia Pacific Journal of Education. 2022;42(2):211-27.

142. Lin CY, Huang CK, Ko CJ. The Impact of Perceived Enjoyment on Team Effectiveness and Individual Learning in a Blended Learning Business Course: The Mediating Effect of Knowledge Sharing. Australasian Journal of Educational Technology. 2020;36(1):126-41.

143. Liu H, Zhu J, Duan Y, Nie Y, Deng Z, Hong X, et al. Development and Students' Evaluation of a Blended Online and Offline Pedagogy for Physical Education Theory Curriculum in China during the COVID-19 Pandemic. Educational Technology Research and Development. December 2022;70(6):2235-54.

144. Lomer S, Palmer E. «I Didn't Know This Was Actually Stuff That Could Help Us, with Actually Learning»: Student Perceptions of Active Blended Learning. Teaching in Higher Education. 2023;28(4):679-98.

145. Long NT, Van Hanh N. A Structural Equation Model of Blended Learning Culture in the Classroom. International Journal of Higher Education. 2020;9(4):99-115.

146. Luan H, Tsai CC. A Review of Using Machine Learning Approaches for Precision Education. Educational Technology & Society. January 2021;24(1):250-66.

147. Luo Y, Han X, Zhang C. Prediction of Learning Outcomes with a Machine Learning Algorithm Based on Online Learning Behavior Data in Blended Courses. Asia Pacific Education Review. 2024;25(2):267-85.

148. Ma X, Ma X, Li L, Luo X, Zhang H, Liu Y. Effect of Blended Learning with BOPPPS Model on Chinese Student Outcomes and Perceptions in an Introduction Course of Health Services Management. Advances in Physiology Education. June 2021;45(2):409-17.

149. Majed N, Ara A, Chowdhury SR. Meeting the Challenges of Online Education during COVID-19 Pandemic: Implications for Blended Learning. Shanlax International Journal of Education. 2024;12(2):20-31.

150. Majeed M, Rehan Dar F. Investigating the Efficacy of Blended Learning in ESL Classrooms. Cogent Education. 2022;9(1).

151. Maloney S, Nicklen P, Rivers G, Foo J, Ooi YY, Reeves S, et al. A Cost-Effectiveness Analysis of Blended Versus Face-to-Face Delivery of Evidence-Based Medicine to Medical Students. J Med Internet Res. 21 July 2015;17(7):e182.

152. Mansfield S, King S, Rice P. Student Satisfaction with Online Academic Skills Session during the Pandemic. Journal of University Teaching and Learning Practice. 2022;19(5). Available in: https://eric.ed.gov/?id=EJ1373337

153. Marden MP, Herrington J. Collaborative Foreign Language Learning Practices and Design Principles for Supporting Effective Collaboration in a Blended Learning Environment. Educational Media International. 2020;57(4):299-315.

154. Martin F, Wu T, Wan L, Xie K. A Meta-Analysis on the Community of Inquiry Presences and Learning Outcomes in Online and Blended Learning Environments. Online Learning. March 2022;26(1):325-59.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

155. McCarthy S, Palmer E. Defining an Effective Approach to Blended Learning in Higher Education: A Systematic Review. Australasian Journal of Educational Technology. 2023;39(2):98-114.

156. McLear AS. HBCU Students' Experience with Remote and Blended Learning Amid COVID-19. Walden University; 2023.

157. Mdletye Z, Usadolo SE. Using a Blended Learning Approach to Encourage Course Interaction in a First-Year Business Communication Module. Research in Social Sciences and Technology. 2024;9(1):185-212.

158. Mendoza A, Venables A. Attributes of Blended Learning Environments Designed to Foster a Sense of Belonging for Higher Education Students. Journal of Information Technology Education: Research. 2023;22:129-56.

159. Míguez-Álvarez C, Crespo B, Arce E, Cuevas M, Regueiro A. Blending Learning as an Approach in Teaching Sustainability. Interactive Learning Environments. 2022;30(9):1577-92.

160. Mihele R. Online Teaching and Learning between Temporary Solution and Future Necessity. Romanian Review of Geographical Education. August de 2021;10(2):45-66.

161. Millner SC. The Sharing Perspectives Foundation: A Case Study in Blended Mobility. Research-publishing; 2020 nov. Available in: https://eric.ed.gov/?id=ED610276

162. Mitchell S, Swayne H, Fulton KA, Lister JJ. Infusing the UN Sustainable Development Goals into a Global Learning Initiative. International Journal of Development Education and Global Learning. 2020;12(2):92-105.

163. Mnisi K. A Case for Deliberate and Accommodative Design for Blended Teaching and Learning in Universities in Developing Countries. Perspectives in Education. 2023;41(2):195-210.

164. Mohee R, Perris K. A Guide for Implementing a Quality Assurance Institutional Review Tool for Blended Learning. Commonwealth of Learning. 2021;

165. Moni A. Learner Perceptions of the Feedback Process in the Online Component of a Blended Course. Online Learning. 2024;28(2).

166. Moodie DR. A Case Study in How Different Teaching Methods Affect Different Student Demographics across a University. Quarterly Review of Distance Education. 2022;23(2):1-34.

167. Morris D. A Review of Information Literacy Programmes in Higher Education: The Effects of Face-to-Face, Online and Blended Formats on Student Perception. Journal of Information Literacy. junio de 2020;14(1):19-40.

168. Mostafa I, Kakarougkas A. Blended/Flipped Biology Classes during COVID-19. Biochemistry and Molecular Biology Education. October de 2023;51(5):540-7.

169. Muhuro P, Kang'ethe SM. Prospects and Pitfalls Associated with Implementing Blended Learning in Rural-Based Higher Education Institutions in Southern Africa. Perspectives in Education. 2021;39(1):427-41.

170. Mula-Falcón J, Cruz-González C, Domingo Segovia J, Lucena Rodríguez C. Review of Higher Education Policy during the Pandemic: A Spanish Perspective. Policy Futures in Education. mayo de 2023;21(4):465-85.

171. Müller C, Mildenberger T, Steingruber D. Learning Effectiveness of a Flexible Learning Study Programme in a Blended Learning Design: Why Are Some Courses More Effective than Others? International Journal of Educational Technology in Higher Education. 2023;20.

172. Muse K, Scurlock-Evans L, Scott H. 'The Most Important Question Is Not «How?» but «Why?»: A Multi-Method Exploration of a Blended e-Learning Approach for Teaching Statistics within Undergraduate Psychology. Psychology Teaching Review. 2021;27(1):26-41.

173. Neves J, Stephenson R. Student Academic Experience Survey, 2023. Higher Education Policy Institute; 2023.

174. Ntorukiri TB, Kirugua JM, Kirimi F. Policy and Infrastructure Challenges Influencing ICT Implementation in Universities: A Literature Review. Discover Education. 2022;1(1).

175. Nwosu LI, Bereng MC, Segotso T, Enebe NB. Fourth Industrial Revolution Tools to Enhance the Growth and Development of Teaching and Learning in Higher Education Institutions: A Systematic Literature Review in South Africa. Research in Social Sciences and Technology. 2023;8(1):51-62.

176. Obada DO, Bako RB, Ahmed AS, Anafi FO, Eberemu AO, Dodoo-Arhin D, et al. Teaching Bioengineering Using a Blended Online Teaching and Learning Strategy: A New Pedagogy for Adapting Classrooms in Developing Countries. Education and Information Technologies. abril de 2023;28(4):4649-72.

177. OECD. A brave new world: Technology and education. Paris: OECD; 2018 jun. (Trends Shaping Education Spotlights; vol. 15). Report No.: 15. Available in: https://www.oecd.org/en/publications/a-brave-new-world_9b181d3c-en.html

178. OECD. Organization for Economic Cooperation and Development. The State of Higher Education: One Year into the COVID-19 Pandemic. OECD Publishing; 2021.

179. Office for Students. Gravity assist: propelling higher education towards a brighter future. Bristol: Office for Students; 2021 feb p. 160. Available in: https://blobofsproduks.blob.core.windows.net/files/Gravity%20assist/Gravity-assist-DTL-finalforweb.pdf

180. Okinda R, Waters M, Petterd R, Smith C. Digital and Professional Teacher Competency Standards for Blended TVET. Commonwealth of Learning; 2023.

181. Olney T, Piashkun S. Professional Development for Sustaining the «Pivot»: The Impact of the Learning Design and Course Creation Workshop on Six Belarusian HEIs. Journal of Interactive Media in Education. 2021;2021(1).

182. Osakwe NN, DeCuir E, Smithee MB. Internationalization for All Learners: Global Learning at Home as a Strategic Process. International Research and Review. 2022;11(2):25-47.

183. Ossiannilsson E. Considerations for Quality Assurance of E-Learning Provision. JECP. 16 de junio de 2019;(1):222-30.

184. Pacheco MA de la P, Mahecha JDR, Campo MM, Torres J. Effectiveness of Online and Blended Teaching Methods in Developing Professional Engineering Cross-Curricular Skills: A Study in the Context of Latin America. Research in Comparative and International Education. 2024;19(2):197-223.

185. Padilla Rodriguez BC, Armellini A. Cases on Active Blended Learning in Higher Education. Advances in Educational Technologies and Instructional Design (AETID) Book Series. IGI Global; 2021.

186. Paker T, Balci E. A Study on the Experiences of Students and Instructors in Blended Instruction and Learning in an English Preparatory School. International Online Journal of Education and Teaching. 2020;7(4):1709-29.

187. Peimani N, Kamalipour H. The Future of Design Studio Education: Student Experience and Perception of Blended Learning and Teaching during the Global Pandemic. Education Sciences. 140d. C.;12.

188. Perera CJ, Zainuddin Z, Piaw CY, Cheah KSL, Asirvatham D. The Pedagogical Frontiers of Urban Higher Education: Blended Learning and Co-Lecturing. Education and Urban Society. diciembre de 2020;52(9):1305-29.

189. Pérez-Escoda A, Lena-Acebo FJ, García-Ruiz R. Digital Competences for Smart Learning during COVID-19 in Higher Education Students from Spain and Latin America. Digital Education Review. 2021;

190. Perry T, Findon M, Cordingley P. Remote and Blended Teacher Education: A Rapid Review. Education Sciences. 453d. C.;11.

191. Pinto M, Leite C. Digital Technologies in Support of Students Learning in Higher Education: Literature Review. Digital Education Review. 2020;

192. Podsiadlik A. The Blended Learning Experiences of Students with Specific Learning Difficulties: A Qualitative Case Study Located in One British Higher Education Institution. International Journal of Disability, Development and Education. 2023;70(3):366-81.

193. Prasetiyo WH, Naidu NBM, Tan BP, Sumardjoko B. Digital Citizenship Trend in Educational Sphere: A Systematic Review. International Journal of Evaluation and Research in Education. diciembre de 2021;10(4):1192-201.

194. Pretorius RW, Carow S, Wilson G, Schmitz P. Using Real-World Engagements for Sustainability Learning in ODeL in the Global South: Challenges and Opportunities. International Journal of Sustainability in Higher Education. 2021;22(6):1316-35.

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

195. Prodanova J, San-Martín S, Jerónimo Sánchez-Beato E. Quality Requirements for Continuous Use of E-Learning Systems at Public vs. Private Universities in Spain. Digital Education Review. 2021;

196. Qassim FM, Jumani NB, Malik S. Role of Administrators in Blended Learning in Higher Education Institutions. Pakistan Journal of Distance and Online Learning. 2023;9(2):29-50.

197. Rahmi U, Azrul. Optimizing the Discussion Methods in Blended Learning to Improve Student's High Order Thinking Skills. Pegem Journal of Education and Instruction. 2022;12(3):190-6.

198. Rashid R. A New Philosophy for 21st Century Postgraduate Education. Issues in Interdisciplinary Studies. 2022;40(1):41-54.

199. Reyes CT, Kyne SH, Lawrie GA, Thompson CD. Implementing Blended First Year Chemistry in a Developing Country Using Online Resources. Online Learning. March 2022;26(1):174-202.

200. Robles H, Burden K, Villalba K. A Socio-Cultural Approach to Evaluating and Designing Reading Comprehension Apps for Language Learning. International Journal of Mobile and Blended Learning. 2021;13(1):18-37.

201. Robson K, Graziano L, O'Neal Schiess J. Portfolio of Choice: Virtual Schooling. Brief. National Comprehensive Center at Westat; 2020.

202. Rodríguez-Chueca J, Molina-García A, García-Aranda C, Pérez J, Rodríguez E. Understanding Sustainability and the Circular Economy through Flipped Classroom and Challenge-Based Learning: An Innovative Experience in Engineering Education in Spain. Environmental Education Research. 2020;26(2):238-52.

203. Rowley WJ. Higher Education in the Midst of a Pandemic: A Dean's Perspective. Revisited. International Dialogues on Education. August 2022;9(2):24-45.

204. Saleh K, Rukiyah I, Arbain M. Blended Learning as a Developmental Model Strategy of Teaching and Learning in Islamic Universities in Indonesia. Dinamika Ilmu. 2021;21(2):463-75.

205. Scott D, Ulmer-Krol S, Ribeiro J. Enhancing the Academic Writing Abilities of First-Year Bachelor of Education Students in a Blended Learning Environment. International Journal of Teaching and Learning in Higher Education. 2020;32(1):87-98.

206. Seaman J, Seaman J. Digital Learning Pulse Survey: The Digital Transformation of the Community College. Bay View Analytics; 2023.

207. Selhorst-Koekkoek M, Rusman E. Multidisciplinary Educational Design Framework to Facilitate Crossboundary Educational Design: Closing Gaps between Disciplines. International Journal of Mobile and Blended Learning. 2023;15(2).

208. Sentürk C. Effects of the Blended Learning Model on Preservice Teachers' Academic Achievements and Twenty-First Century Skills. Education and Information Technologies. January 2021;26(1):35-48.

209. Seraji F. What Differences? Thematic Analyses of Blended Learning Researches in Iran. Open Learning. 2022;37(4):312-29.

210. Shah GJ. Training for «ICT in Education» via Blended Learning Mode: Educators' Experiences and Perceptions. Journal of Educational Technology. March 2020;16(4):42-52.

211. Shamsuddin N, Kaur J. Students' Learning Style and Its Effect on Blended Learning, Does It Matter? International Journal of Evaluation and Research in Education. March 2020;9(1):195-202.

212. Sharma GVSS, Prasad CLVRSV, Rao KS. Post-COVID-19 Era: An Enabler for the Implementation of Blended Learning in Compliance with the NEP 2020. International Journal of Educational Reform. 2024;33(3):295-307.

213. Shurygin V, Abdullayev I, Hajiyev H, Yakutina M, Kozachek A, Zakieva R. Blended Learning: The Effect on Students' Self-Regulation and Academic Achievements. Novitas-ROYAL (Research on Youth and Language). 2024;18(1):137-54.

214. Sia JKM, Chin WL, Voon ML, Adamu AA, Tan SCK. Transitioning from Online Teaching to Blended Teaching in the Post-Pandemic Era: What Has COVID-19 Taught Us? Cogent Education. 2023;10(2).

INVITE

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

215. Smothers M, Colson T, Keown S. Does Delivery Model Matter? The Influence of Course Delivery Model on Teacher Candidates' Self-Efficacy Beliefs towards Inclusive Practices. International Review of Research in Open and Distributed Learning. septiembre de 2020;21(3):41-59.

216. Söderlund A, Blazeviciene A, Elvén M, Vaskelyte A, Strods R, Blese I, et al. Exploring the Activities and Outcomes of Digital Teaching and Learning of Practical Skills in Higher Education for the Social and Health Care Professions: A Scoping Review. Discover Education. 2023;2(1).

217. Soncin M, Agasisti T, Frattini F, Patrucco A, Pero M. The Costs, Quality, and Scalability of Blended Learning in Postgraduate Management Education. Journal of Management Education. diciembre de 2022;46(6):1052-85.

218. Staring F, Brown M, Bacsich P, Ifenthaler D. Digital higher education: Emerging quality standards, practices and supports. 2022 Nov. (OECD Education Working Papers; vol. 281). Report No.: 281. Available in: https://www.oecd.org/en/publications/digital-higher-education_f622f257-en.html

219. Stephenson M, Torn A. Review, Rapid Recall and Reposition: How One HEI Adapted Delivery and Design in the Digital World in Response to COVID-19. Higher Education, Skills and Work-based Learning. 2023;13(4):834-45.

220. Stewart M. Graduate Student Engagement in Blended Learning during the COVID-19 Pandemic: A Qualitative Case Study at a Southeastern Institution of Higher Learning. Benedictine University; 2022.

221. Suardika IK, Alberth, Mursalim, Siam, Suhartini L, Pasassung N. Using WhatsApp for Teaching a Course on the Education Profession: Presence, Community and Learning. International Journal of Mobile and Blended Learning. 2020;12(1):17-32.

222. Sul JH, Peng Z, Kessissoglou N. Implementation of Blended Learning for a Large Size Engineering Mechanics Course. Advances in Engineering Education. 2020;8(2).

223. Syska A, Pritchard C. Blended Learning as a Site of Struggle: A Critical Realist Analysis of Students' Perceptions of Blended Learning and Its Impact on Their Sense of Belonging. Journal of University Teaching and Learning Practice. 2023;20(6).

224. Taimur S, Onuki M, Mursaleen H. Exploring the Transformative Potential of Design Thinking Pedagogy in Hybrid Setting: A Case Study of Field Exercise Course, Japan. Asia Pacific Education Review. diciembre de 2022;23(4):571-93.

225. Tang Q, Zhang T, Jiang L. Influence of Blended Instruction on Students' Learning Effectiveness: The Role of Flow. Education and Information Technologies. February 2023;28(2):1891-909.

226. Tran TTT, Ma Q. Using Formative Assessment in a Blended EFL Listening Course: Student Perceptions of Effectiveness and Challenges. International Journal of Computer-Assisted Language Learning and Teaching. 2021;11(3):17-38.

227. Tuiloma SH. Understanding the Role of Institutional Support for Student Academic Engagement in Higher Education Online and Blended Learning Settings through the Lens of the Academic Communities of Engagement Framework. Brigham Young University; 2022.

228. Tulowitzki P. Cultivating a Global Professional Learning Network through a Blended-Learning Program -- Levers and Barriers to Success. Journal of Professional Capital and Community. 2021;6(2):164-78.

229. Tussupbekova G, Malone KL, Helmer J, Namyssova G, Abdrakhmanova M, Polat F, et al. Graduate Students' Experiences in a Blended Learning Program in Kazakhstan: A Mixed-Method Study Employing Interaction Equivalency Theorem. Contemporary Educational Technology. 2022;14(4).

230. UNESCO. Building Ecosystems for Online and Blended Learning: Advancing Equity and Excellence in Higher Education in the Asia-Pacific. Policy Brief. UNESCO Bangkok; 2021.

231. Usta N. Comparison of Pre-Service Mathematics Teachers' Views on Blended Learning and Distance Learning Applications. International Journal of Curriculum and Instruction. 2022;14(3):2157-87.

232. Ustun AB, Tracey MW. An Effective Way of Designing Blended Learning: A Three Phase Design-Based Research Approach. Education and Information Technologies. mayo de 2020;25(3):1529-52.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

233. Van der Westhuizen M, Hlatshwayo L. Towards Flexible Learning and Teaching: Lessons Learned for Blended Learning and Teaching Post COVID-19 Pandemic. Perspectives in Education. 2023;41(2):151-65.

234. van Valkenburg W, Dijkstra B, Delft University of Technology, The Netherlands and Katie Goeman, van Rompaey V, Poelmans S. European Maturity Model for Blended Education. 2020 may p. 20. Available in: https://embed.eadtu.eu/download/2470/

235. Vander Schee BA, Birrittella TD. Hybrid and Online Peer Group Grading: Adding Assessment Efficiency While Maintaining Perceived Fairness. Marketing Education Review. 2021;31(4):275-83.

236. Vázquez-Cano E, Martín-Monje E, Castrillo de Larreta-Azelain MD. Analysis of PLEs' Implementation under OER Design as a Productive Teaching-Learning Strategy in Higher Education. A Case Study at Universidad Nacional de Educación a Distancia. Digital Education Review. 2016.

237. Veletsianos G, VanLeeuwen CA, Belikov O, Johnson N. An Analysis of Digital Education in Canada in 2017-2019. International Review of Research in Open and Distributed Learning. mayo de 2021;22(2):102-17.

238. Viebig C. Blended Learning in Entrepreneurship Education: A Systematic Literature Review. Education & Training. 2022;64(4):533-58.

239. Vo MH, Zhu C, Diep AN. Examining Blended Learning Implementation in Hard and Soft Sciences: A Qualitative Analysis. International Journal of Research in Education and Science. 2020;6(2):250-72.

240. Vu TT, Bui DBH. Blended Learning in University Writing Classes -- Efficiency and Attitude. THAITESOL Journal. diciembre de 2020;33(2):20-45.

241. Wadams ML, Schick-Makaroff K. Teaching Assistant Development and Contributions in Online, MOOC and Blended Synchronous Settings: An Integrative Review. Journal of Further and Higher Education. 2022;46(8):1023-39.

242. Walker T, Tarabieh K, Goubran S, Machnik-Kekesi G. Sustainable Practices in Higher Education: Finance, Strategy, and Engagement. Palgrave Macmillan; 2023.

243. Walters C, Baker A. Accommodations in a University Model® School: An Examination of Policies and Practices Addressing Student Needs for Families Considering a Blended Educational Setting. Journal of School Choice. 2020;14(3):468-500.

244. Wang X, Guo S. Technology-Supported University Teaching Models in China during the Pandemic: National Survey and Future Prospects. ECNU Review of Education. 2024;7(1):174-81.

245. Wang YF, Tu CM, Hsu L. Learning Outcomes of a Blended Learning System for Green Food and Beverage Education. International Journal of Mobile and Blended Learning. 2020;12(3):66-78.

246. Watson E, Marin LF, White LN, Macciota R, Lefsrud LM. Blended Learning in an Upper Year Engineering Course: The Relationship between Students' Program Year, Interactions with Online Material, and Academic Performance. Canadian Journal for the Scholarship of Teaching and Learning. diciembre de 2020;11(3).

247. Whiting H, Blackmore C, Vitali J, Langfield T, Colthorpe K, Ernst H, et al. Theories of Blended Learning: A Novel Approach to Tertiary Neuroanatomy. International Journal of Higher Education. 2022;11(4):191-200.

248. Widodo HP, Allamnakhrah A. The Impact of a Blended Professional Learning Community on Teacher Educators' Professional Identity: Towards Sustainable Teacher Professional Development. Journal of Education for Teaching: International Research and Pedagogy. 2020;46(3):408-10.

249. Wijayaratna KP, Hossein Rashidi T, Gardner L. Adapting to the Emergence of Generation Z in Tertiary Education: Application of Blended Learning Initiatives in Transport Engineering. Journal of Civil Engineering Education. julio de 2023;149(3).

250. Xi H, Sang D. Construction and Application of a College English Blended Teaching System Based on Multi-Source Data Fusion. International Journal of Information and Communication Technology Education. 2024;20(1).

251. Xu D, Glick D, Rodriguez F, Cung B, Li Q, Warschauer M. Does Blended Instruction Enhance English Language Learning in Developing Countries? Evidence from Mexico. British Journal of Educational Technology. January 2020;51(1):211-27.

R5A1 - Review and report of the evidence on policies

Co-funded by the
Erasmus+ Programme
of the European Union

252. Yang Y. Impact of Organizational Support on Students' Information and Communication Technology Self-Efficacy, Engagement, and Satisfaction in a Blended Learning Environment: An Empirical Study. SAGE Open. 2023;13(4).

253. Yang YF, Kuo NC. Blended Learning to Foster EFL College Students' Global Literacy. Computer Assisted Language Learning. 2023;36:81-102.

254. Yao H, Brossard M, Mizunoya S, Nasir B, Walugembe P, Cooper R, et al. How Much Does Universal Digital Learning Cost? Policy Brief. UNICEF Office of Research - Innocenti; 2021.

255. Yu L, Chen S, Recker M. Structural Relationships between Self-Regulated Learning, Teachers' Credibility, Information and Communications Technology Literacy and Academic Performance in Blended Learning. Australasian Journal of Educational Technology. 2021;37(4):33-50.

256. Zgraggen M. Blended Learning Model in a Vocational Educational Training Hospitality Setting: From Teachers' Perspectives. International Journal of Training Research. 2021;19(3):202-28.

257. Zhang JH, Zou L cong, Miao J jia, Zhang YX, Hwang GJ, Zhu Y. An Individualized Intervention Approach to Improving University Students' Learning Performance and Interactive Behaviors in a Blended Learning Environment. Interactive Learning Environments. 2020;28(2):231-45.

258. Zhao S, Song J. What Kind of Support Do Teachers Really Need in a Blended Learning Context? Australasian Journal of Educational Technology. 2021;37(4):116-29.

259. Zhou Q, Huang Y, Luo Y, Bai X, Cui Y, Wang Y, et al. Implementation of Blended Learning at the Institutional Level. En: Li M, Han X, Cheng J, editors. Handbook of Educational Reform Through Blended Learning. Singapore: Springer Nature Singapore; 2024. p. 159-98. Available in: https://link.springer.com/10.1007/978-981-99-6269-3_4