



Models and guidelines for digital collaboration and mobility in European higher education

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Tags: Erasmus+ Programme, student mobility, transnational course and curriculum collaboration, internationalization policies, digital mobility, embedded mobility, mobility windows, virtual or online exchange, online exchange mobility, digital mobility, joint programmes, networked programmes, comprehensive internationalization, networks and alliances, European Student Card, Erasmus Without Paper

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Introduction

This eBook is about the design and development of digital collaboration and mobility in higher education, to be published on the BLOOM hub.

The basic premise for these guidelines is “*teaching as a design science*” (Laurillard, 2012): as all education, mobility formats should be the subject of educational design, in which teachers and programme boards take the lead, supported by teaching and learning and ICT support services. Institutional leadership should support and strengthen internationalisation in higher education through digitization and create the necessary conditions for the designing, developing and implementing digital collaboration and mobility.

The core aim of any mobility is to provide students with *an international academic experience*, related to a formal course or curriculum in their home university. The mobility is based on an agreement between institutions and a learning agreement, which guarantees the rights of the student. Such agreements can also be concluded by mobility consortia. -

With the proliferation of digital approaches to teaching and learning, *digital mobility formats* have been developed, involving large or small groups of students and creating virtual campuses in university networks or European Universities Initiative alliances.

Making international collaboration and mobility flexible is likely to be a groundbreaking solution to create mobility for all, especially for university alliances that aim for 50% and more mobility of their students in combination with their green campus policy.

A diversity of mobility approaches is needed to meet the challenge of inclusive mobility, in line with the European Parliament resolution of 23 June 2022.

Transnational programmes with mobility programmes can be organized in any cycle of higher education, i.e. bachelor, master or doctorate. Mobility in transnational programmes can be organized as *embedded mobility* within a course, “*classical*” *student exchange mobility*, *mobility windows in networked curricula* and *embedded mobility in joint programmes*.

In European educational collaboration and mobility, *a truly European dimension* is integrated from the student, institution and EU perspective, enriching and strengthening higher education.

The concept of *comprehensive internationalization* emphasizes the need to develop an institution-wide approach to internationalization. International strategies must be embraced by all institutional leadership and shared with all faculties, teaching staff, support services and students to give an international dimension to the entire university.


Internationalization starts *bottom-up* by teaching and research staff. By integrating these informal networks into internationalization policy at faculty level, collaboration and mobility will be streamlined and organised. This ultimately results in structural cooperation and mobility.

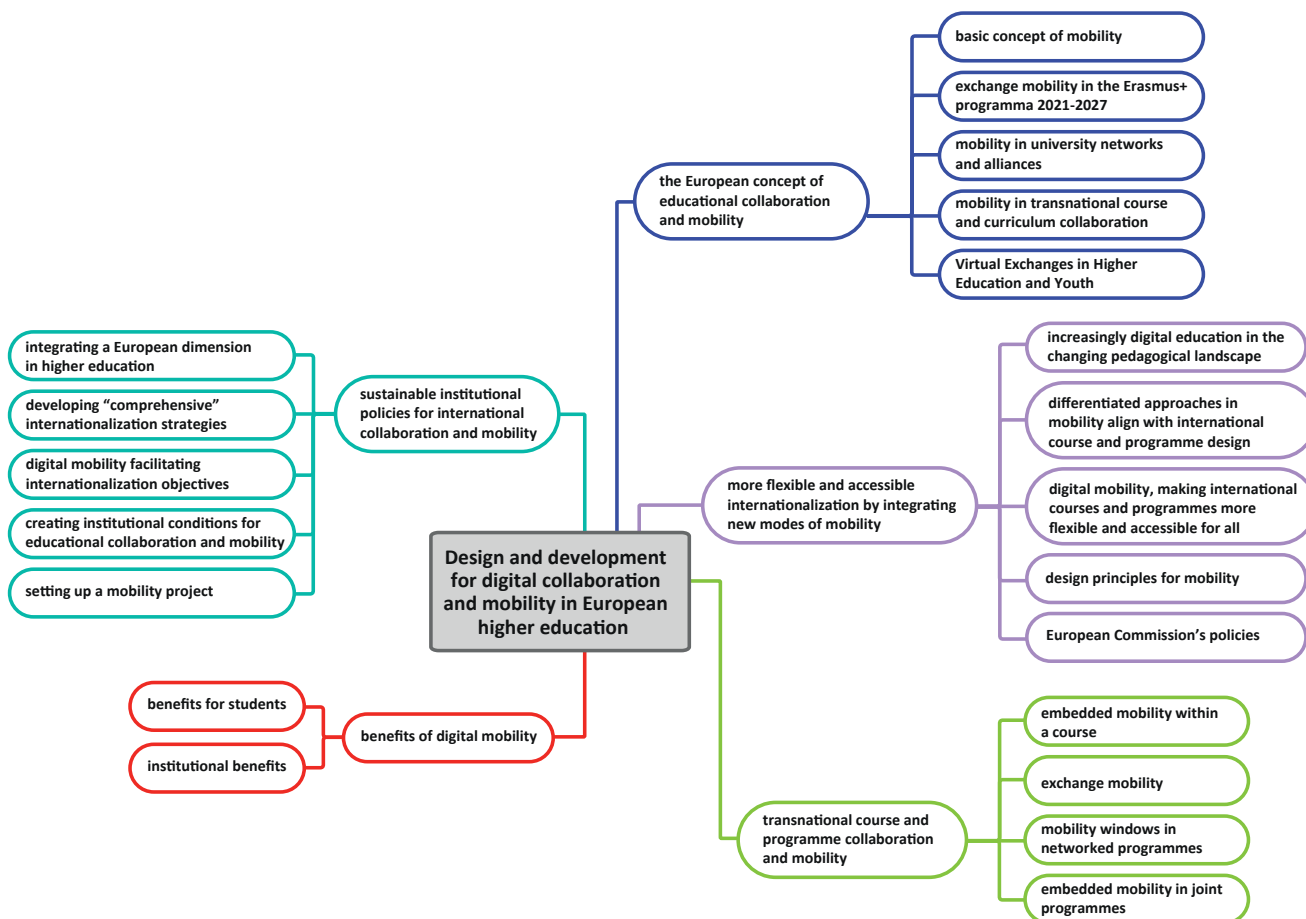
At the institutional level, university leadership is increasingly taking *top-down* collaborative and mobility initiatives within the framework of institutional networks and alliances of the European Universities Initiative (EUI).

Both approaches require *continuous alignment* where bottom-up and top-down processes meet.

To make mobility successful, institutions have to fulfill a range of *institutional conditions*. To facilitate processes, the university should also roll-out European initiatives such as the European Student Card and Erasmus Without Paper.

Models and guidelines for digital collaboration and mobility in European higher education: an overview





This eBook on models and guidelines for digital collaboration and mobility in European higher education is about:

- the European concept of educational collaboration and mobility;
- more flexible and accessible internationalization by integrating new modes of mobility;
- transnational course and programme collaboration and mobility;
- benefits of digital mobility;
- sustainable institutional policies for international collaboration and mobility.

The European concept of educational collaboration and mobility

• Since 1987, the European concept of educational cooperation and mobility has been largely influenced by successive Erasmus programmes. The exchange programme set up at that time has no equal in the world. In this concept, the core aim of any mobility is to provide students with an international academic experience, related to a formal course or curriculum in their home university. The mobility is based on an agreement between institutions and a learning agreement, which guarantees the rights of the student. Such agreements can also be concluded by mobility consortia.

- With the proliferation of digital approaches to teaching and learning, digital mobility formats have been developed, involving large or small groups of students, two or more universities, and creating virtual campuses in university networks or European Universities Initiative alliances.
- With the new opportunities for blended mobility, the Erasmus+ programme aims at mobility participation rates of more than 50% of students at European universities.

Modes of mobility

- Following the emergency practices during the Corona crisis, innovative digital pedagogical approaches are further developed according to current teaching and learning design principles. Key design approaches are put into practice in parallel, but can also be combined in courses and curricula, especially synchronous hybrid teaching and learning, blended teaching and learning, and asynchronous online and distance learning.
- With the increasing number of digital courses and programmes, more digital mobility can be organised. The mode of mobility should then be directly related to the digital teaching and learning formats applied in the course or programme of the receiving university.
- The different mobility formats result in specific opportunities for flexible educational collaboration. Making international collaboration and mobility flexible is likely to be a groundbreaking solution to create mobility for all, especially for university alliances that aim for 50% and more mobility of their students in combination with their green campus policy.
- ICT modes of teaching and learning amplify the potential of international education and mobility by creating flexibility (independence of place and time). The design and sequence of mobility modes (physical, synchronous hybrid, blended and online) will be based on principles of international curriculum and course design.
- European policies support educational collaboration and blended mobility.

Transnational course and programme collaboration and mobility

- The core of mobility is an international academic experience and therefore always related to a course or a curriculum as also defined by the European Commission. Different kinds of course and collaboration can involve mobility schemes which can be physical, digital or blended, in accordance with the mode of delivery of the courses.

Transnational programmes with mobility can be organized in any cycle of higher education, i.e. bachelor, master or doctorate.

- Mobility can be *embedded within a course*: through joint learning activities/components in a partnership with bilateral or network agreements, such as learning communities, virtual classrooms, international virtual seminars or intensive programmes, joint labs, simulations, lecture series, think tanks, field observations/outdoor learning, projects, internships and other learning assignments. These activities are jointly designed by a partnership. Digital interactions between students and with staff are central and can be synchronous and asynchronous;
- In *exchange mobility* (the “classical” Erasmus exchange programme), individual students choose a study abroad at a host university, according to an individual mobility arrangement (Erasmus Learning Agreement) for courses on which the sending and receiving university agree (Institutional Agreement on a Course Catalog). This is the most common mobility scheme in Europe. Physical and blended mobility are directly supported by the Erasmus+ mobility programme. ECTS credits and grade points are mutually recognized.
- In a *networked programme with mobility windows*, students enroll in the curriculum at the home university and opt for a mobility window / minor program at a partner university in the network, which is fully recognized by the home university. A mobility window consists of a coherent package of courses, aimed at knowledge and skills in a specific domain, in which a university specializes and which it offers as a mobility package/minor programme to partner universities in a curriculum network. Mobility windows can be organized in physical or digital modes.
- In a *joint programme with embedded mobility*, students register with one registration for the entire study programme in a consortium of universities and pay a single registration fee.

Joint programmes are jointly designed, delivered, owned by two or more universities, offering a joint degree. Students successively take courses at two or more partner institutions. Programmes can be linear or branched with different options. Due to the nature of a joint programme, mobility is mandatory. Mobility in joint programmes can be physical or blended, although in Erasmus Mundus, physical mobility is obligatory with possibly some virtual components.

Benefits of digital mobility

- *Both physical and digital mobility bring benefits to students*, with an international academic experience at the heart of all mobility. Mobility also leads to international skills and attitudes and contributes to personal development and working in an international

context. In addition, physical mobility provides an immersion in another country with specific benefits for students.

- Physical and digital mobility contribute to the *quality of courses and curricula*. International collaboration and the use of technology-enhanced pedagogies have increased the accessibility, interactivity and personalization of international curricula, even when courses are delivered in virtual spaces. The fact that this is achievable for 50% and even for everyone is an unprecedented asset for international higher education for students facing global challenges.
- *University ecosystems are increasingly hybrid and international*, combining physical and virtual spaces. Next to individual universities, the alliances of the European University Initiative strengthen this development. 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.

Sustainable institutional policies for international collaboration and mobility

- In European educational collaboration and mobility, a truly *European dimension* is integrated.

From a student's perspective, this means that the student's international academic experience is embedded in European values and that European citizenship is promoted, related to these values.

From the institutional perspective, the future of European universities will be transnational, as already evidenced by university networks and EUI alliances. International cooperation and mobility form a basis for strengthening and even integrating research and innovation and the nexus with teaching and learning.

From an EU perspective, transnational cooperation and mobility contribute to the creation of the European Education Area. Digitization of education and mobility will support transnational education for the benefit of all students.

Through the creation of the European Education Area, the EU also promotes mutual learning on policy reforms of national higher education systems. The Digital Education Action Plan and the European Digital Education Hub support this

- The concept of *comprehensive internationalization* emphasizes the need to develop an institution-wide approach to internationalization. International strategies must be embraced by all institutional leadership and shared with all faculties, teaching staff, support services and students to give an international dimension to the entire university.

- Internationalization starts *bottom-up* with international contacts and networking by teaching and research staff. By integrating these networks into internationalization policy at faculty level, collaboration and mobility will be streamlined and organised. This ultimately results in structural cooperation and mobility.

At the institutional level, university leadership is increasingly taking collaborative and mobility initiatives within the framework of institutional networks and alliances of the European Universities Initiative (EUI). This more *top-down approach* can only succeed if support is found among the faculties and lecturers.

Both approaches require *continuous alignment* where bottom-up and top-down processes meet.

- Institutions have to fulfill the *institutional conditions* to make international collaboration and mobility successful. Next to leadership and institutional strategies, this includes the continuing professional development of teaching staff; ICT infrastructure which permits international interaction with staff and students in a (multiple) partnership; educational, ICT, administrative and legal support services; and the integration of internationalization in internal quality assurance system. To facilitate processes, the university should roll-out European initiatives such as the European Student Card and Erasmus Without Paper.

Setting up a mobility project

The European Commission supports universities to carry out projects promoting *different types of mobility*, all related courses and curricula. A mobility project will consist of the following stages:

- Planning
- Preparation
- Implementation
- Follow-up

These projects can involve non-academic partners and be spread over time.

The European concept of collaboration and mobility

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Since 1987, the European concept of mobility is basically built on the successive Erasmus programmes:

- Exchange mobility in the Erasmus + programme;
- Mobility in transnational course and programme collaboration;
- Mobility in university networks and alliances;
- Virtual Exchanges in Higher Education and Youth

Basic concept of mobility

The basic concept of mobility is to provide students with an international academic experience in a partner institution abroad. In the case of physical mobility, this is accompanied by a cultural immersion.

With the proliferation of digital approaches to education, also new formats of digital mobility are emerging, opening up more international learning opportunities for students. The Erasmus+ program creates a framework in which most institutions organize educational cooperation and mobility (European Commission, 2022a).

University networks have always supported collaboration and mobility, taking advantage of the Erasmus programme's capabilities. Most recently, the European Universities Initiative (EUI) alliances organize collaboration and mobility, building integrated European campuses for research, innovation and education using new collaboration and mobility formats, based on ICT.

An international academic experience

The core purpose of any mobility is to provide an international academic experience for students:

- related to a formal course or curriculum;
- on the basis of a bilateral or network/consortium agreement between the institutions involved;
- guaranteeing the rights of the student by means of a learning agreement.

A cultural immersion

In addition to this international academic experience, immersion through physical mobility, as envisaged in the original mission of the Erasmus programme, offers opportunities to stimulate personal development, get acquainted with other cultures, develop intercultural skills, create an open mind, build personal networks and make friends for life, and learn foreign languages.

New opportunities by blended and virtual mobility

With the recent proliferation of digital approaches to teaching and learning, blended and virtual mobility are emerging as new formats for collaboration and mobility in courses and programmes, involving large or small groups of students from two or more universities at the same time. Typically, they include online learning activities or virtual classrooms. The combination of physical and digital mobility is one of the cornerstones of the success of the European Universities Initiative virtual campuses and alliances.

Blended and virtual mobility also create opportunities for students who do not participate in physical mobility for various reasons. Of course, the benefits of long-term immersion abroad cannot be completely replaced by these digital formats only. Blended and virtual mobility are schemes in their own right, enhancing and expanding mobility opportunities for in principle all higher education students.

Since the core of education is based on the interaction between teaching staff and learners, teaching and learning activities during mobility must by definition also be interactive. Digital mobility strengthens this interaction.

With the new opportunities for blended mobility, the Erasmus+ programme of the European Commission aims at mobility participation rates of more than 50% of students at European universities (European Commission, 2022a).

European and global dimension

The Erasmus+ programme has a strong international dimension by supporting cooperation and mobility with third countries. In practice, The Erasmus cooperation and mobility policies are differentiated into 14 regions (European Commission, 2022a).

In doing so, the European Commission supports institutional internationalization policies regarding cooperation with universities in specific regions and promotes the intercultural understanding and global involvement of their students.

Exchange mobility in the Erasmus+ programme 2021–2027

By setting up the Erasmus programme in 1987, the European Commission has created a culture of mobility in European universities that is unique in the world. Since then, the programme has expanded from mere exchange mobility to mobility that supports collaboration between courses and programs and innovation in teaching and learning. Here are the main features of mobility as envisioned by the European Union (European Commission, 2022a).

Accreditation for mobility – the European Charter (ECHE) and mobility consortia

Higher education institutions (HEIs) must have been awarded the *Erasmus Charter for Higher Education (ECHE)* (European Commission, 2021a, 2022b), before applying for a mobility project to their Erasmus+ National Agency. By signing the Erasmus Charter for Higher Education, higher education institutions commit to provide all the necessary support to mobility. The participating institution has to carry out mobility for the purpose of studying and teaching within the framework of prior agreements between institutions.

In addition to individual higher education institutions, groups of institutions may apply for an Erasmus accreditation for a higher education mobility consortium. Funding of a higher education mobility project. Such a *mobility consortium* may apply for European support for international collaboration and mobility.

Exchange mobility in the Erasmus+ programme

In the Erasmus+ programme (Key Action 1), it is required that the *mobility takes physical place* in another country than the country of residence, *possibly combined with a longer period of virtual participation*.

It may take the form of study and traineeships or apprenticeships and may include preparatory activities, such as training in the host language, as well as follow-up activities.

The student is registered in a higher education institution

Eligible students are registered in a higher education institution and enrolled in studies leading to a recognised degree or another recognised tertiary level qualification, up to and including the level of doctorate.

Mobility is part of the study programme

Mobility can be carried out in the form of a study period abroad at a partner higher education institution. The study period abroad must *be part of the student's study programme* to complete a degree at any study field and study cycle (short cycle/bachelor/master/doctoral). A study period abroad *may include a traineeship* period as well. Such a combination creates synergies between the academic and professional experience abroad.

A traineeship can be included

A *traineeship* (work placement, internship) abroad in an enterprise, a research institute, a laboratory, an organisation or any other relevant workplace can be included. Traineeships abroad are supported during studies at any study cycle and for recent graduates. This also includes teaching assistantships for student teachers and research assistantships for students and doctoral candidates in any relevant research facility.

Doctoral students can take part

To better meet the diverse learning and training needs of *doctoral candidates* and to ensure equal opportunities, doctoral candidates and recent graduates ('post-docs') can undertake short-term or long-term physical study or traineeship mobility periods abroad. Adding a virtual component to the physical mobility is encouraged.

The duration can vary and include virtual components and a traineeship

The duration of physical student mobility can range *from 2 to 12 months*. Any student may combine a shorter physical mobility with *a virtual component*. In addition, any student may participate in *blended intensive programmes*. In these cases, physical mobility must last between *5 days and 30 days* and be combined with a compulsory virtual component facilitating collaborative online learning exchange and teamwork. A blended mobility for studies must award a minimum of *3 ECTS credits*.

Virtual mobility is defined as a set of activities supported by ICT, including e-learning, that realise or facilitate international, collaborative experiences in a context of teaching and learning.

This can include a complementary traineeship period, if planned, and may be organised in different ways depending on the context: either one activity after the other or both at the same time. The combination follows the funding rules and minimum duration of study mobility

Learning agreements must be concluded

An *agreement between the sending and receiving organisation and the participating individuals* has to be concluded, defining the aims and content of the mobility period in order to ensure its relevance and quality.

As part of the *European Student Card Initiative*, Learning Agreements are switching from a paper format to a digital format (European Commission, . The digital Learning Agreements are referred to as the *Online Learning Agreements (OLAs)* and they are progressively being rolled out as a standard (European Commission, 2022d).

Credits are awarded

Credits are awarded for a set of learning outcomes of an individual which have been assessed and which can be accumulated towards a qualification or transferred to other learning programmes or qualifications. After the mobility phase, students return to their home institution to complete their studies.

A diploma supplement is provided

A diploma supplement provides more detailed information on the studies completed according to an agreed format, which is internationally recognized, accompanying a higher education diploma. It provides a standardized description of the nature, level, context, content and status of the studies completed by its holder. It is produced by higher education institutions according to standards agreed by the European Commission, the Council of Europe and UNESCO.

In the context of an international joint study programme, it is recommended to deliver a “*joint diploma supplement*” covering the entire programme and endorsed by all the degree awarding universities.

ECTS is applied

The ECTS (European Credit Transfer and Accumulation System) for credit accumulation and transfer facilitates the planning, delivery and evaluation of study programmes and learner mobility through the recognition of qualifications and periods of learning. The system helps to design, describe and deliver study programmes and award higher education qualifications. The use of ECTS, in conjunction with outcomes-based qualifications frameworks, makes study programmes and qualifications more transparent and facilitates the recognition of qualifications (European Commission, 2017).

Mobility in university networks and EUI alliances

In the late 1980s and 1990s, several *university networks* with members of the same profile were established to support Erasmus mobility between them, for example the Coimbra, the Santander, the UNICA and the Utrecht groups. These institutional networks, created by rectors, had a huge impact on all mobility in the early phases of the Erasmus programme. They established international education committees at faculty or curriculum level to make mobility agreements between universities and promote student mobility. These networks are still an important driver for mobility, although faculties and programme boards have extended mobility partnerships to many universities with which they have strong research or educational collaboration.

Today, these networks can organize a *mobility consortium* for their activities (European Commission, 2022a).

The recent *European Universities Initiative* goes beyond the ambitions of these networks. These university alliances have a single steering committee to organize physical, blended and virtual mobility for the majority of their students, often embedded in courses and programs and other educational activities. The ultimate goal of many EUIs is to create a seamless environment or virtual campus where all boundaries between institutions are removed to become a single entity intertwined with different local, regional and global contexts (e.g. Euniwell, 2022). This environment covers education and research as well as services to society and all their interactions.

Mobility in transnational course and curriculum collaboration partnerships

Erasmus+ actions stimulate mobility in transnational course and program collaboration. This is currently the case in intensive programs (Key Action 1) and diverse actions con-

cerning the cooperation among institutions and organizations (Key Action 2) (European Commission, 2022a).

Blended intensive programmes

In blended intensive programmes, collaborating universities organise short blended intensive programmes of learning, teaching and training for students and staff. Students and staff undertake a short-term physical mobility abroad combined with a compulsory virtual component facilitating collaborative online learning exchange and teamwork. Blended intensive programmes aim at reaching all types of students from all backgrounds.

The virtual component brings the learners together online to work collectively and simultaneously on specific assignments that are integrated in the blended intensive programme and count towards the overall learning outcomes.

In addition, blended intensive programmes can be open to student and staff from higher education institutions outside the partnership.

Physical mobility from 5 days to 30 days of programme duration. No eligibility criteria is set for the duration of the virtual component but the combined virtual and physical mobility must award a minimum of 3 ECTS credits for students.

Cooperation among institutions and organizations

In *Cooperation Partnerships*, higher education institutions can make use of mobility of students and staff when this fits to the objectives of the partnership. Cooperation partnerships enable transformation and change (at individual, organisational or sectoral level), leading to improvements and building capacity in the institutions concerned to work transnationally and across sectors.

The Erasmus Mundus action is a *Partnership for Excellence*. It supports high-level integrated transnational study programmes at Master level, delivered by an international consortium of higher education institutions from different countries worldwide and, where relevant, other educational and/or non-educational partners. Student and staff mobility are embedded in the programme.

The *Alliances for Education and Enterprises* bring together enterprises and both higher education and vocational training providers to work together in partnership. They demonstrate their innovative and transnational character in all aspects. This can include mobility of staff and students, when this fits the objectives of the alliance.

The *Capacity Building in Higher Education (CBHE)* action supports international cooperation projects in multilateral partnerships in third countries not associated with the Erasmus programme. Mobility schemes can be included. It focuses on university capacity building, socio-economic recovery, growth and prosperity and responding to the recent decline in

human development, vulnerability and increasing social, economic and environmental inequalities.

Virtual Exchanges in Higher Education and Youth

These online people-to-people action of the European Commission promotes the inter-cultural dialogue and soft skills development between individuals from third countries not associated to the programme, EU Member States or third countries associated to the programme. They take place in small groups and are always moderated by a trained facilitator (European Commission, 2022a).

They make it possible for every young person to access high-quality international and cross-cultural education (both formal and non-formal) without physical mobility. They should be easily integrated into youth (non-formal education) projects or higher education courses.

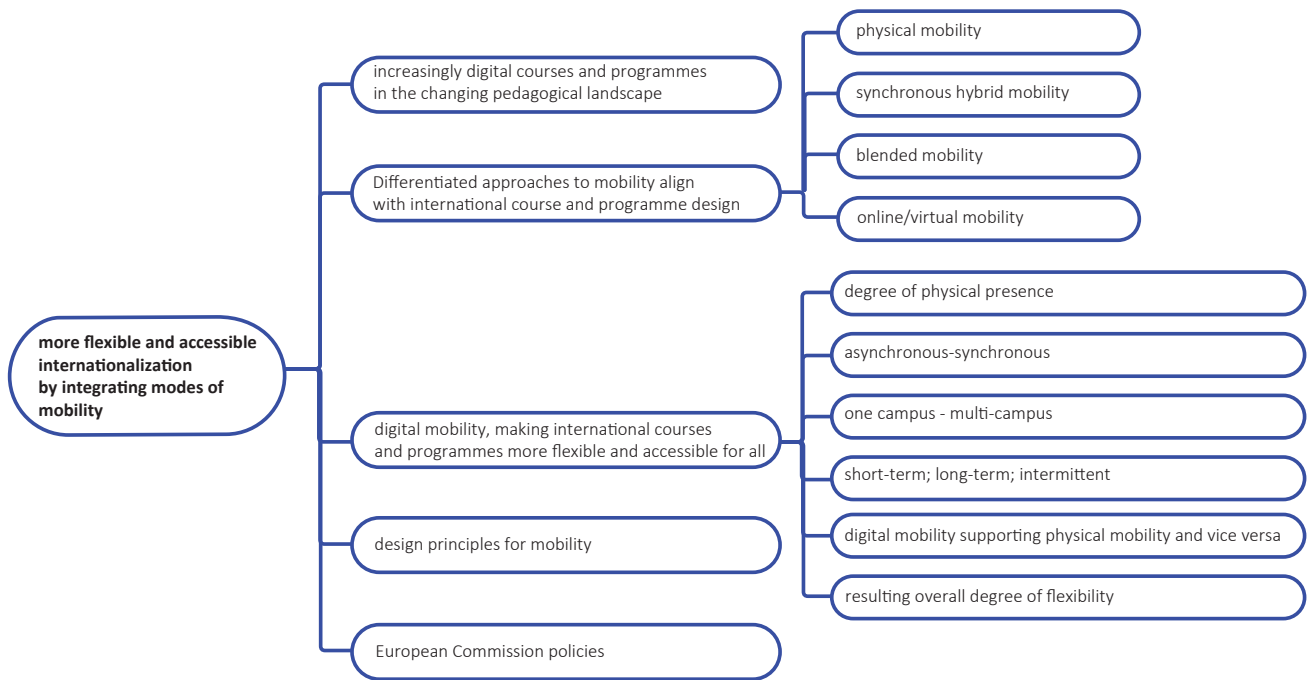
The action aims at:

- encouraging intercultural dialogue with third countries, building on digital, youth-friendly technologies;
- promoting various types of virtual exchanges, allowing more young people to benefit from intercultural and international experience;
- Enhancing critical thinking and media literacy, particularly in the use of internet and social media, such as to counter discrimination, indoctrination, polarization and violent radicalisation;
- fostering the digital and soft skills development of students, young people and youth workers;
- promoting citizenship and the common values of freedom, tolerance and non-discrimination through education;

Virtual Exchanges in Higher Education and Youth projects last 3 years (max. grant 500.000€).

More flexible and accessible internationalization by integrating new modes of mobility

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Digital mobility will make international courses and programmes more flexible and accessible for all:

- increasingly digital courses and programmes in the changing pedagogical landscape;
- differentiated approaches to mobility align with international course and programme design
- digital mobility, making international courses and programmes more flexible and accessible for all;
- design principles for mobility;
- European Commission’s policies.

Digital education in the changing pedagogical landscape

Following the emergency practices during the Corona crisis, innovative digital pedagogical approaches will be further developed in European universities and widely used according to up-to-date teaching and learning design principles (see eBook on Digital Teaching and Learning).

Three main design approaches are put into practice in parallel, but can also be combined in a course or curriculum (Pieters et al., 2021):

- *Synchronous hybrid teaching and learning*: based on settings that have in common that both on-site or ‘here’ students and remote or ‘there’ students are included simultaneously (Raes et al., 2020; Raes, 2020);

- *Blended teaching and learning*: with a deliberate mix of synchronous and asynchronous methods, based on a course design with a deliberate combination of online and offline learning activities (Biggs, 2002; Garrison & Vaughan, 2013; Goeman et al., 2019, 2021; Dijkstra & Goeman, 2020; van Valkenburg et al., 2020);
- *Asynchronous online and distance teaching and learning*: based on a course design with a continuous physical separation between teacher and student (Martin et al., 2020; Mathes, 2018)

With the increasing number of digital courses and training, universities have the opportunity to extend mobility schemes to digital mobility.

Differentiated approaches to mobility align with international course and programme design

Mobility naturally goes hand in hand with teaching and learning in courses or programs at the host university (EADTU, 2020a). Mobility can thus be organized in the following main modes:

- *Physical student mobility*, involving immersion in another country;
- *Synchronous hybrid mobility*, involving international interaction with students both on campus and others online;
- *Asynchronous online/virtual mobility*, organized between universities through online distance learning;
- *Blended mobility*, with a thoughtful combination of physical and online/virtual mobility.

Digital courses create more opportunities for differentiated policies and strategies for international cooperation and mobility, making education more flexible in terms of place, time, pace and content of learning and therefore more scalable and adaptable to the learners.

Digital mobility, making international courses and programmes more flexible and accessible for all

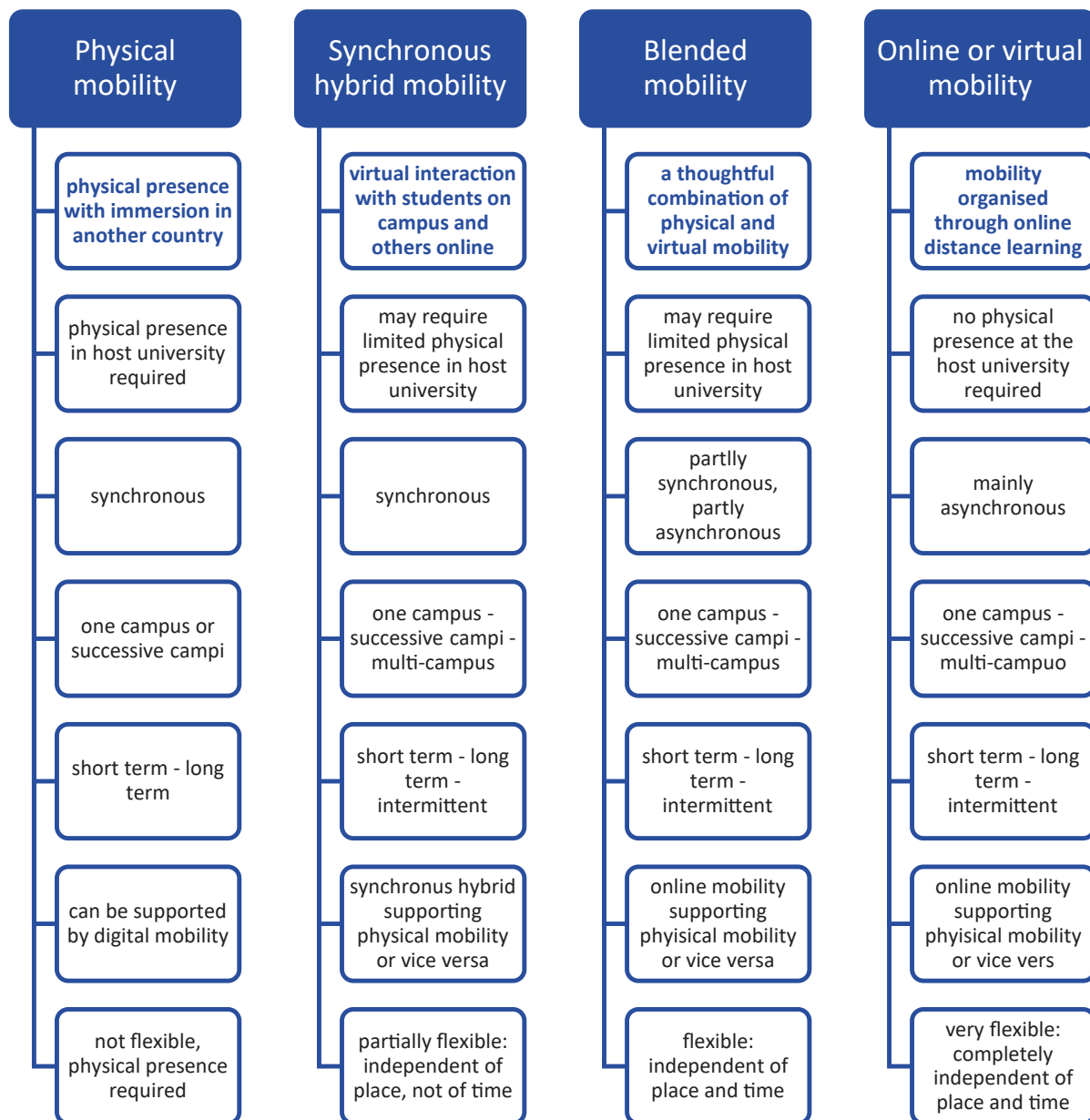


Fig. 1: Four modes of mobility and features allowing flexibility

Different modes of mobility result in specific possibilities for flexible collaboration as shown in fig. 1:

- Digital mobility modes require limited or no physical presence in another country;
- Blended and online/virtual mobility modes can be organized partially or completely asynchronously. Not or less for synchronous hybrid mobility;
- Digital mobility modes can reach more than one campus at a time;
- Digital mobility modes can be easily organized into different time intervals;

- Digital mobility modes can support physical mobility and vice versa;

This leads to different degrees of flexibility: more physical mobility is less flexible, fully online/virtual mobility will be the most flexible. Synchronous hybrid and blended mobility are in between.

In practice, different modes of mobility can be combined according to the design of courses and programs and the mobility agreements between universities.

Blended and online/virtual mobility enables teaching and learning in very large or very small groups and differentiating content in adaptable mobility paths. This would be less the case with physical mobility.

Making international collaboration and mobility flexible is likely to be a groundbreaking solution to create mobility for all, especially for university alliances that aim for 50% mobility of their students in combination with their green campus policy.

Design principles for mobility

In the future, mobility agreements and the design of mobility can be based on following principles (EADTU, 2020a):

- In the new European pedagogical landscape, education is organized in face-to-face, synchronous hybrid, blended or online modes. *Mobility modes are linked to course and program design* and are to be aligned with course objectives and learning outcomes;
- Mobility can be short, medium or long term;
- Mobility can be synchronous and asynchronous;
- ICT teaching and learning methods enhance the potential of education and mobility by creating flexibility (independence of place, time, pace, differentiated content and mobility paths);
- All forms of mobility can be offered separately or in combination;
- None of the forms of mobility is an alternative to replacing the others. Each form contributes to the enrichment of education and offers students the opportunity for international learning;
- The design and sequence of mobility modes (physical, synchronous hybrid, blended and online) will be based on principles of international curriculum and course design;
- The European Universities Initiative and mobility consortia in university networks will expand international education and mobility. Collaborating universities will balance different mobility schemes to provide as many students as possible with an international academic experience.

European Commission's policies

According to the Erasmus+ Guide (European commission, 2022a), higher education institutions 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.

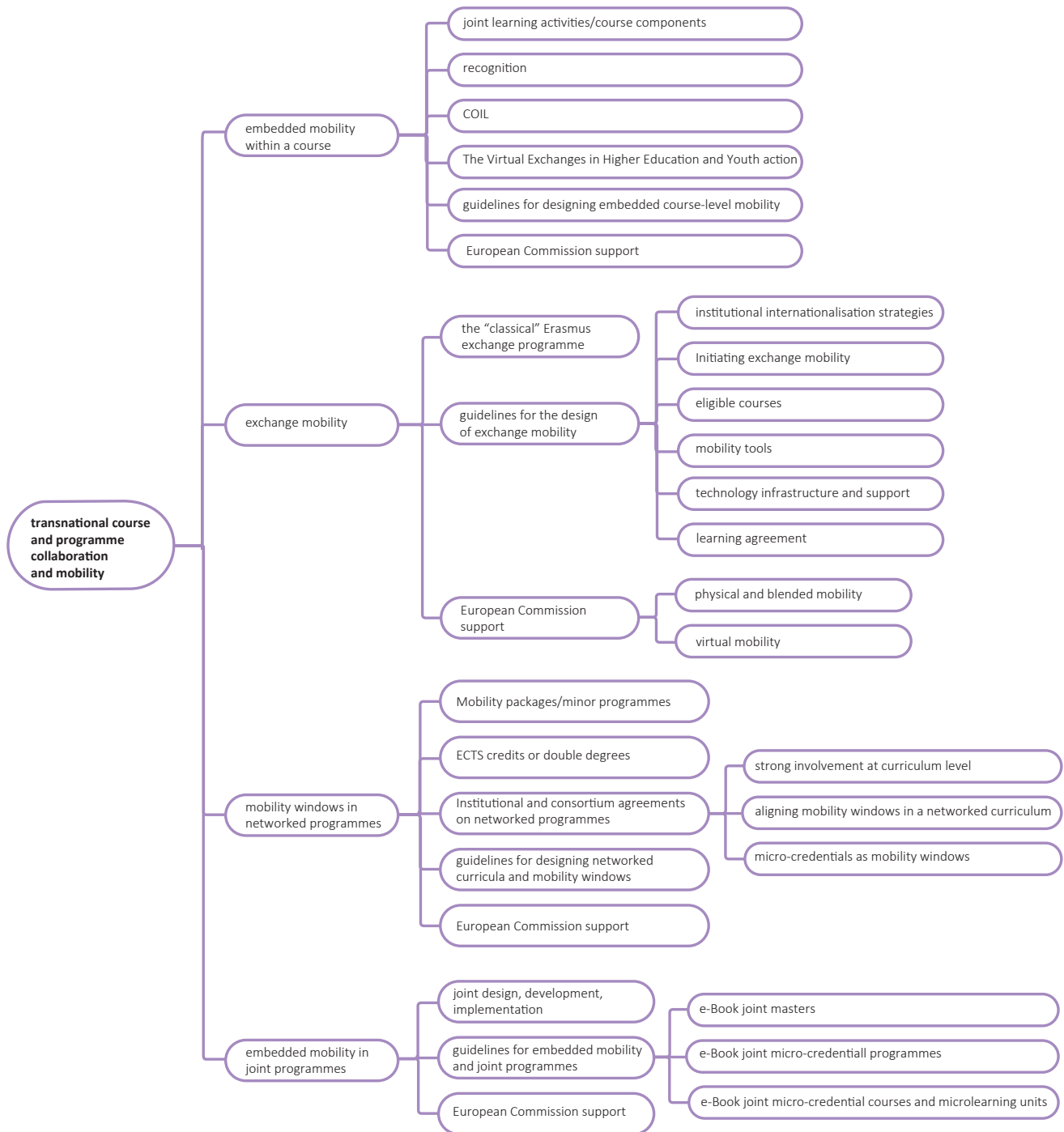
Blended mobility schemes can also contain synchronous hybrid mobility.

Any student can also undertake blended mobility by participating in *a blended intensive programme*.

Erasmus + activities may include participation in courses offered in a digital learning format *at any partner higher education institution or workplace/internship*.

Transnational course and programme collaboration and mobility

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Transnational course and programme collaboration with different types mobility schemes can be organized by:

- Embedded mobility within a course;
- Exchange mobility;
- Networked programs and mobility windows;
- Embedded mobility in joint programmes.

The core of mobility is an international academic experience and therefore always related to a course or a curriculum as also conceived by the European Commission (European Commission, 2022a). Like all forms of education, mobility is subject of educational design, it is not an add-on to a course or programme. Also in the case of mobility, education is a design science (Laurillard, 2012; Laurillard, 2015).

Collaboration and mobility can take place under different schemes: within a course, exchange mobility (classical Erasmus programme), mobility windows, and embedded mobility in a joint programme (de Moor, Henderikx & Keustermans, 2012; Ubachs & Henderikx, 2012; Ubachs & Henderikx, 2018; Henderikx & Ubachs, 2019).

These different kinds of course and collaboration involve mobility schemes which can be physical, digital (eg synchronous hybrid or online/virtual) or blended, in accordance with the mode of delivery of the courses.

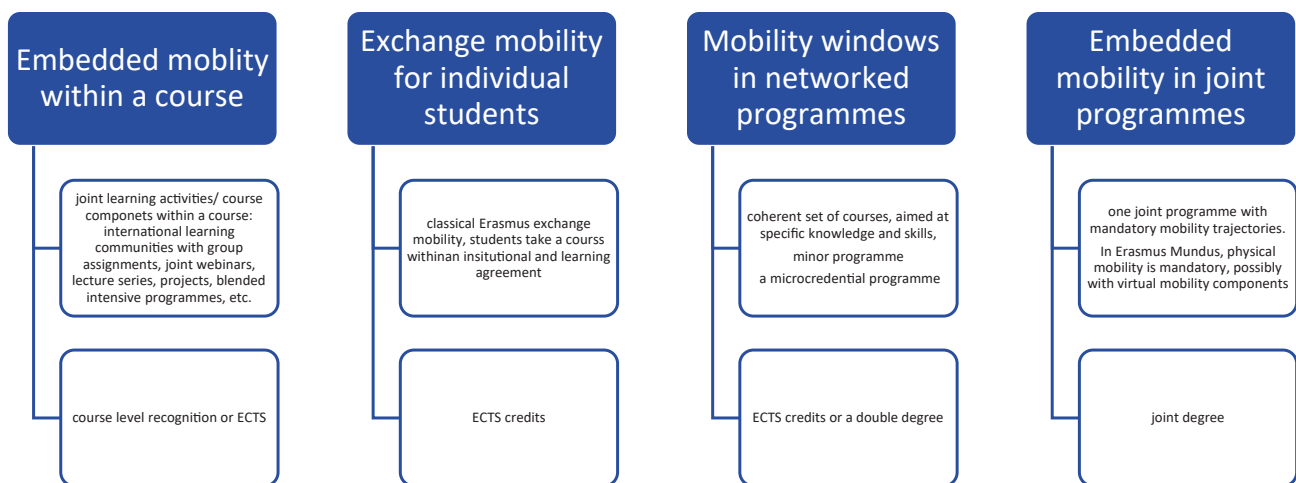


Fig. 2 Different mobility schemes related to course and curriculum collaboration

All the schemes mentioned can be applied in any cycle of higher education, i.e. bachelor, master or doctorate.

Embedded mobility within a course

A course can contain joint international activities or course components within a bilateral collaboration, network, mobility consortium or EUI alliance (Henderikx & Ubachs, 2019).

Joint learning activities/course components

Mobility can be embedded in a course through joint learning activities/components such as collaborative learning communities, international virtual seminars, blended intensive programs, labs, simulations, virtual classrooms, lecture series, think tanks, collaborative field observations/outdoor learning, data collection and observation projects /citizen science activities, internships and other learning assignments.

These learning activities can be organized in different modes of mobility: physical, synchronous hybrid, blended or online/virtual.

Teaching staff from partner universities or a mobility consortium design and develop the course and the course components together. Synchronous and asynchronous interactions between students and with staff are a core feature of this type of mobility.

Course-level mobility is often organized between two or a limited number of universities, in mobility consortia, EUI alliances, university networks and EIT partnerships, sometimes in collaboration with external stakeholders (eg industry, museums, international organisations).

An international course with embedded mobility can also consist entirely of such joint learning activities as can be the case, for example, with a blended intensive programme.

Recognition

Embedded mobility within a course is rewarded with a credit and/or recognized as part of the course. It is stated in the course description and possibly on the diploma supplement. It can be optional or mandatory.

In some cases, this mobility counts towards an honours degree.

COIL

The Collaborative Online International Learning (COIL) programme of the State University of New York connects students and teaching staff in different countries for collaborative projects and discussions as part of their courses, with an emphasis on cross-cultural and international diversity. Since its inception 15 years ago, COIL has been organized as a global network (SUNY, 2022).

Teaching staff from different institutions jointly design and organize the COIL learning experience and credits are awarded as this experience is part of the formal course. In these cases, the COIL scheme can be considered as a specific case of course-level embedded mobility as defined above, since it complies with the EU core concept of mobility.

The Virtual Exchanges in Higher Education and Youth action

The Virtual Exchanges in Higher Education and Youth activities, funded by the European Commission, promote intercultural dialogue and soft skills development between individuals from third countries and EU Member States (European Commission, 2022a), see also section 2.

Many of these international and intercultural educational activities are organized in a non-formal setting without physical mobility in a youth or educational context.

The European Commission suggests that they could be equally integrated into formal higher education courses. As such, they can indeed be a learning activity in the context of course-level digital mobility or part of a blended intensive programme, as among other things also suggested by UNICollaboration (Helm & O'Dowd, 2020).

It should be noted that virtual mobility in education must always be conceived as essentially interactive, like all education, which is also the core of the EU Virtual Exchange Programme. This interactivity implies interactions between staff and students and between students.

Guidelines for designing embedded course-level mobility

Embedded course-level mobility should be designed in alignment with the course objectives and the competencies to be achieved in the course (constructive alignment). The mobility should be part of the course plan.

The joint learning activities should be designed on the basis of principles of course or microlearning design.

When the mobility path as such is part of a programme, the constructive alignment can extend to the objectives of the curriculum.

These principles are explained in the eBook on the design and development of joint micro-credential courses and micro-learning units (Henderikx, P., Ubachs, G. & Antonaci, A., 2022c).

Support of the European Commission

Some activities related to course-level mobility may be supported by *Erasmus+*, *Blended Intensive Programmes* (European Commission, 2022a), where groups of students or staff will undertake a short physical mobility abroad combined with a mandatory virtual component enabling collaborative online learning exchange and teamwork. The virtual component brings the learners together online to work jointly and simultaneously on specific assignments that are integrated in the blended intensive program and count towards the total learning outcomes.

Blended intensive programs for students and staff include a short-term physical mobility abroad combined with a compulsory virtual component that allows for joint online learning exchange and teamwork. The physical mobility of staff and students can be supported by Erasmus+ mobility grants.

In Erasmus+, blended intensive programs must award at least 3 ECTS credits to students.

A blended intensive program can also stand on its own in a curriculum.

Course-level mobility activities can also be supported under the *Erasmus+ Virtual Exchanges in Higher education and Youth action Programmes* (European Commission, 2022a), provided they are recognized in the formal framework of the course (learning outcomes, ECTS).

Exchange mobility for individual students

The “classical” Erasmus exchange programme

In exchange mobility (the “classical” Erasmus exchange programme), individual students choose a study abroad at a host university, according to an individual mobility arrangement (Erasmus Learning Agreement) for courses on which the host and home university agree (Institutional Agreement on a Course Catalogue). This is the most common mobility scheme in Europe and directly supported by the Erasmus+ mobility programme. ECTS credits and grade points are mutually recognized (see also section 2 of this eBook).

During the COVID crisis, digital mobility modes in many cases replaced physical mobility. Universities and EUI alliances now present catalogs of digital courses (synchronous hybrid, blended or online distance) for mobility. However, these offerings are still limited (Hendrikx & Ubachs, 2019).

In the case of online/virtual mobility, this exchange can be based on MOOCs (Sciences Sorbonne-Université, 2022)

Guidelines for the design of exchange mobility

Institutional internationalisation strategies

Universities develop internationalization strategies to ensure that all students have the opportunity to gain international academic experience (see section 6 of this eBook). Mobility is an important part of such strategies, which are shared by faculties and teaching staff. Internationalization services at central and decentralized levels provide support in their implementation.

Initiating exchange mobility

In most cases, exchange mobility is initiated bottom-up by teaching staff on the basis of research contacts or subject-related networking, and consolidated by the relevant programme board, faculty and the institution. It can also be stimulated from above by university leadership collaborating in university networks or EUI alliances.

Eligible courses

Eligible courses for mobility are selected at the programme level and then adopted in institutional agreements between universities. Programme committees ensure that the selected programmes have a comparable profile in terms of content and level.

Mobility tools

In some cases, faculties enter into a global agreement with another faculty and students propose mobility courses for approval by the programme committee. In such a procedure, a mobility tool can be used to facilitate the student's choice of courses and to ensure the recognition of credits in the home programme.

Technology infrastructure and support

In the case of digital mobility, it is necessary that students have access to the LMS of the host institution and that it is equipped with means of communication suitable for teaching and learning interactions.

If necessary, support should be given to the students in using these technologies.

Learning agreement

The courses to be taken at the receiving university are in any case subject to a learning agreement between the student, the sending university and the receiving university (European Commission, 2022a). As part of a fully digital mobility management, universities are now rolling out a mandatory online learning agreement, which includes all mobility and the approval of the sending and the receiving institution (European Commission, 2022c).

European Commission support

Physical and blended mobility

The European Commission supports blended mobility, as it broadens the participation in mobility programs for all interested students. The virtual participation part can contain synchronous hybrid and online distance components (see section 4, modes of mobility), according to the teaching mode in the receiving university.

In the Erasmus+ programme, it is required that the *mobility takes physically place* in another country than the country of residence, *possibly combined with a longer period of virtual participation*. It may take the form of study and traineeships or apprenticeships and may include preparatory activities, such as training in the host language, as well as follow-up activities. The duration of physical student mobility can range *from 2 to 12 months*. Any student may combine a shorter physical mobility with *a virtual component* (European Commission, 2022a)

In addition, any student may participate in *blended intensive programmes* (European Commission, 2022a).

In these cases, physical mobility must last between *5 days and 30 days* and be combined with a compulsory virtual component facilitating collaborative online learning exchange and teamwork. A blended mobility for studies must award a minimum of *3 ECTS credits*. Virtual mobility is defined as a set of activities supported by ICT, including e-learning, that realise or facilitate international, collaborative experiences in a context of teaching and learning.

Virtual mobility

Virtual mobility can also be organized by universities without a physical component. In this case, the Erasmus+ programme will not fund this activity.

Mobility windows in networked programmes

In the case of international curriculum cooperation in a partnership or network, mobility windows can be organized that offer students the opportunity to follow a minor program or a coherent package of electives at a partner university. In addition to ECTS credits, universities can award double degrees for such networked programs under certain conditions (Henderikx & Ubachs, 2019).

Mobility packages/minor programmes

A mobility window consists of a coherent package of courses, aimed at knowledge and skills in a specific domain, in which a university specializes and which it offers as a mobility package/minor programme to partner universities in a networked curriculum. Students enroll in the curriculum at the home university and can opt for a mobility window / minor program at a partner university in the network, which is fully recognized by the home university.

Mobility windows in networked programmes are optional.

By mobility windows, the curricula of all partners universities are expanded and enriched with specializations/minor programmes. Window mobility can be organized face-to-face or digitally (blended, synchronous hybrid-multi-campus, online distance), depending on how the courses are taught in the host university.

ECTS credits or double degrees

The courses in mobility windows are awarded with ECTS credits as in the usual Erasmus+ schemes (exchange mobility). Double degrees can be awarded when the volume of learn-

ing of mobility window/minor programme at the host university is substantial, e.g. 15–30 ECTS for a master's degree, depending on the policies of the universities involved.

Double degrees are certified on separate documents issued by each university. Each certificate must be signed by the competent authority of the institution concerned and officially recognized in the countries where the different issuing institutions are located as defined in the Erasmus+ Programme Guide (European Commission, 2022a).

Institutional and consortium agreements on networked programmes

Mobility windows can be organized through the usual institutional and learning agreements in the framework of the Erasmus+ programme. Mobility windows are often organized multilaterally in the framework of mobility consortia, EUI alliances, EIT KICs, strategic partnerships or collaborative partnerships. In these networked curricula, students follow their main programme at the home university and a mobility window/course package/minor programme at a partner university in the network.

Institutional or consortium agreements on networked curricula should relate to each of the mobility windows at universities within the network and not just to a catalog of individual courses.

Guidelines for designing networked curricula and mobility windows

Strong involvement at curriculum level

Mobility windows require a stronger involvement and engagement between universities than exchange mobility. Networked curricula with mobility windows are usually the result of previous research and innovation collaboration, or of existing educational collaboration or exchange mobility between the partner universities.

On the other hand, organizing mobility windows through networked programmes is much less complex than organizing joint programmes (see below), which are fully co-developed and owned by a consortium of universities with one joint student enrollment, and which can award a joint diploma (see below) signed jointly by these universities.

Aligning mobility windows in a networked curriculum

To make these mobility windows or minor programs complementary to the main curriculum of the partner universities, curriculum boards must coordinate the content and structure of the mobility windows. They must fit into overarching curriculum goals and strategies, requiring ongoing dialogue between curriculum boards. In the EUI alliances and other networks, these strategies are embedded and facilitated in broader cross-institutional strategies.

Micro-credentials as mobility windows

Curriculum boards may consider including micro-credential courses and or programmes as mobility windows in networked programs. They must therefore fit in with the main curriculum of the partner universities. This can lead to the positive result that both regular students and working students, who bring practical experience, participate in a mobility window.

European Commission support

Mobility windows can be funded by the same Erasmus+ mobility program as for student exchange. Mobility windows can also (partly) consist of a blended intensive programme, financed by the Erasmus+ Programme (European Commission, 2022a).

The design and development of mobility windows and networked curricula are often prepared in curriculum boards of EUI alliances or Erasmus+ Partnerships for Collaboration through which funding is provided, while student and staff mobility itself is funded by the Erasmus+ Mobility programme.

Embedded mobility in joint programmes

Joint design, development, implementation

Joint programmes with embedded mobility are jointly designed, delivered, owned and fully recognized by two or more universities, offering a joint degree (Henderikx & Ubachs, 2019).

Students register for the entire programme and follow courses at two or more partner institutions. By the nature of a joint programme, mobility is mandatory.

Students register with a single registration for the entire study programme at the joint universities and pay a single registration fee.

Most typical examples are the Erasmus Mundus joint master programmes.

Joint programmes with embedded mobility can be linearly organized in successive mobilities in two or more universities. Over the course of the program, they can also branch out into different specialization programmes at different universities, all depending on the design by the consortium.

A joint diploma is awarded to a student after successful completion of the programme, signed by the authorities of the participating institutions on one document. It should be officially recognized in the countries where the participating institutions are located (European Commission, 2022a).

In the case of joint curricula and embedded mobility, the institutional and learning agreements cover the entire programme.

Guidelines for the design and development of joint programmes with embedded mobility

Joint programs are organized by a consortium of universities, in most cases based on strong research collaboration in a particular discipline.

For the design and development of joint master programs, joint micro-credential programmes, and joint micro-credential courses and microlearning units, separate eBooks are published:

- eBook on the design and development of joint master's programmes: <https://doi.org/10.5281/zenodo.6477131>.
- eBook on the design and development of joint micro-credential programmes: <https://doi.org/10.5281/zenodo.6483288>
- eBook on the design and development of joint micro-credential courses and microlearning units: <https://doi.org/10.5281/zenodo.6552609>

European Commission support

Joint programs may be organized under the *Erasmus Mundus programme* (European Commission, 2022a). The main goal of Erasmus Mundus is to attract international (non-EU) students. It is mandatory to follow the physical mobility pathways of the programme, but curriculum boards may organize some parts of the programme in a digital mobility mode (e.g. synchronous hybrid multi-campus or blended), e.g. a common lecture series, joint virtual seminars, learning communities, online projects, etc.

The mobility of international students is funded by EU scholarships. European students can fund their participation through the Erasmus+ programme.

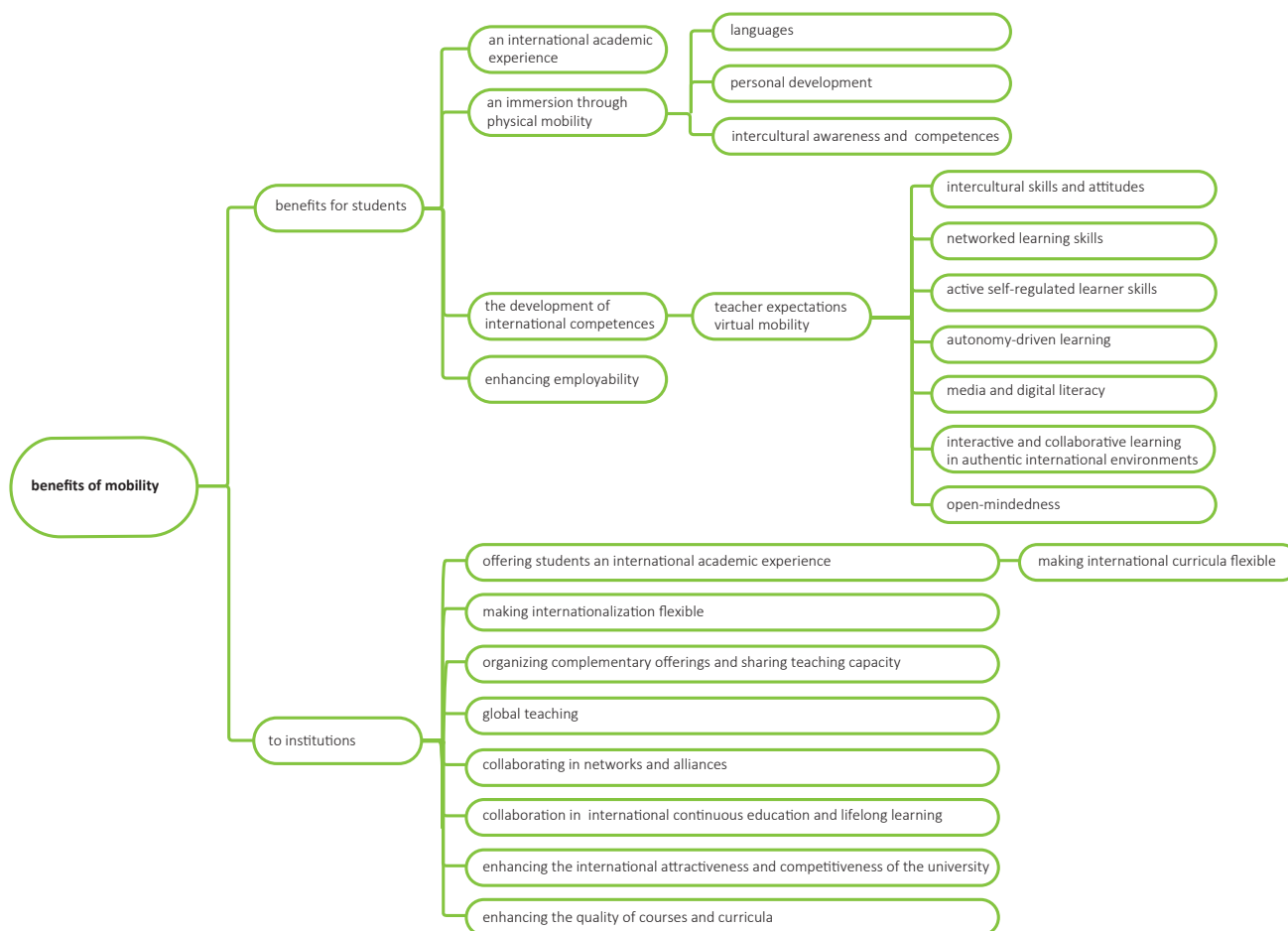
Joint programs can also be organized with support from the *Erasmus+ EUI alliances or Erasmus+ partnerships for cooperation* (European Commission, 2022a). In this case, the design and development of the joint program is funded from these sources. The mobility of staff and students themselves is then financed by the usual Erasmus+ mobility exchange programmes.

Blended intensive programmes, funded by Erasmus+, can be part of joint programmes.

Joint doctoral programs can be prepared in Marie Skłodowska-Curie actions, including scholarships (Marie Skłodowska-Curie Actions, 2022).

Benefits of physical and digital student mobility

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Physical and digital student mobility offers advantages:

- To students
- To institutions

Benefits for students

Both physical and digital mobility bring benefits to students, with an international academic experience at the heart of all mobility. In addition, physical mobility provides an immersion in another country with specific benefits for students. Digital mobility also leads to international skills and attitudes and contributes to personal development and to living and working in an international context.

An international academic experience

The core of all mobility is an international academic experience. Physical and digital mobility programs expose students to different views, knowledge, teaching and research methods, and work practices in the field. They contribute to the development of transversal skills such as communication, language, intercultural problem-solving skills and research skills.

Mobility can also increase students' motivation to participate in and attend future education or training.

Students increase their employability and active participation in society, as well as European citizenship and awareness of EU values.

An immersion through physical mobility

Physical mobility involves staying in another country, resulting in personal development with specific benefits such as self-confidence, greater self-empowerment and self-esteem, improved foreign language skills, networking with friends (for life), enhanced intercultural awareness and skills, and the ability to adapt to new situations.

The development of international competences

Research on teachers' expectations of digital mobility has led to dimensions of skills and competences acquired by students, enabling them to meet the challenges of today's society (Rajagopal, K. et al., 2020):

- *Intercultural skills and attitudes*: gaining cultural knowledge; understanding cultural perspectives; enhancing own cultural identity; enhancing and demonstrating cultural understanding; applying intercultural awareness in culturally challenging circumstances
- *Networked learning skills*: learning to work and cooperate in an international setting with the use of ICT and social platforms; learning about dealing with complex situations; learning about dealing with ambiguity;
- *Active self-regulated learner skills*: being able to plan and organise their own learning process; being able to self-reflect on learning experiences; demonstrating ownership and self-discipline in learning;
- *Media and digital literacy*: are proficient in searching for good quality courses and resources; are digitally literate; are proficient in using digital platforms;
- *Autonomy-driven learning*: demonstrating self-directedness in decision-making on own learning; demonstrating independent learning;
- *Interactive and collaborative learning in authentic international environments*: enhancing teamwork skills; collaborating with peers from different discipline; collaborating with peers within the context of an international learning experience; Interacting with authentic international resources in a foreign language;
- *Open-mindedness*: being open-minded and tolerant; demonstrating self-confidence in interaction with peers and teaching staff; showing willingness to improve proficiency in foreign languages.

Enhancing employability

The Erasmus Impact Study 2019 provided evidence that there is a direct correlation of an international experience to enhanced employability prospects through improved soft

skills, intercultural competencies, confidence, and adaptability (European Commission, 2019). Mobility is also increasing the sense of initiative and entrepreneurship.

The study showed “that Erasmus(+) graduates found their first job quicker after graduation (79% did within three months from graduation, compared to 75% of non-mobile graduates), were happier with their jobs than non-mobiles and worked abroad more often. They ranked their jobs well in terms of valuable aspects such as job security and career prospects. They reported significantly higher levels of social recognition in their jobs than non-mobile graduates and around two thirds (rather) agreed that their job was characterised by a high income. 72% of Erasmus+ graduates considered that their Erasmus+ experience had been beneficial or highly beneficial for them in finding their first job and 82% for their overall career development – the results being even stronger for Southern European and Partner countries. 40% of graduates who undertook an Erasmus+ traineeship reported to have been offered a position in the company where they did their traineeship, suggesting a strong contribution to their labour market integration”.

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.

Offering all students an international academic experience

In these new university ecosystems, digital mobility is a key enabler to deliver mobility at scale. Large-scale mobility cannot be achieved without offering a combination of physical and digital mobility options. As a result, all modes of mobility will grow, reinforcing each other.

By integrating digital mobility, universities can offer more than 50%, if not all students, an international experience tailored to their study career, interests and preferences as currently planned in EUI alliances.

By integrating virtual mobility, mobility will be also more inclusive, opening up new opportunities for students who are limited in physical mobility due to a disability, socio-economic background, work or care responsibilities. Mobility will become affordable for everyone, in line with the Resolution of the European Parliament of 23 June 2022 (European Parliament, 2022).

Making internationalization flexible

Digital mobility through the use of synchronous hybrid, blended or online distance learning formats promotes flexible internationalization of courses and curricula by organizing:

- short digital mobility components embedded in a course or programme, e.g. collaborative webinars, learning communities, projects, blended intensive programs.
- digital exchange mobility for individual students between partner universities
- structured digital mobility windows as course packages / minor programs in networked programmes;
- digital mobility processes embedded in joint programmes.

In all these trajectories, digital mobility can be organized in the short or long term or at intervals.

Due to the independence of place and time (synchronous, asynchronous) and tempo, digital mobility opens up the possibility of multi-campus education and it can guarantee maximum scalability of internationalization by facilitating access for all.

Organizing complementary offerings and sharing teaching capacity

Especially through mobility windows in networked curricula and by mobility pathways in joint degrees, university can broaden their academic offerings to students. At the same time, they share the teaching capacity within the partnership.

Global teaching

By participating in global partnerships, universities can organize mobility programs at all levels, making global teaching and learning more affordable, as physical mobility can be organized as a smaller part of a collaborative curriculum combined with digital mobility.

This also applies to collaborations with the South.

Cooperation with universities in crisis situations can also benefit from such approaches, for example the war in Ukraine, for an entire curriculum or specific parts of it.

Collaborating in networks and alliances

Digital mobility creates new opportunities for educational collaboration within university networks and EUI alliances, supporting common ambitions, for example by organizing joint courses, micro-credentials, bachelor's, master's or doctoral programs, connected with joint research.

Within the framework of these networks and alliances, research institutes and partners from outside the academic world can be more easily involved, for example for international internships.

A combination of physical and digital mobility formats is the cornerstone of an integrated international campus, facilitating course and curriculum collaboration and multi-campus education for all (UNA Europa, 2022).

Collaborating in international continuing education and lifelong learning

Digital mobility creates new potential for synergies in continuing education and lifelong learning. By collaborating and networking, partner universities can share or co-develop MOOCs or micro-credential courses and programs. They can be delivered online for students to take anywhere, supported by the universities in the network, involving at least all the countries they serve.

Enhancing the international attractiveness and competitiveness of the university

Digital mobility creates new opportunities to make European higher education programs more attractive and competitive for international students, as demonstrated for example by Australian universities.

Integrating digital mobility pathways would be an asset for joint curricula, targeting high participation of international students (but Erasmus Mundus joint masters require physical mobility).

Digital mobility pathways could also make doctoral programs more feasible and affordable, especially for students in the South who have teaching and research assignments at their home university.

Enhancing the quality of courses and curricula

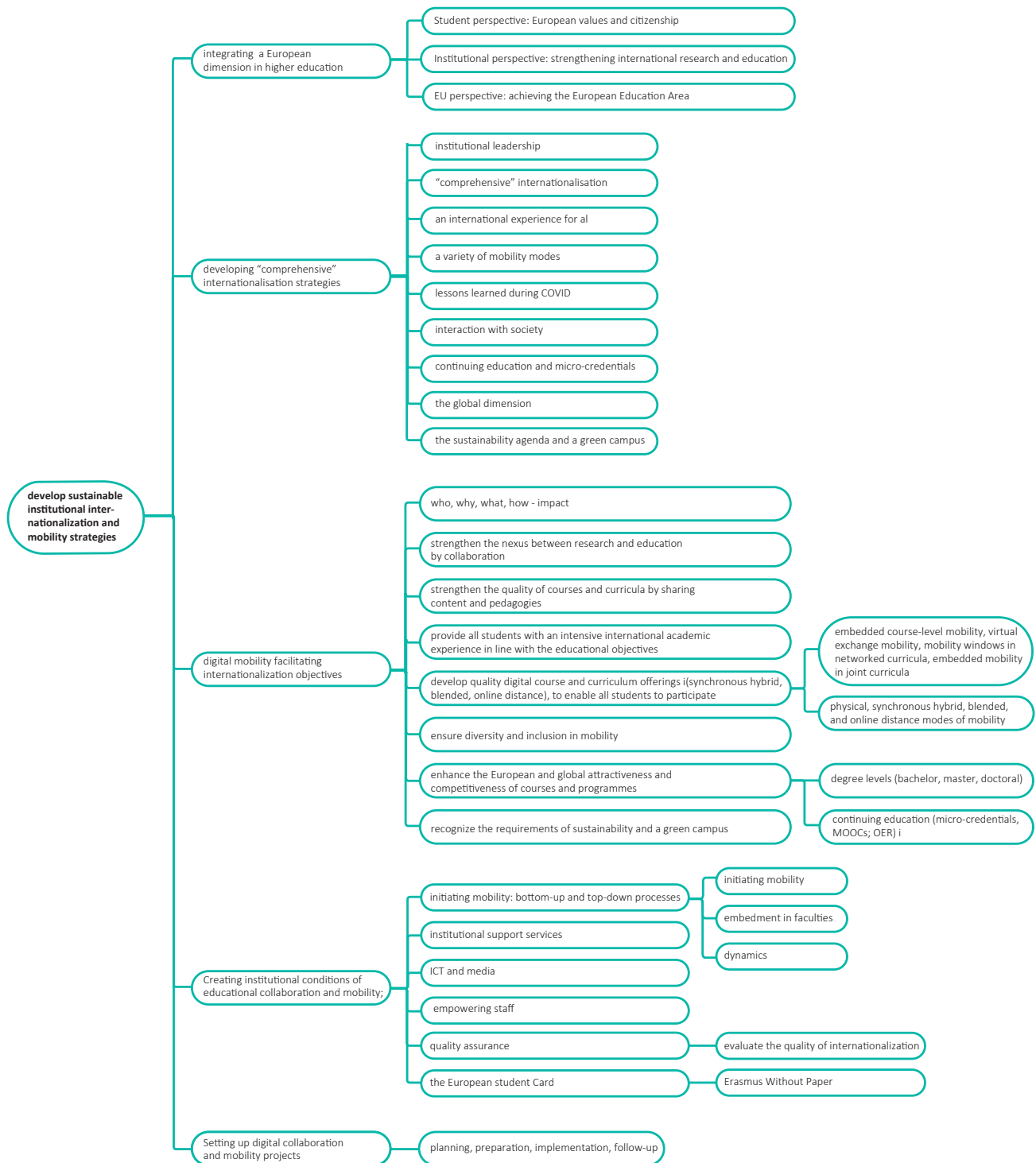
Physical and digital mobility contribute to the quality of courses and curricula by adding an international learning experience, which is of great value to participating students (see above, benefits to students).

Moreover, international collaboration and the use of technology-enhanced pedagogies increase the accessibility, interactivity and personalization of international curricula, even when courses are delivered in virtual spaces.

The combination of physical and digital forms of mobility makes international education accessible to 50% of students and even to everyone, which is an unprecedented asset for international higher education.

Sustainable institutional policies for academic collaboration and mobility

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Institutions should develop sustainable institutional strategies for collaboration and mobility and enhanced digital educational technologies and pedagogies by:

- Integrating a European dimension in higher education
- Developing leadership and “comprehensive” internationalisation strategies
- Developing objectives for the digitalization of educational collaboration and mobility;
- Creating institutional conditions of educational collaboration and mobility;
- Setting up digital collaboration and mobility projects

Integrating a European dimension in higher education

The European dimension of international higher education concerns the embedding of the international learning experience in European values and citizenship; strengthening cooperation in high-quality research and innovation and the nexus with teaching and learning; and making the European Education Area a reality.

Student perspective: European values and citizenship

The core objective of any mobility is the student's international academic experience. In the European context, this means that this experience should be embedded in European values and that European citizenship should be promoted intimately related to these values.

Cornerstones of these values are human dignity, freedom, democracy, equality, rule of law, and human rights (European Commission, 2022d).

Through academic collaboration and mobility, universities foster a positive and reflective attitude of students towards a European identity, in addition to a global, national and regional identity, as expressed by EUA in the University without Walls vision 2030 (EUA, 2021).

Institutional perspective: strengthening international research and education

The future of European universities will be international, as already evidenced by university networks and EUI alliances. International cooperation and mobility form the basis for strengthening research and innovation and the nexus with teaching and learning. Especially, doctoral and research mobility schemes will support research and innovation cooperation (European Commission, 2022a; Marie Skłodowska-Curie Actions, 2022).

EU perspective: achieving the European Education Area

Through the creation of the European Education Area (EEA), the EU is promoting mutual learning on policy reforms of national higher education systems. The Bologna process also continuously supports the coordination, cooperation and quality assurance of these systems. This creates a framework for the digitization of education and mobility that will support universities in developing their international strategies for transnational education for the benefit of all students (European Commission, 2022e)

To promote the EEA, the Digital Education Action Plan (DEAP) and the European Digital Education Hub (EDEH) are launched to strengthen cooperation in education. The first priority of the Action Plan is the development of a high-quality digital education ecosystem and the implementation of plans for the digital transformation of educational institutions (European Commission, 2022a).

Bringing together the community working on digital education, the EDEH hub provides a space to strengthen cooperation on digital education at EU level and contribute to the exchange of good practices, co-creation and experimentation. This includes international digital collaboration and mobility (European Commission, 2022f; European Commission, 2022k).

Developing “comprehensive” internationalisation strategies

Institutional leadership

International strategies must be embraced en masse by all institutional leaders and shared with all faculties, teachers, support services and students to give an international dimension to the entire university.

“Comprehensive” internationalization

The concept of “comprehensive” internationalization emphasizes the need to develop an institution-wide approach to internationalization. Extensive internationalization affects the campus as a whole, and is translated into international frames of reference, partnerships and relationships of the institution. It shapes an institutional ethos and values and influences the whole university (Hudzik, 2011). “comprehensive” internationalization should be seen as an institutional necessity, not just a desirable option.

An international learning experience for all

This implies that an international academic experience should be part of every curriculum for in principle all students, which can only be achieved through different mobility formats.

In European higher education, the free movement of students and staff and increased opportunities to learn in an international context is a key priority of a comprehensive internationalization strategy.

But, according to the 2019 Impact Study, financial concerns and personal reasons remain the most frequent barriers to study abroad: around two thirds of non-mobile students reported some type of financial concern and around one in two reported family reasons and personal relationships as main barriers to mobility. Fears of delay in graduate and lack of information about how the programme works also remain frequent barriers (European Commission, 2019).

A variety of mobility modes

By using a variety of mobility modes in accordance with the objectives of courses and programs and the characteristics of students, internationalization becomes more flexible and

mobility becomes more accessible, inclusive and affordable for all. Digital mobility enables institutions to teach intensively to very large and very small groups, with freedom of place, time, pace and paths of study when needed.

This creates new opportunities for innovation in the field of internationalization.

Lessons learned during COVID

Strategy development will build on lessons learned during COVID and new pedagogies and technologies developed from these early emergency experiences. Mobility must be integrated into the normal processes of (digital) course and curriculum design.

Interaction with society

The University of the Future 2030 (European Commission, 2020d, 2022g, EUA, 2021) interacts more than ever with society in research, innovation and education. This quadruple helix relationship will also increasingly form part of internationalization policy. That is why collaborations are set up with external partners from industry, NGOs, international organizations or local governments for international internships, innovation projects or service learning. This can be combined with a challenge-based learning design with partner universities and external partners in a combination of physical and digital forms of mobility (UNA Europa, 2022).

In addition to bilateral initiatives, these activities can be organized with more partners in university networks or alliances (UNA Europe, 2022).

Continuing education and micro-credentials

Continuing education is an essential part of the university's mission and provisions, often organized in centers for continuing education or extension schools. International collaboration should extend to these areas to ensure an efficient outreach across Europe to meet labour market competence needs. Digital courses and microlearning units are most flexible and accessible for workers who want to upskill or reskill. In university alliances, scalable joint micro-credentials with embedded mobility paths are being developed. In some cases, these micro-credentials are based on MOOCs.

The global dimension

To realize a global dimension in internationalization policies, the combination of physical and digital mobility can make European international curricula attractive and affordable for non-European students, while at the same time benefiting from a European learning experience and staying connected to their own institutions and countries. It contributes to global institutional networking for research, innovation and education.

The sustainability agenda and a green campus

Future mobility programmes should also consider the sustainability agenda and the need for a green campus, while taking into account the environmental footprint.

Digital mobility facilitating internationalization objectives

In a further stage, the university defines concrete internationalization objectives to realize these strategies, making use of the full potential of physical and digital mobility. How can physical and digital mobility contribute to these strategies and to further internationalization objectives? Which are the digital course offerings or learning activities / course components to be considered for digital mobility? Why does digital mobility offer best solutions, next to physical mobility schemes? for which duration? Who will be affected by these objectives: which teaching staff and which support services?

The starting point is that physical and digital mobility must support the integration of an international dimension to the students' learning experience. Therefore, it becomes an integral part of the curriculum, ensuring internationalization for everyone. Mobility is part of course and curricula design and not just an activity in itself.

To put this into practice, the benefits of physical and digital mobility as outlined in section 6 of this eBook, clear internationalization goals and the role of mobility in achieving them must be defined such as:

- Strengthen the nexus between research, innovation and international education through cooperation and mobility with partner universities and in university networks and EUI alliances;
- Strengthen the content and quality of the course and curriculum by sharing content and pedagogies with partner universities by the mobility of staff and students;
- Provide all students with an intensive international academic experience in line with the educational objectives of the course and programme and the profile and preferences of the student, by personalised physical and digital mobility schemes;
- Develop quality digital course and curriculum offerings in networks and alliances (synchronous hybrid, blended, online distance), to enable all students to participate in a variety of physical and digital mobility schemes;
- Ensure diversity and inclusion in offering an international learning experience by adapted schemes of mobility, in line with the Resolution of the European Parliament of 23 June 2022;
- Increase the European and global attractiveness and competitiveness of courses and programmes in degree education (bachelor, master, doctorate) and lifelong learning (micro-credentials, MOOCs, OERs) through flexible and affordable mobility schemes;
- Recognize the requirements of sustainability and a green campus by a combination of physical and digital mobility.

Creating institutional conditions

In the Impact 2019 study, around 95% of the higher education institutions, that have an internationalisation strategy, reported that student mobility is a (very) important part of it. By contrast, only between half and a third of HEIs (depending on the field of study) reported that student mobility is mandatory or an option explicitly integrated in the curriculum for their students. There is place for improvement, although the Erasmus+ programme had already a clear effect on mobility (European Commission, 2019).

Initiating mobility: bottom-up and top-down processes

Internationalization starts with education and research staff through international conferences and publications, followed by more structural networking. By integrating these networks into the internationalization policy at faculty level, collaboration and mobility are streamlined and organised. This ultimately results in structural cooperation and mobility.

At the institutional level, university leadership is increasingly taking collaboration and mobility initiatives within the framework of institutional networks and alliances of the European Universities Initiative (EUI). This more top-down approach can only succeed if support is found among the faculties and teaching staff.

Both approaches require continuous alignment where bottom-up and top-down processes meet. Much depends on institutional culture.

In most universities, students play a role in these processes as they are represented in the programme boards and in central level councils, where internationalization policies are discussed.

Institutional support services

As internationalization through course and curriculum collaboration and mobility increases, universities must deliver excellence in support services. With the teaching staff and programme boards, these services take care of the design of international courses and curriculum and the complete mobility life cycle before departure, during the physical and digital mobility trajectories and after the mobility period.

It concerns specific efforts and synergies between internationalisation, education and learning, ICT, student administration, legal and quality assurance services.

Within the framework of university networks and EUI alliances, cross-institutional support can be provided to course and curriculum teams, as is done by the joint flexible support clusters in the Una Europa Alliance (UNA Europa, 2020; UNA Europa, 2022).

ICT and media

Digital mobility must be supported by appropriate ICT and media infrastructure and software. Most importantly, access should be provided to online courses and learning activities in which interactivity and assessment (formative and summative) play an essential role. In the case of joint courses and curricula, this can be particularly challenging. EUI alliances are currently looking for solutions to connect LMS and course catalogs to facilitate digital course collaboration and mobility.

ICT services should support course and curriculum developers and teachers in selecting and using ICT tools.

Empowering staff

Continuing professional development should be organized for staff at the institutional level in order to make all actors familiar with the design principles of international digital courses and mobility schemes.

Many of these principles can be found in the eBooks on the design of joint masters and joint micro-credential courses and programmes (Henderikx, Ubachs, Antonaci, 2022a, 2022b, 2022c) and in the DigiTeL Pro courses on synchronous hybrid, blended and online distance educational design (EADTU, 2022).

An introduction to joint programs and mobility is also developed by Nuffic (Nuffic, 2020)

Quality assurance

Teaching staff, course teams and programme boards are in a first instance responsible for the quality international courses and mobility, which are monitored by internal quality assurance systems (Ubachs & Henderikx, 2022).

Quality assurance criteria for digital learning as systematized by ENQA (Huertas et al., 2018) and E-xcellence (Ubachs et al., 2016) also apply to digital mobility.

The UniQ project has developed a framework for the quality assurance of course and programme collaborations and mobility in EUI alliances, dealing with special challenges related to joint courses and programmes.

For external quality assurance and accreditation mainly, the European Approach for Quality Assurance of Joint Programmes (EA) was adopted by European Ministers responsible for higher education. It defines standards that are based on the agreed tools of the EHEA, without applying additional national criteria (EQAR, 2018, 2022).

Subsequently, an online toolkit for implementing this European approach was developed by an international consortium of higher education institutions, quality assurance agencies and international associations (Impea, 2020).

Some national agencies have further developed a manual for the European Approach (VLUHR, 2022).

The European Student Card

The European Student Card is aimed at a secure exchange of student information and allow for seamless transition between higher education institutions (European commission, 2022h). It will give students the chance to access online courses and services provided at other higher education institutions. This will facilitate virtual mobility and digital learning, boosting mobility for all.

In the context of this European Student Card Initiative, the Erasmus+ Mobile App and Erasmus without Paper Network are now available for higher education institutions and students and will be further enhanced by adding new services and features for users.

The Erasmus+ Mobile App gives students a single online point of access to all the information and services they need before, during, and after their exchanges abroad. More information can be found at: erasmusapp.eu

The Erasmus without Paper Network allows higher education institutions to connect to a central communication channel to exchange seamlessly student mobility data in a secure and streamlined manner supporting a fully digitalized mobility management, including online learning agreements and digital inter-institutional agreements. See: <https://cc.erasmuswithoutpaper.eu>

In the future, blockchain technology will support these tools in the framework of the European Blockchain Services Infrastructure (EBSI). EBSI Early Adopters test this in a real-life setting by taking part in a multi-university pilot (European Commission, 2022i, 2022j).

Setting up a mobility project

The European Commission supports universities to carry out projects promoting different types of mobility, all related courses and curricula (European Commission, 2022a).

In this context, a mobility project will consist of the following stages:

- Planning (including defining the learning outcomes, activity formats, development of work programme, schedule of activities)

- Preparation (including practical arrangements, selection of participants, set up of agreements with partners and participants, linguistic/intercultural/learning- and task-related preparation of participants before departure);
- Implementation of the mobility activities;
- Follow-up (including the evaluation of the activities, the validation and formal recognition – where applicable of the learning outcomes of participants during the activity, as well as the dissemination and use of the project’s outcomes).

Erasmus+ offers space for developing mobility activities that involve partner organisations with different backgrounds and active in different fields or socio-economic sectors (e.g. traineeships of university students or VET, learners in enterprises, NGOs, public bodies; teachers in schools following professional development courses in companies or training centres; business experts giving lectures or training in higher education institutions, etc.).

Erasmus+ participating organisations have the possibility to organise mobility activities within a broader strategic framework and in the medium term.

Through a single grant application, the coordinator of a mobility project will be able to organise several mobility activities, allowing many individuals to go abroad to different countries. As a consequence, under Erasmus+ the applicant organisations will be able to conceive their project in line with the needs of participants, but also according to their internal plans for internationalisation, capacity building and modernization.

References



Biggs, J. (2002, October). *Aligning the curriculum to promote good learning. Constructive Alignment in Action: Imaginative Curriculum Symposium*. Retrieved from <https://www.qub.ac.uk/directorates/AcademicStudentAffairs/CentreforEducationalDevelopment/FilestoreDONOTDELETE/Fileupload,210764,en.doc>

De Moor, B., Henderikx, P., Keustermans, L. (2013), *International curricula and student mobility*, LERU, Advice paper. <https://www.leru.org/publications/international-curricula-and-student-mobility>

de Wit, H., Hunter, F., Howard., L., Egron-Polak, E., (2015), *Internationalization of higher education*, European Parliament, study, [https://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU\(2015\)540370_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU(2015)540370_EN.pdf)

Dijkstra, W.P. & Goeman, K., (2021), *European Maturity Model for Blended Education. Implementation Guidelines*. <https://embed.eadtu.eu/download/2517/EMBED%20implementation%20guidelines.pdf?inline=1>

EADTU (2020a), *Joint curricula and integrated mobility*. EADTU, Virtual mobility website, <https://virtualmobility.eadtu.eu/al-formats/joint-curricula-and-integrated-mobility-format-info>

EADTU (2022b), *Professional development in digital teaching and learning (DigiTeL Pro)*. Project funded under the Erasmus+ programme, KA2, Cooperation for Innovation. Partnerships for digital education readiness. <https://digitelpro.eadtu.eu>.

ENQA (2015). *Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG)*, ENQA, (2015). https://www.enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf

EQAR (2018), *European Approach to Quality Assurance of Joint Programmes. Approved by EHEA ministers in May 2015*. https://www.eqar.eu/assets/uploads/2018/04/02_European_Approach_QA_of_Joint_Programmes_v1_0.pdf

EQAR (2022), *European Approach for Quality Assurance of Joint Programmes*, <https://www.eqar.eu/kb/joint-programmes/>

EQUiIP. (2018). *User Guide. Educational Quality at Universities for Inclusive International Programmes*. Retrieved from <https://equiip.eu/userguide/>

EUA (2021), *Universities without walls. A vision for 2030*. <https://eua.eu/downloads/publications/universities%20without%20walls%20%20a%20vision%20for%202030.pdf>

EUniQ (2020), *Developing a European approach for comprehensive quality assurance of (European) university networks*". See: <https://www.nvao.net/nl/euniq>

Euniwell (2022), *European Universities for well-being*. <https://www.euniwell.eu/about/mobility-and-education>

Erasmus Without Paper Network (2022), *Erasmus without Paper*, <https://erasmuswithout-paper.eu>

European Commission, Directorate-General for Education and Culture (2017). *ECTS Users' Guide 2015*, Publications Office, <https://data.europa.eu/doi/10.2766/87592>

European Commission, Directorate-General for Education and Culture (2018), *The Digital Education Action Plan*. <https://education.ec.europa.eu/document/digital-education-action-plan>

European Commission (2019), Directorate-General for Education, Youth, Sport and Culture, *Erasmus+ higher education impact study: final report*, Publications Office, <https://data.europa.eu/doi/10.2766/162060>

European Commission, Directorate-General for Research and Innovation (2020), Whittle, M., Rampton, J., *Towards a 2030 vision on the future of universities in Europe*, Publications Office, 2020, <https://data.europa.eu/doi/10.2777/510530>

European Commission (2021a), *Guidelines for the Erasmus Charter for Higher Education 2021-2027*, https://ec.europa.eu/programmes/erasmus-plus/resources/documents/erasmus-charter-higher-education-2021-2027-guidelines_en

European Commission, Directorate-General for Education and Culture (2021b), *European Universities Initiative*. <https://education.ec.europa.eu/education-levels/higher-education/european-universities>

European Commission, Directorate-General Education, Culture and Youth (2022a), *Erasmus+ Programme Guide, Version 2*, <https://erasmus-plus.ec.europa.eu/document/erasmus-programme-guide-2022>

European Commission (2022b), *Erasmus Charter for higher education*, https://ec.europa.eu/programmes/erasmus-plus/resources/documents/applicants/higher-education-charter_en

European Commission, Directorate-General for Education and Culture (2020c), *ENIC-NARIC.net*. <https://www.enic-naric.net>

European Commission (2022d), *Online learning agreement for studies*, <https://erasmus-plus.ec.europa.eu/document/online-learning-agreement-for-studies-2022-docx>

- European Commission (2022e), Directorate-General for Education and Culture (2020a), *European Education Area*. <https://education.ec.europa.eu>
- European Commission (2022f), *European Digital Education Hub*, <https://education.ec.europa.eu/focus-topics/digital-education/action-plan/action-14-european-digital-education-hub>
- European Commission (2022g), *European Strategies for Universities*, <https://education.ec.europa.eu/sites/default/files/2022-01/communication-european-strategy-for-universities-graphic-version.pdf>
- European Commission, (2022h), *European Student Card Initiative*, <https://education.ec.europa.eu/education-levels/higher-education/european-student-card-initiative>
- European Commission (2022i), DG Cnect, *European Blockchain Services Infrastructure. Piloting on EBSI in the education sector: the multi-university pilot* <https://ec.europa.eu/digital-building-blocks/wikis/display/EBSI/Early+Adopters+Programme>
- European Commission (2022j), DG Cnect, EBSI. The Multi University Pilot and Demos 1–2 – 3. <https://www.youtube.com/watch?v=54WrOZ2IEZE>
- European Commission (2022k), *The EU values*. <https://ec.europa.eu/component-library/eu/about/eu-values/>
- European Commission (2022l), *European Digital Education Hub*, <https://education.ec.europa.eu/focus-topics/digital-education/action-plan/action-14-european-digital-education-hub>
- European Parliament (2022), Inclusion measures within Erasmus+ 2014–2020. *European Parliament Resolution of 23 June 2022 on the implementation of inclusion measures within Erasmus+ 2014 2020*. https://www.europarl.europa.eu/doceo/document/TA-9-2022-0265_EN.pdf
- Garrison, D. R., & Kanuka, H. (2004). *Blended learning: uncovering its transformative potential in higher education*. *Internet and Higher Education*, 7(2), 95–105.
- Garrison, D. R., & Vaughan, N. D. (2013). *Institutional change and leadership associated with blended learning innovation: Two case studies*. *The internet and higher education*, 18, 24–28.
- Goeman, K., Poelmans, S., Van Rompaey, V. (2019), *Research report on state of the art in blended education and innovation*. Retrieved from the European Maturity Model for Blended Education website: <https://embed.eadtu.eu/results>

Goeman, K., Dijkstra, W., Poelmans, S., Vemuri, P. & Van Valkenburg, W. (2021), *Development of a Maturity Model for Blended Education: A Delphi Study*. International Journal on E-Learning, 20(3), 229-258. Waynesville, NC USA: Association for the Advancement of Computing in Education (AACE). Retrieved August 9, 2021 from <https://www.learntechlib.org/primary/p/217682/>

Helm, F. & O'Dowd, R. (2020), *Virtual Exchange and its role in Blended Mobility Initiatives*, UNICollaboration Position Paper, <https://www.unicollaboration.org/wp-content/uploads/2020/09/Position-paper-on-Blended-Mobility.pdf>

Henderikx, P. & Ubachs, G., (2012). *NETCU Handbook. Guidelines for organizing networked curricula*. Retrieved from: https://eadtu.eu/documents/Publications/NetCu/NetCu_Handbook_Final.pdf

Henderikx, P. & Ubachs, G., (2019). *Innovative models for collaboration and student mobility*. https://eadtu.eu/documents/Innovative_Models_for_Collaboration_and_Student_Mobility_in_Europe.pdf

Henderikx, P., & Ubachs, G. (2022a). *Models and guidelines for the design and development of joint master's programmes*. Global Academic Press. <https://doi.org/10.5281/zenodo.6477131>.

Henderikx, P., Ubachs, G., & Antonaci, A. (2022b). *Models and guidelines for the design and development of a joint micro-credential programme in higher education*. Global Academic Press. <https://doi.org/10.5281/zenodo.6483288>

Henderikx, P., Ubachs, G. & Antonaci, A. (2022c). *Models and guidelines for the design and development of joint microcredential courses and microlearning units in higher education*. Global Academic Press. <https://doi.org/10.5281/zenodo.6552609>

Huertas, E., Biscan, I., Ejsing, C., Kerber, L., Kozłowska, L., Marcos Ortega, S., Lauri, L., Risse, M., Schörg, K., Seppmann, G., (2018). *Report from the ENQA Working Group on Quality Assurance and E-learning*, Occasional Papers 26, ENQA, 2018 <https://www.enqa.eu/publications/considerations-for-qa-of-e-learning-provision/>

Hutzik, J.K. (2011), *Comprehensive internationalization. From concept to action*, NAFSA, Washington

Impea (2020), *Facilitating the Implementation of the European Approach to quality assurance of joint Programmes*. <https://impea.eu>

Kelo, M. & Loukkola, T. (2020). *Possible scenarios on the path to a European degree*, EUA. <https://eua.eu/resources/expert-voices/186:possible-scenarios-on-the-path-towards-a-european-degree.html>

Laurillard, D. (2012), *Teaching as a design science. Building pedagogical patterns for learning and technology*. New York: Routledge, Taylor and Francis Group.

Laurillard, D. (2015), *Higher Education and the digital era. A thinking exercise. Flanders KVAB thinkers in residence program 2015*. The Royal Flemish Academy of Belgium for Sciences and Arts. Retrieved from: Home | Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten (kvab.be); 33 stpt Higher education Laurillard-Dillenbourg-HR (kvab.be)

Laurillard, D.(2021), *The learning designer (UCL)*. <https://www.ucl.ac.uk/learning-designer>

Marie Skłodowska-Curie Actions (2022), <https://marie-sklodowska-curie-actions.ec.europa.eu>

Martin, F., Sun T., Westine, C.D.(2020), *A systematic review of research on online teaching and learning from 2009 to 2018*. *Computers & Education*, Elseviers, <https://doi.org/10.1016/j.compedu.2020.104009>

Mathes, J., (2018) *Global quality and online open flexible and technology enhanced education. An analysis of strengths, weaknesses, opportunities and threats*, ICDE. See: <https://static1.squarespace.com/static/5b99664675f9eea7a3ecee82/t/5d2476f-be6f76d00010499a3/1562670846037/ICDE+Global+Quality+in+Online+Open+Flexible+and+Technology+Enhanced+Final+REPORT+2018-min.pdf>

Nvao, (2021), *Developing a European Approach for Comprehensive QA of (European) University Networks (EUniQ)*. Project funded by the Erasmus+ Programme of the European Union. <https://www.nvao.net/nl/euniq>

Nuffic (2020), *Joint Programmes from A to Z. A reference guide for practitioners*. <https://www.nuffic.nl/sites/default/files/2020-08/joint-programmes-from-a-to-z-a-reference-guide-for-practitioners.pdf>

Pieters, M., Oudehand, M., Sangra, A. (2021), Professional development in digital teaching and learning. *Digitel Pro, EADTU-EU Summit 2021*. Retrieved from: Ubachs, Pieters, Oudehand, Dijkstra & Sangrà–Digitel Pro (slideshare.net)

Raes, A., Detienne, L., Windey, I. et al. A systematic literature review on synchronous hybrid learning: gaps identified. *Learning Environ Res* 23, 269–290 (2020). <https://doi.org/10.1007/s10984-019->

Raes, A. (2020), Learning and instruction in the hybrid virtual classroom: An investigation of students' engagement and the effect of quizzes. *Computers & Education*, volume 143, January 2020 Retrieved from: <https://www.sciencedirect.com/science/article/abs/pii/S0360131519302350>

Rajagopal, K., Firssova, O., Op de Beeck, I., Van der Stappen, E., Stoyanov, S., Henderikx, P., & Buchem, I. (2020). Learner skills in open virtual mobility. *Research in Learning Technology*, 28. <https://doi.org/10.25304/rlt.v28.2254>

Sciences Sorbonne-Université (2022), *Mobilité virtuelle*, <https://sciences.sorbonne-universite.fr/formation-sciences/international/mobilite-virtuelle>

SUNY (2022), **Collaborative Online International Learning (COIL)**, <https://coil.suny.edu>

Ubachs, G., Henderikx, P (2012), *Netcu Handbook. Guidelines for organising networked curricula*, EADTU. European project, LLL program. https://eadtu.eu/documents/Publications/NetCu/NetCu_Handbook_Final.pdf

Ubachs, G. et al.,(2016). *Quality Assessment for E-learning a Benchmarking Approach (third edition)*. https://e-xcellencelabel.eadtueu/images/E-xcellence_manual_2016_third_edition.pdf

Ubachs, G.& Henderikx, P. (2018), *EADTU Mobility Matrix*, https://eadtu.eu/documents/Publications/VM/2018_-_EADTU_Mobility_Matrix.pdf

Ubachs, G. & Henderikx P. (2022), Quality assurance systems for digital higher education in Europe. In Zawacki-Richter, O. & Jung, I., *Handbook of Open, Distance and Digital Education*, Springer Verlag

UNA Europa (2022), *UNA Europa Learning for Society*, <https://www.una-europa.eu/initiatives/una-europa-learnin-for-society>

Una Europa (2020). *Annual report 2020*. https://una-europa.imgix.net/resources/1Europe_Una-Europa_Annual-report_2020-2021-3.pdf

Van Liempt, N., (2022). Parlement wil inclusie Erasmus verhogen. Neth-er. <https://www.neth-er.eu/onderwijs/parlement-wil-inclusie-erasmus-verhogen>

van Valkenburg, W. F., Dijkstra, W. P., De los Arcos, B., Goeman, K., Van Rompaey, V., & Poelmans, S. (2020). *European Maturity Model for Blended Education*. Retrieved from the European Maturity Model for Blended Education website: <https://embed.eadtueu/download/2470/European%20Maturity%20Model%20for%20Blended%20Education.pdf?inline=1>

VLUHR (2020), *Manual for the European Approach for Quality Assurance of Joint Programmes*, <https://www.kwaliteitszorg.vluhr.be/files/Docs/Manual-for-the-European-Approach-for-Quality-Assurance-of-Joint-Programmes.pdf>