

# Guidelines for embedding virtual elements in joint programmes















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# 1. Introduction

This document is a result of the Erasmus+ JPROV project – Joint Programmes: Embedding Virtual Exchange. The JPROV project aims to create a framework for the development of innovative and efficient international Joint Programmes (JPs) with embedded online elements. The following overview addresses main supporting tools for addressing the challenges involved in the design and implementation of a joint programme with virtual elements. For this, we will define criteria, identify recommendations, and showcase formats, procedures, structures, tools, methods, and contents for embedding virtual elements in joint programmes with the goal of ensuring the sustainability and usability of the findings. The target groups are administrative, technical, and academic staff, who are either involved in the development of a new transnational joint programme or who plan on integrating virtual or blended elements into existing joint programmes.

# 2. Joint Programmes and Virtual Structures

"Joint programmes are understood as an integrated curriculum coordinated and offered jointly by different higher education institutions from European Higher Education Area (EHEA) countries and leading to double/multiple degrees or a joint degree."<sup>1</sup> The EHEA discussions on the topic gravitate not only to student mobility, but also to curriculum development, recognition, and quality assurance. Though the mobility element is an integral part of joint programmes, virtual elements come into play into every aspect of this discussion. Flexibility and wider options for the implantation of Joint programmes are desirable supporting students along the study cycle.

In preparation for the JPROV campfire in Stockholm in June 2022, the "JPROVirtual project survey on the support services and administrative requirements and procedures for the introduction and management of virtual elements in Joint Programmes" was submitted to all partner institutions. Although it was not possible to achieve significant output, the survey (In Appendix) still provided relevant indication of the scope of embedded digital elements possible in international programmes:

- Synchronous online teaching
- Asychronous online teaching
- General preparation of students and staff
- Online language courses
- Online cultural courses
- Online administration through dedicated platforms
- Online joint management of the programme
- Online social events

<sup>&</sup>lt;sup>1</sup> European Approach for Quality Assurance of Joint Programmes (eqar.eu), p.1



- Tools for the creation of a virtual international classroom
- Online extra/curricular activities
- Online internships
- Online joint supervision of project work (including thesis work)
- Online summer/winter schools
- Online management and supervision of teamwork
- Online mentoring/coaching/tutoring

One method for embedding virtual elements in joint programmes is to foresee these as part of the Study life cycle.

#### 2.1. Virtual Structures: formats and contents



Scheme 1: Study-life-cycle

The study life-cycle points towards support structures that could be implemented virtually. From recruitment to employability support, every phase can profit from embedded virtual structures. These structures provide framework conditions for implementation and follow-up processes that fulfil both administrative and legal requirements of Joint Programmes.

Virtual structures are available for each corresponding phase:

1. Marketing and Recruitment

Virtual elements are an integral part of the marketing effort. Virtual fairs offer the opportunity for students to get acquainted with the diverse study offer as well as meeting students and staff from the participant universities virtually. Preparatory work and well-integrated marketing strategies are key to the use of these elements. The definition of target groups, adequate social media outlets, and use of already existing tools in innovative ways are advised. Although well



developed systems for virtual fairs exist, cost-benefit requirements are at play and the use of already existing tools simplify an already time-consuming effort.

- <u>Unite! virtual fair</u>: it happens annually within the scope of Unite! University Network for Innovation, Technology, and Engineering. It is organized in the interactive platform Spatial Chat and showcases the partner study offer, including the joint programmes. The virtual environment offers various interactive opportunities for students and staff, clarifying many of the administrative hurdles.
- #<u>Studentsoftudarmstadt</u>: it is an initiative built around student Ambassadors, which brings the student insight on university life through social media. These kinds of initiative bring the already existing administrative structures at the University closer to their target groups. A step prior to the establishment of interactive social media is the structured support in place for international students, beyond the academic issues. A student counter can also be offered virtually, offering more inclusive options to people with mobility issues.
- 2. Pre-entry activities
  - Online self-assessment: a tool that offers potential students a glimpse into the requirements and possibilities of their future study fields. Testes are available that help the potential student to reflect on their choice of studies and to identify and clear misconceptions not only on the study programme, but also on the administrative support at place, for instance, on the availability of housing and the possibility to combine study and part time work.
  - <u>Hybrid/virtual prep-courses</u>: With PreCIS (Preparatory Course and Support Programme for International Students), the TU Darmstadt supports international first-year Bachelor students in successfully starting their studies. The concept of the preparatory course and support programme is based on a holistic approach and consists of three elements: a two-week preparatory course with a specialist language course at the centre (PreCIS pre-course), a one-semester peer mentoring programme (PreCIS buddy programme) and a semester-long workshop programme (PreCIS workshops). PreCIS pre-course addresses the specific support needs of international students at the beginning of their studies: participants can gain in-depth knowledge of mathematics and German as a scientific language, complete study skills training and get to know various facilities at the TU Darmstadt. The pre-course is offered in three parallel course formats: as a face-to-face course, as an online course and as a blended learning course. The important motivating reason for three different formats is to reach as many international first-year Bachelor students at TU Darmstadt.

#### 3. Admission

- <u>Online application in a joint admission platform</u>: an online platform guides every step of the process and offers structure to guarantee a smooth selection phase.
- Interviews via video conference: each programme is to define which programme works best for its admission interviews. The technical requirements should be sent in advance to the interviewee along with the tailored expectations within the chosen degree programme.
- Digital consulting/advising during the application/enrolment/onboarding process: CRM tool Leads (chatboots, etc.)
- 4. Orientation and support



- Digital learning centre of student representatives at the department of Electrical Engineering and Information Technology (etit): The digital learning center of the Department of Electrical Engineering and Information Technology is based on the Matrix chat system. It allows students to log in with their University ID and have conversations in group rooms or private chats. Audio and videoconferencing are also integrated and provide a further and more inclusive meeting place.
- **Hybrid study support "PALS:** it is a peer mentoring system by Buddies that can also be conceive under a virtual environment, structured around the pairing of students for mutual support.
- 5. Learning and teaching
  - <u>Regulars' E-Learning Table</u>: this is a format that brings together e-learning and interested people to share experiences and inspiration for digital teaching. Students, administrative and academic staff report on their experience or planned projects. Among the concrete possibilities are:
    - Hybrid teaching, where part of the students attends the respective course onsite at the university, while the other part of the students attends online.
    - The use of learning management systems, such as Moodle.
    - Adaptative learning, by which the learning materials adapt to the needs of the learners, including digital learning for exam preparation within Moodle, for instance.
- 6. Study abroad
  - <u>Blended intensive programme (BIP)</u>: one of the innovations of the 2021-2027 generation of Erasmus+ programmes, it consists of intensive programmes developed and offered together with at least 2 other Erasmus partner institutions that combine mandatory physical mobility with mandatory virtual components. There is no compulsory format for the virtual components, varying from a couple of hours of course content to the implementation of one aspect of the course offer virtually. In the end the BIP should generate three ECTS credit points, recognized by all institutions involved.
  - Virtual Exchange Credit Programme (VECP): the partners of the Unite! University Alliance offer virtual modules in selected degree programmes. The list of faculty-lead open modules is made available to students, who can apply and enrol in virtual courses at partner institutions with credit gain. The applications are processed at the home institution and the students nominated to the host institution accordingly. Students must fill out a second application to the host institution after the nomination. After successful application at the host institution, the student is enrolled and must register for the selected courses before the semester starts.
  - <u>Summer / winter schools</u>: INSPIRED, the International Project Week for Interdisciplinary Research-Oriented Digital Learning, is a hybrid or digital model, where a three-week summer school takes place. In the e-Learning course, the participants of diverse academic backgrounds prepare independently to complete the task that awaits them during the summer school. Their main objective in the "Do phase" is to investigate an unconventional and challenging (bio)engineering problem together – in international and interdisciplinary project teams, whether co-located or remote.
  - Joint digital lectures
  - Joint supervision of the Master's thesis
- 7. Employability
  - Hackathons involving industry
  - Joint digital lectures involving industry



• Joint supervision of the Master's thesis involving industry

The Universities members of JPROV possess different yet similar structures to the ones showcased above. Ultimately these structures cater to both highly structured and formalized as well as highly agile, flexible, and adaptable programmes. There are however still challenges to implementing and using virtual components.

### 2.2 Challenges and opportunities

The JPROV campfire at Stockholm in June 2022 focussed especially on the accreditation issue as still a significant hurdle to embedding virtual elements to joint programmes. Participants from different sectors of education note that in many countries or universities online programmes do not allow credits unless the student is physically present for up to 90% of the time. Even if a university or a country would allow students to get credits from online studies, they might have other requirements that make online joint programmes less feasible. For this reason, a more encompassing definition of joint programme with shorter and/or virtual mobilities is an important step.

JPROV has identified <u>four different types of joint programmes</u> that would utilize online studies and resources:

- Traditional joint programmes
- Joint programmes with short mobility (3-6 months)
- Joint programmes with very short mobility (2-6 weeks)
- Joint programmes entirely online and with virtual mobility

The increase of virtual elements into joint programmes is not only dependent on new digital tools and innovative teacher training, but also on lobbying for more credit recognition when incorporating virtual formats. The solutions encompass the clear definition of criteria and structures that surround curriculum development, support services, accreditation, and recognition, as well as blended mobility options.

### 2.3 Tools and Methods

Another result of the above mentioned JPROV Campfire was the development of a <u>Toolbox</u>, which details the tools and methods available in connection to the Joint Programme type.

### 2.4 Administrative Requirements

As the above-mentioned examples of virtual elements show, a vast range of virtual structures and initiatives already exist involving students, academic and non-academic staff surrounding joint



programmes. They are fundamentally characterised by their **flexibility and adaptability**. The administrative requirements should therefore be as flexible and adaptable. To place the existing structures under the student life cycle, monitoring and disseminating their existence is a first step into embedding digital elements to joint programmes.

The administrative support requires **knowledge of the existing structures** and **coordination of the definition of requirements and expectations** to be fulfilled by Joint Programmes within the multiple partner reality. As such, the co-creation of the framework is a relevant aspect towards successful development. In that, workshops and discussion groups provide for long term longevity of the programme, beyond individual initiative and are a powerful tool in identifying the virtual tools available and their potential for the programme.

Accessibility and the definition of an area/person responsible for transversal communication and follow-up are key steps into implementing successful programmes with virtual elements. This requires

setting up the processes related to each element as well as their articulation to the institutional goals. The processes should cover, but not be exhausted to the study life cycle, and convey adjustment needs due to technical issues. Rules and principles should be stablished up front to easy up communication.

# 3. Practical recommendations

In order to further promote the integration and implementation of virtual elements into joint programmes the following practical recommendations could serve as a guideline. The target groups are administrative, technical, and academic staff, who are either involved in the development of a new transnational joint programme or who plan on integrating virtual or blended elements into existing joint programmes. They are structured reflecting to the four different types of virtual formats and the development cycle of such initiatives.



#### Recommendations for embedding virtual elements

Phase	Task	Virtual classroom (Course/module level)	Virtual exchange/mobility	Entire virtual joint programmes
Before	Cost benefit analysis	Set a minimum number of virtual participations for allowing the format to take place. A minimum virtual attendance of 30% is recommended; also consider varying numbers according to different formats (lectures, seminars etc.)	Set a minimum number of places for virtual exchange; see recommendations on the left	Define the desired minimum number of student cohort in conjunction with your partner universities; the target group should be capable for all partners
	Admin/ regulations	n.a.	A Framework Agreement for digital courses and virtual exchange activities should be developed	A cooperation agreement for the joint programme should be developed covering all aspects of classical JPs (see REDEEM guidelines etc.); in addition, reference should be made to digital tools and mobility
	Communication	Communication should be written in English and the local language. This is helpful in a multilingual context, where more than two languages are at play and international students are participants	Communication should be written in English and the local language. This is helpful in a multilingual context, where more than two languages are at play and international students are participants	Communication in English, accompanied by the language of instruction should this be different
	Curriculum development	To be integrated in the regular accreditation process, if applicable	n.a.	Joint curriculum development or recognition/definition of equivalencies; defining a study plan; consider also quality assurance requirements referring to national regulations; European Approach of QA desirable



Credits	Define the number of credit points that will be given for students participating virtually beforehand. It could be that the number of hours differ from the course work in presence and this needs to be planned and communicated to the students in advance	Define the credit transfer and recognition in accordance with the Lisbon Convention with the sending institution beforehand (ref. agreement)	n.a. (part of the study plan/joint curriculum)
GDPR	Be attentive to the GDPR rules that need to be followed for sharing information and course content, as well as video materials produced during the class. Authorisations need to be taken from all participants, including lecturers	Be attentive to the GDPR rules that need to be followed for sharing information and course content, as well as video materials produced during the class. Authorisations need to be taken from all participants, including lecturers; paragraph in the cooperation agreement recommended	Be attentive to the GDPR rules that need to be followed for sharing information and course content; paragraph in the cooperation agreement required
Tools	Define and communicate the tools that will be used for the course work; for instance Moodle, MS Teams, Institutional Sharepoint, Unite! Metacampus etc.	Define and communicate the tools that will be used for the course work; for instance Moodle, MS Teams, Institutional Sharepoint, Unite! Metacampus etc.; enable accessibility for the exchange students	Define and communicate the tools that will be used for the course work; for instance Moodle MS Teams, Institutional Sharepoint, Unite! Metacampus etc.; accessibility for the JP students should be part of the enrolment process
Connection	Check the band bright needed and clearly communicate it to students and lectures; send the specifications and needs of the connection details in advance	Check the band bright needed and clearly communicate it to students and lectures; send the specifications and needs of the connection details in advance	Check the band bright needed and clearly communicate it to students and lectures; send the specifications and needs of the connectio details in advance



Timing	Synchronous, a-synchronous format	Check synchronous, a-synchronous format; consider time differences; consider splitting formats addressing western/eastern hemisphere as an option	Check synchronous, a-synchronous format; consider time differences; consider splitting formats addressing western/eastern hemisphere as an option
Costs/ funding	Calculate, if investment costs (hybrid or software tools etc.) are necessary	Financial regulations should be part of the cooperation agreement, if applicable; it's recommended that registration or other admin costs and tuitions should be waived, as they are usually paid with the home university	A realistic financial model is required; check funding resources from the partners; try to use third party funding options; financial regulations are part of the cooperation agreement (incl. tuition fees, admin contributions, waivers and coordination or programme costs)
Student admin (enrolment etc.)	Regular procedures to be applied	Define an application and nomination process to be displayed in the cooperation agreement	Define an application process to be displayed in the cooperation agreement
Quality assurance			Accreditation issue as still a significant hurdle to embedding virtual elements to joint programmes. Many countries or universities online programmes do not allow credits unless the student is physically present for up to 90% of the time. Even if a university or a country would allow students to get credits from online studies, they might have other requirements that make online joint programmes less feasible



During	Repository	communicate to students the deadline for accessing the online repository	When applicable, see recommendations on the left	When applicable, see recommendations on the left
	Recording	follow-up on the recording of course content, when indicated	When applicable, see recommendations on the left	When applicable, see recommendations on the left
After	Evaluation	Make sure to apply a short survey to gather feedback on the course content and support structure	Make sure to apply a short survey to gather feedback on the course content and support structure	Regular assessment/evaluation procedures apply; to be addressed in the cooperation agreement
	Repository	Maintain the repository available for the period agreed/communicated	Maintain the repository available for the period agreed/communicated	Maintain the repository available for the period agreed/communicated
	Credit transfer	Transcript of records	Transcript of records or automatic credit transfer; ideally a joint platform (such as the Unite! metacampus) can be used for this	Integrated curriculum which is specified in the cooperation agreement (study course plan)



#### Recommendations for Virtual Preparatory courses

Before	• <b>Definition of target group</b> : analyse the requirements according to target group. Our experience shows that hybrid and blended learning formats help international Bachelor students particularly who are still abroad. Define the offer
	according to their needs
	• Cost benefit analysis: set a minimum number of virtual participations for allowing the format to take place. If the virtual
	attendance is below 30% of the overall class attendance, we advise not to proceed with it and focus on the presence component
	• <b>Enrolment</b> : to check whether participants in virtual and blended learning meet the requirements for enrolment at the university
	<ul> <li>Paperwork: provide paperwork that needs to be filled out by students in both native language and English</li> </ul>
	• Communication: emails sent by admin staff should follow the same principle and be written in both native language and
	English. This is helpful in a multilingual context, where more than two languages are at play and international students are participants
	Credit Points: pre-courses in different formats have the same curriculum objectives, and the number of ECTS points
	earned is the same. Define the number of credit points that will be given for students participating virtually beforehand.
	Communicate to the students in advance
	• <b>Content and supervision</b> : The preparation of the pre-course content and supervision of the courses by teachers and tutors is adapted to the course format
	Activities: plan additional activities to let the participants of the three course formats network among themselves
	• Support: The virtual and blended learning courses have an additional support team of student assistants, so define the
	team and the extra support needed in advance. This means that additional financial resources for staff and material resources (such as technical equipment) must be considered
	Repository: Create a repository that hosts the course work and the programme for the virtual class, and make sure the
	students have access to it before the course commencement
	• <b>GDPR</b> : be attentive to the GDPR rules that need to be followed for sharing information and course content, as well as
	video materials produced during the class. Authorisations need to be taken from all participants, including lecturers

• Connection needs: check the band bright needed and clearly communicate it to students and lectures



	<ul> <li>Connection details: send the specifications and needs in advance</li> <li>Ground rules: set the ground rules for course participation together with partner and communicate them to all involved</li> <li>Tools: define and communicate the tools that will be used for the course work. For instance, Moodle, MS Teams, Institutional Sharepoint, Unite! Virtual Campus, etc.</li> </ul>
During	<ul> <li>Repository: communicate to students the deadline for accessing the online repository</li> <li>Recording: follow-up on the recording of course content, when indicated</li> </ul>
After	<ul> <li>Repository: maintain the repository available for the period agreed/communicated</li> <li>Assessment: make sure to apply a short survey to gather feedback on the course content and support structure, before the students receive their grades</li> </ul>



# Questionnaire on the use of

# Appendix: Results of embedded virtual tools

Institution 15 Antworten



Participating Institutions



I am / have been involved in the support / development / implementation of a Joint Programme with embedded virtual tools as:

15 Antworten



**Respondents Profile** 

What virtual activities are envisaged by the joint programme(s)? 15 Antworten



Overview of envisaged activities



If there is a plan at your institution to develop more international programmes with embedded digital elements, which elements will be included?



Overview of envisaged embedded virtual elements



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>15</sup> Antworten



E-learning-Centre



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>15</sup> Antworten



Centre of Educational Development

Scale: from 1 - not at all to 5 - very high

To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>15</sup> Antworten



Office for Student Affairs / Service Centre at departmental, decentralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? 14 Antworten



Student Service Centre at centralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? 11 Antworten



Course management unit at departmental, decentralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? 12 Antworten



Course management unit at centralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>12</sup> Antworten



Examination management

at departmental/decentralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>12</sup> Antworten



Examination management at centralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>12</sup> Antworten



University IT-Service and Computing Centre at centralised level



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? 11 Antworten



Metacampus or equivalent (in the case of transnational cooperation or European Alliances)



To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? 11 Antworten



Local Virtual Metacampus

Scale: from 1 - not at all to 5 - very high

To what extent are the following institutions / organisational units (or equivalent) involved in the implementation of digital management / teaching / ...ort services in joint programmes in your opinion? <sup>12</sup> Antworten



International Office



How do you assess the digital literacy of the following categories at your university to facilitate, develop, and implement virtual elements in the programmes? 12 Antworten



Lectures

Scale: from 1 – very low to 5 - very high



How do you assess the digital literacy of the following categories at your university to facilitate, develop, and implement virtual elements in the programmes? 12 Antworten



Administrative staff

Scale: from 1 – very low to 5 - very high



How do you assess the digital literacy of the following categories at your university to facilitate, develop, and implement virtual elements in the programmes? 12 Antworten



Technical staff

Scale: from 1 – very low to 5 - very high

Are there any networks or collaborative ventures with other universities that pursue the goal of digitization in for Joint Programmes? 13 Antworten







Technical issues/equipment/facilities





Teachers' digital literacy





Students' digital literacy





Administrative staff digital literacy





Resistance at management level





Legal constraints





Recognition of virtual exchanges





Time differences (different time zones to be covered by synchronous teaching activities)





Recognition of teaching workload











Assessment of online examinations

Scale: from 1 – low challenge to 5 – high challenge

Are you aware of tools, support services, or existing pool of experts for the digitization of Joint Programmes?

15 Antworten





Are you aware of funding programmes for the digitization of joint / dual / double programmes: 15 Antworten



What would have to be done at national / regional / federal level to promote the digitization of administrative / support services at your university? 15 Antworten

