

Deliverable 5.1 – Virtual Mobility & Exchange Web Index

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Abstract	<p>This document is the deliverable (D5.1) attached to the EDUC work package 5 (WP5) Task 5.1. Within EDUC WP5, purpose of Task 5.1 is twofold: (1) identifying existing virtual mobility and virtual exchanges and (2) indexing online and offline teaching and learning scenarios.</p> <p>This deliverable encompasses the two outputs of this Task: (1) The design and initial release of an EDUC Virtual Mobility and Exchange Index; (2) The identification of existing or contemplated Virtual Mobility and Exchange Scenarios for EDUC.</p>
Keywords	Mobility, Virtual mobility, Virtual exchange, Index

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1. Purpose of this document

This document is the deliverable (D5.1) attached to the EDUC work package 5 (WP5) Task 5.1.

Within EDUC WP5, purpose of Task 5.1 is twofold: **(1) identifying existing virtual mobility and virtual exchanges and (2) indexing online and offline teaching and learning scenarios.**

This deliverable encompasses the two outputs of this Task:

- The design and initial release of an EDUC **Virtual Mobility and Exchange Index**,
- The identification of existing or contemplated **Virtual Mobility and Exchange Scenarios** for EDUC.

2. Summary

One of the central goals of the EDUC European university alliance is the creation of blended and online educational offers that are shared between the member universities. This is key to offer our students a unique European experience through not only physical mobility but also virtual mobility and exchanges opportunities in the alliance programs and courses. It is also key to foster cooperation in education within the alliance, which notably comes down to encouraging pedagogical cooperation between the teachers themselves. It is the goal of EDUC WP5 to offer instruments that will enable the development of programs and courses offering virtual mobility and exchanges opportunities to students and cooperation opportunities to teachers.

With this in mind, and even before we define any such instruments, there is the need to (1) define what are these virtual mobilities and exchange scenarios we will support and promote in EDUC; (2) define how we may structure a catalog of the programs, courses and resources offering virtual mobility and exchange opportunities, destined to the various stakeholders (students, teachers, staff, EDUC project team).

Our universities already offer online / blended / hybrid courses, programs and resources that are assets to offer virtual mobilities and exchange opportunities in EDUC. The focus of this Task is on indexing these existing assets in order to (1) 'learn' a **virtual mobilities and exchange scenarios taxonomy for EDUC**, also fed by a review of the literature and other European projects; (2) create an **initial index of programs, courses and resources offering virtual mobilities and exchange opportunities**, this index being a 'living object' to be continuously enriched, notably with the new assets to be developed in the course of the EDUC activities.

In executing this Task, we decided:

- To index only programs, courses and resources already involving online modalities adapted to virtual mobilities and exchange scenarios,
- To 'learn' the indexing format (data fields, taxonomy) through sampling on an initially reduced set of programs, courses and resources ('phase 1 indexing') before applying the indexing format for a more comprehensive 'phase 2 indexing'),
- To focus on generating an 'Internal index', in the form of Excel files, that is appropriate for the short-term internal use by the EDUC project team, and that will be used to feed the External Web Index, to be produced in the context of WP4, destined to the students and teachers,
- To define an Index format that is generic enough to be used by the other WPs in EDUC that need to index programs and courses.

The rationale for these decisions is explained in the rest of the document.

3. The EDUC and WP5 context

One of the central goals of the EDUC European university alliance is the creation of blended and online educational offers that are shared between the member universities. This virtual campus includes the creation (or repurposing) of (1) digital learning resources for self-directed learning, of (2) blended and online educational scenarios at course level and prospectively of (3) new forms of blended and virtual international mobility at the level of study degree programmes.

This benefits students as they are offered more options for cultural and linguistic exchange through international online collaboration and, all in all, a wider range of mobility formats (physical, blended, virtual) for broadening their disciplinary horizon. Chairs and departments benefit from possible synergies with other partner institutes in the alliance that can arise from making available well-designed online course offers within the EDUC alliance or by fostering teaching cooperation (blended and online) between academic staff from member universities.

Within EDUC, it is the purpose of WP5 to create the conditions for the development of a new offer of courses, programs and resources offering virtual mobility and exchange scenarios. This is meant to be achieved through following Tasks:

- Task 5.1: Identifying existing virtual mobility and virtual exchanges; indexing online and offline teaching and learning scenarios
- Task 5.2: Establishment of the initial community of e-teaching practitioners and e-pedagogical experts
- Task 5.3: Harmonizing in-house incentives to adjust change mechanisms
- Task 5.4: EDUC Academy creation
- Task 5.5: Guidelines for EDUC (European University) Curriculum
- Task 5.6: Implementation of Professional Development Trainings Academies
- Task 5.7: Professional Teaching and Learning Scenario Development
- Task 5.8: Evaluation and Learning Analytics

4. Objectives and outputs of Task

4.1. Virtual Mobility and Exchange Index for EDUC

The expected output of Task 5.1 is an **initial Virtual Mobility and Exchange Index**. This initial index of educational opportunities includes all existing programs, courses and resources, at our universities, offering some forms of virtual mobility and exchange scenarios. This initial index will be continuously enriched in the course of EDUC to integrate the teaching / learning offers coming from the EDUC activities or other developments at our universities.

As stated in the EDUC proposal, the Index will be used for different purposes and by different users' categories:

- Students, teachers and staff: The index of virtual mobility and exchanges will catalogue all educational opportunities within EDUC. This information will be the main reference for students (and also lecturers and staff), providing them a single point of access to discover offline, online, and blended educational offers. This includes for example curricula embedded courses, online/blended learning scenarios, digitally supported student projects, MOOCs, conferences, and summer schools – whether they are accessible at one institution or collaboratively created.
- EDUC project teams: The index will allow capturing all existing learning offers to set up the basis for planning virtual mobility and virtual exchange experimentations as well as to give lecturers the functionality to get inspired and to create their *ad hoc* learning opportunity directly. The index will furthermore facilitate the identification of courses and modules, but also of study programs that can be changed.

In order to limit Task dependency with WP4, we focused on generating an 'Internal index', in the form of Excel files, that is appropriate for the short-term internal use by the EDUC project teams, and that will be used to populate the External Web Index to be produced in the context of WP4.

4.2. Virtual Mobility and Exchange Scenarios taxonomy for EDUC

The identification of the different **types of existing and contemplated Virtual Mobility and Exchange Scenarios for EDUC** is another important output of this Task. Goal is to define a taxonomy of the Educational formats for Virtual Student Mobility within the EDUC alliance. It will orient the experiments to be done in the context of WP5 and EDUC.

This taxonomy is also used in this Task to structure the Virtual Mobility and Exchange Index.

The Virtual Mobility and Exchange Scenarios taxonomy is built from:

- The observation of the existing Virtual Mobility and Exchange Scenarios in a first phase of indexing,
- A study of the existing virtual mobility and exchange models, as available from literature, notably in the context of other European projects (cf. References section in this document).

5. Task organization and schedule

5.1. Task organization

Task 5.1 has been executed by the EDUC WP5 Coordination Group. This group is composed of representatives from all EDUC partner universities and involves project managers, pedagogical engineers, teachers, representative of e-learning services. This Coordination Group is in charge of all Tasks in WP5 and as a transversal view on WP5 objectives and execution.

Here is the list of WP5 Task Group participants as of June 2020.

Name	University	Department	Role
Mai Hoa Nguyenová	Masaryk University	Centre for International Cooperation	EDUC Project Administrator
Aneta Krajčicková	Masaryk University	Centre for International Cooperation	WP5 referral
Antonello Pau	UNICA	University E-learning Center "EFIS"	WP5 referral
Mirko Marras	UNICA	Department of Mathematics and Computer Science	WP4 Referral and WP5 Co-referral for UNICA
Daniela Ghiani	UNICA	Direzione Ricerca e Terroitorio	Project Manager
Fabio Sorrentino	UNICA		EDUC Pedagogical Engineer
Renata Dezso	U Pecs	Institute of Education	Deputy head of the Institute of Education
Judit Vaszari	U Pecs	Educational Organisation Office	Head of Educational Organisation Office
Zsófia Almádi	U Pecs		
Zsuzsanna Gerner	U Pecs	Teacher Training Centre	Head of Teacher Training Centre
François Regourd	UP Nanterre	Comete (pedagogical & digital support)	Director Comete
Ludovic Collin	UP Nanterre	EDUC	EDUC UPN Coordinator
Marine Pirodeau	UP Nanterre	Service of International Relations	EDUC project officer
Jean François Lê Van	UP Nanterre	Comete (pedagogical & digital support)	Head of service Comete
Katja Jung	U Potsdam	EDUC	EDUC project coordinator
Michael Krause	U Potsdam	EDUC	WP5 referral
Laetitia Casimir	U Rennes 1	Suptice (pedagogical & digital support)	Deputy director Suptice
Sujal Chouan	U Rennes 1	EDUC	EDUC UR1 Project officer
Frederic Renouard	U Rennes 1	EDUC	EDUC UR1 Coordinator

Figure: EDUC WP5 Task Group participants as of June 2020

This Coordination Group meets every 3 / 4 weeks in videoconference (with also a face-to-face workshop in Rennes on March 3-4 2020). Task 5.1 coordination was on the agenda of the Coordination Group meeting on following dates:

- 2019/12/22,
- 2020/01/22,
- 2020/02/21,
- 2020/03/04,
- 2020/04/18,
- 2020/05/12,
- 2020/06/09.

5.2. Task schedule

We adopted a phased approach to Task 5.1 (see section below), by running following sub-tasks in sequence:

- 5.1.1. Define objectives, scope, format and method
- 5.1.2. Data collection – Indexing Phase 1 (sampling)
- 5.1.3. Refine objectives, scope, format and method
- 5.1.4. Data collection – Indexing Phase 2 (full)
- 5.1.5. Report (Deliverable D5.1)
- 5.1.6. Disseminate (WP4 Web index).

Schedule was the following:

- 5.1.1. and 5.1.2. ran from December 2019 to March 2020,
- 5.1.3. ran from March to May 2020,
- 5.1.4. ran from May to September 2020.

Compared to the initial planned schedule – as per the proposal – we experienced delays in the Task execution. These delays are mainly due to:

- The time necessary to build the WP5 team and recruit the EDUC dedicated team at universities,
- The difficulty to get attention from people at universities that were able to give us access to primary data (Covid-19 crisis context),
- The heterogeneous quality / incompleteness of primary data, which implied more efforts to collect them,
- The foreseeable delay in the launch of WP4, which implied to concentrate on the production of an Internal Index, based on an Excel format.

5.3. Data sources

The index is derived from EDUC universities programs and courses catalogues, website analysis, information from experts from the central administrations of the universities, interactions with teachers and program managers.

6. Task execution principles

Having an online catalogue – that indexes programs, courses and resources available to distributed students through physical or virtual mobilities – will be a central asset of EDUC.

Indexing programs, courses and resources data in a distributed and heterogeneous context does not come without difficulties.

We describe here some of the Task execution principles implemented to overcome these difficulties:

- 2-phase indexing as a way to learn data format (fields, categories),
- Indexing responsibilities sharing between WPs, with joint data format,
- Internal versus External Index to limit dependencies within the project.

Other ‘Problems and Solutions’ are commented later-on in this document.

6.1. Indexing in 2 phases

Purpose of ‘Indexing Phase 1’ was to collect samples (2-3 per typical scenario) representing the main existing scenarios of virtual mobility and exchange at our universities. Combined with up-to-date knowledge on virtual mobility and exchange models, as available from literature, especially in the context of other European projects, this allowed us to define our EDUC Virtual Mobility and Exchange Scenarios taxonomy, then used as a structure for ‘Indexing Phase 2’ which aims at a more exhaustive indexing.

Benefit of this 2-phase approach is to make sure the indexing format is adapted to the data we intend to index. It is a learning process, where Phase 1 indexing is used to learn how to index data: identifying the appropriate fields and taxonomy.

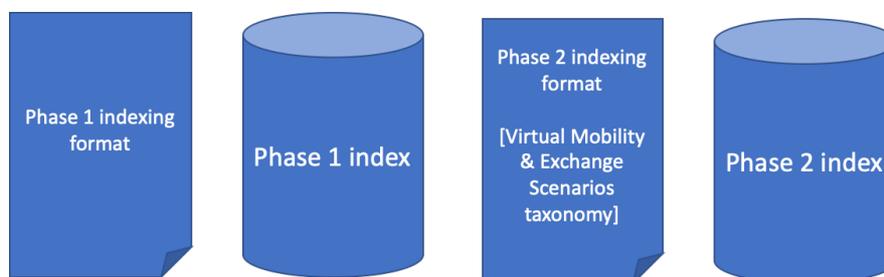


Figure: Indexing phasing

6.2. Indexing responsibilities shared between WPs

As we said, having an online catalogue – that indexes programs, courses and resources available to EDUC students through physical or virtual mobilities – will be a central asset of EDUC. Several WPs in EDUC deal with different categories of such programs, courses, resources and mobility forms and will contribute to feed this catalogue.

As a consequence, in order to clarify the indexing responsibilities, ensuring a good level of focus of each WP, we defined a breakdown of the scope and responsibility of each WP with regard to the different categories of elements to be indexed (see figure below).

Nevertheless, it has been the goal, when designing the Indexing format, to have a 'joint data format', generic enough to cover the needs of indexing of other WPs.

In the context of this Task of WP5, the indexing focuses on programs, courses, resources including virtual mobility or exchange scenarios as existing now. In successive versions of the index, new courses and resources developed in the context of WP5 projects will be added.

Category	WP4	WP5	WP6	WP7	WP8	WP9	WP10
	Digital infrastructure development	Experimentation of VM and VE	Short term physical mobilities (challenge-based, summer schools)	Physical mobility (long)	Cross-disciplinary curricula at Master level (gap year, VM in 2 nd year)	Education meets research (critical thinking, journal club, ...)	Competencies and skills (Europe, language skills, entrepreneurship)
Applications, services	Yes	-	-	-	-	-	-
Long programs (bachelor, master)	The ones to be promoted to EDUC students	Yes, when courses include VM / VE scenarios	-	The ones candidate to experiment WP7 improvements	The ones candidate to experiment WP8 solutions	-	-
Short programs (summer schools, ...)	The ones to be promoted to EDUC students	Yes, when courses include VM / VE scenarios	Yes	-	-	-	The ones relating to WP10 competencies and skills
Extra-curricular activities (conferences, hackathons, ...)	The ones to be promoted to EDUC students	-	Yes	-	-	-	The ones relating to WP10 competencies and skills
Courses and other activities (face-to-face, VM, VE, ...)	The ones to be promoted to EDUC students	Yes, when includes VM / VE scenarios	-	-	The ones candidates for inclusion in VM in 2 nd year	The ones relating to T9.1	The ones relating to WP10 competencies and skills
Digital resources (MOOCs, OERs, ...)	The ones to be promoted to EDUC students	Yes	-	-	The ones candidates for inclusion in VM in 2 nd year	The ones relating to T9.1	The ones relating to WP10 competencies and skills

Figure: Indexing responsibilities between WPs

6.3. Internal Index versus External Web Index

The EDUC Virtual Mobility and Exchange Index will be implemented as a Web index through EDUC WP4.

In order to limit dependency with WP4, it has been decided to differentiate:

- An 'Internal Index', stored as an Excel file,
- An 'External Index', which will be the Web Index.

Task 5.1 focuses on producing the Internal Index. The Internal Index is for EDUC project internal use only.

It is in WP4 that the External Index will be produced, derived from the Internal Index. Only the External Index will be made available to students and teachers.

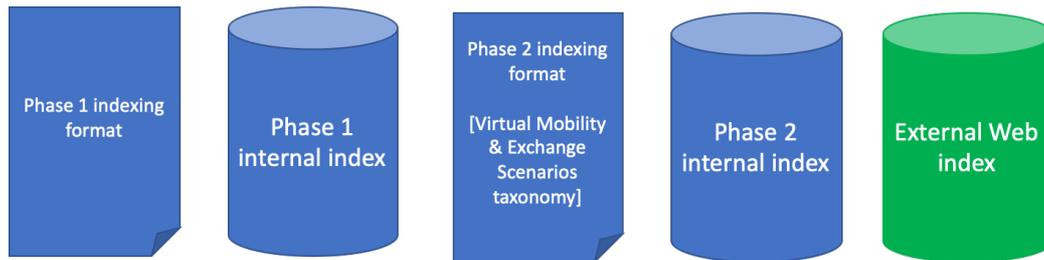


Figure: Internal Index versus External Web Index

7. Task outputs

7.1. Phase 1 indexing format

The indexing format encompasses:

- The indexing categories,
- The indexing fields.

This format was meant to be used as the initial format for Phase 1 indexing only, as it was the goal to revise the format for Phase 2 indexing, based on the learnings brought by Phase 1 indexing.

7.1.1. Phase 1 indexing categories

The following categories were defined:

- Long programs (bachelor, master) when including virtual mobility or exchange scenarios,
- Short programs (summer schools, ...) when including virtual mobility or exchange scenarios,
- Courses and other pedagogical activities when including virtual mobility or exchange scenarios,
- Digital resources.

Courses and other pedagogical activities with virtual mobility or exchange scenarios is a broad category. We did not want to limit ourselves with narrow definitions. We were notably interested in:

- Virtual classes in the form of distance teaching (synchronous online, e.g. webinars),
- Virtual classes in the form of recorded classes (asynchronous online),
- Blended courses, i.e. courses including online contents, for instance according to a flipped-class blending model, opening doors to sharing online contents cross-universities,
- Distributed courses, i.e. courses having several implementations simultaneously running in different universities,
- Implying or not the collaboration of teachers cross-universities for courses development and/or running,
- Implying or not the collaboration of students cross-universities for joint assignments, projects, challenges,
- Virtual mobility or exchange activities targeting students, but also teachers and staff,
- Student-driven virtual mobility or exchange scenarios and/or scenarios design,
- Etc.

Digital resources notably encompass MOOCs, OERs, Other online contents.

All the elements may be:

- In English or other EDUC alliance languages,
- At Bachelor, Master, Doctoral levels.

7.1.2. Phase 1 indexing fields

Phase 1 indexing fields were defined as shown below.

For Phase 1, we put a strong focus on identifying:

- The current mobility scenarios,
- The possible mobility scenarios within EDUC.

This was necessary in order to feed the design of the Phase 2 Indexing categories, i.e. the Virtual Mobilities and Exchanges Scenarios Taxonomy, to be further used in EDUC.

Collection			Where				What				
When	By whom	Status	University	University department	Discipline area	Resp teachers	Title	Description	Level	Type	Duration
Choice: WPS 15.1 WPS 15.2 ...	(WPS contact person)	Choice: EXAMPLE for EDUC (POTENTIAL for EDUC (CANDIDATE for EDUC (READY for EDUC students	Choice: Polonium (P)ols (M)atematyka (C)ygielnictwo (N)ajstare (B)iznes			(names, emails)		(url)	Choice: (B)achelor (M)aster (D)oktorat (P)rofesjonalny	Choice: (P)rogram (M)inor (C)ourse (R)esource	Choice: X (Months X (Weeks X (Years

Credentials		Access						
#ects	Diploma, certificate	Language	Prerequisites	Target audience	Provisions for disabled participants	Application, registration	Price	Contact point for application, registration
		Choice: (G)erman (H)ungarian (C)zech (I)talian (F)rench (E)nglish other		Choice: Students Teachers Staff			(price for EU students)	(url, email)

Current mobility, VM, VE, digital scenario				Possible mobility, VM, VE, digital scenario within EDUC				
Educational format	Digital platform	Partners, cooperation framework	Comments	Educational format	Digital platform	Partners, cooperation framework	Possible synergies with other EDUC WPs? (7, 8, 9, 10)	Comments
Cf. classification in "Educational Formats for Virtual Mobility in EDUC" + describe	Choice: Moodle Coursera ...	(list of universities) Choice (cooperation framework): COIL EIT Digital ... (+ provide url / describe)		Cf. classification in "Educational Formats for Virtual Mobility in EDUC" + describe	Choice: Moodle Coursera ...	(list of universities) Choice (cooperation framework): COIL EIT Digital ... (+ provide url / describe)		

Figure: Phase 1 Indexing fields

7.2. Phase 1 Internal Index

Phase 1 Internal Index is available here:

<https://drive.google.com/drive/folders/1IQoFmHALh9AW4tNOpvlf1Wnss7lZbaff?usp=sharing>

7.3. Phase 2 Indexing format

The indexing format was again in Phase 2 composed of 2 parts:

- The indexing categories = The Virtual Mobilities and Exchanges Scenarios Taxonomy
- The indexing fields.

It is important to remind here that this format is meant to be used not only for the virtual mobility and exchange scenarios – as is the focus of WP5 – but also for the other activities in EDUC that involve programs / courses / resources indexing.

7.3.1. Phase 2 Indexing categories = EDUC Virtual Mobilities and Exchanges Scenarios Taxonomy

The Virtual Mobilities and Exchanges Scenarios Taxonomy for EDUC identifies the following Educational Formats for Virtual Mobility (see Annex 3).

Programme - long
Online degree
Blended degree
<i>Other degree (on-campus)</i>
Programme - short learning program, micro degree
Online
Blended
<i>Other (on-campus)</i>
Course
Online course - SPOC
Online course - Online lecture or MOOC
Online course - Other
Blended course - Resource-based Blended learning
Blended course - Distant classes (synchronous)
Blended course - Other
<i>Other course (on-campus)</i>
Learning resource
Web based training
Lecture series
Recorded class
Other Online Learning Opportunity

Figure: Phase 2 Indexing categories based on the EDUC educational formats for virtual mobility

In addition to these educational formats, our Virtual Mobilities and Exchanges Scenarios Taxonomy also identifies (see Annex 3):

- *Blended and/or online pedagogical scenarios,*
- *Different types of educational contents or resources,*
- *Sequence of activities (social/informal), tasks and assessments into which the educational resources are incorporated.*

A simplified version of The Virtual Mobilities and Exchanges Scenarios Taxonomy (Annex 3) has also been prepared to be provided with the 'Call for Virtual mobility projects' issued in May 2020 in the context of WP5. It is provided here as Annex 4.

7.3.2. Phase 2 Indexing fields

Phase 2 Indexing fields were based on Phase 1 fields, with as a main difference that we replaced the fields related to the description of the current/contemplated virtual mobility scenarios by simply the reference to the Phase 2 Indexing categories, i.e. the Virtual Mobilities and Exchanges Scenarios Taxonomy.

Collection			Where				What				
When	By whom	Status	University	University department	Discipline area	Resp teachers	Title	Description	Level	Type	Duration
Choice: WPS T5.1 WPS T5.2	(WPS contact person)	Choice: (E)XAMPLE for EDUC (P)ROFESSOR for EDUC (C)ANDIDATE for EDUC (R)EADY for EDUC students	Choice: (P)olsdam (P)alo (M)agyarok (C)agliari (R)adstone (R)elinas			(names, emails)		(url)	Choice: (B)achelor (M)aster (D)octorate (P)rofessional	Choice: (P)rogram (M)inor (C)ourse (R)esource	Choice: X (Months) X (Weeks) X (Years)
Credentials		Access									
#ects	Diploma, certificate	Language	Prerequisites	Target audience	Provisions for disabled participants	Application, registration	Price	Contact point for application, registration			
		Choice: (G)erman (H)ungarian (C)zech (I)talian (F)rench (E)nglish other		Choice: Students Teachers Staff			(price for EU students)	(url, email)			
Educational format		Cf. classification in "Educational Formats for Virtual Mobility in EDUC" + describe									

Figure: Phase 2 Indexing fields

As already said, it has been the goal, when designing the Indexing format, to have a 'joint data format', generic enough to cover the needs of indexing of other WPs. Given that some of the other WPs are not yet at the stage where their necessary data format can be known, it is possible that such 'joint data format' needs to be further updated. In so doing, we will strive to limit the changes and avoid the need to retrofit already indexed data.

7.4. Phase 2 Internal Index

Phase 2 Internal Index is available here:

<https://drive.google.com/drive/folders/1K2bc6ruSMFQvCKKR4jlivhFGC2ehwG0f?usp=sharing>

8. Problems and solutions

Following problems have been identified in the process of Indexing. Solutions are briefly described.

These problems are deemed to be rather common in the context of indexing data in a distributed and heterogenous environment. In some cases, further investigations will be required to reach optimal solutions.

	Problems	Solutions
No primary data	For some categories of educational formats, depending on the university, the data may not be readily available in a catalogue	Organize targeted 'call for information' towards teachers or staff.
Low quality / incompleteness of primary data	For some categories of educational formats, depending on the university, the data may be incomplete (i.e. with only a few indexing fields available)	Organize targeted 'call for information' towards teachers or staff. Retrieve data from alternative sources. Work with the universities' e-Learning services to get more qualified data.
Heterogeneity of primary data	Some data may not be directly comparable / expressed in same ways or with the same level of detail. The language may be local language or English.	Post-processing on data.
Outdated primary data / uncertainty on lifetime	Data may be outdated or courses / programs may be discontinued for the coming year(s)	Focus on recurrent courses and programs, that happen every year or are intended to be offered on a regular basis in the future. Organize targeted 'call for information' towards teachers or staff.
Dependencies to teachers / contents owners	Ability to expose a course / program on the EDUC external Web index is subject to teachers / contents owners'	Organize a 'call' for inclusion of courses / programs in the EDUC external Web index.

	agreement and may need documentation effort from them.	
Unspecified / unknown rights to use	Necessary rights to use have to be offered by teachers / contents owners prior to publication of a course / program / resource on the EDUC external Web index	Have teachers / contents owners sign appropriate agreement specifying rights to use in the EDUC context ('Author contract', ...).

9. Towards the EDUC External Web index

Based on the outputs of this Task, an Initial External Web index will be produced in the context of WP4. This External Web index will then be a 'living object' to be updated in the long run.

9.1. Initial External Web index

The Initial External Web index will be produced based on the Phase 2 Internal Index format. It is expected that the fields will be identical or similar so as to ease transfer; fields will be defined jointly between WP4 and WP5. It is expected that the categories will be identical or similar, for the same reason. The web index will be available to EDUC students and teaching staff through the EDUC portal. It will list all available EDUC learning opportunities offered by the EDUC partners within the current and upcoming semesters as well as contain an archive section with past courses. An example for such an external web index can be found on the website of TU Delft's "Virtual Exchange Program" (VEP) in the Netherlands¹. The VEP programme illustrates how a simple web index of courses offered inside a network of partner universities can be organised. Universities who take part in TU Delft's VEP offer academic online courses in various disciplines with ECTS points and guaranteed recognition by the home university to students of the participating HEIs. This model includes significant sharing of resources, because the online courses offered to students from the partner universities in the VEP are developed and taught by academic staff of the offering universities. Underlying the course descriptions and the recognition of ECTS points by the partner universities is a taxonomy of course formats that allows for labeling and classifying course formats in a way that is intelligible to teachers that offer courses as well as to students who browse the web index in search of course offers. The business model of VEP at the TU Delft is sufficiently similar to EDUC to serve as an example for the implementation of the EDUC external web index.

Prior to transferring a course or program from the Phase 2 Internal Index to the External Web index, it will be necessary to get authorization from the teachers / contents' owners (cf. 'Problems and Solutions' above). Internal Indexing is primarily based on database search. Interaction with teachers is not systematic at this stage. As a consequence, before publication to the External Web index, there is the need to ask authorization to teachers. A dedicated call, emphasizing on the benefits to teachers and support is envisioned.

¹ <https://www.tudelft.nl/en/student/education/virtual-exchange/courses/>

9.2. External Web index lifecycle

The External Web index will be a living object:

- Courses, programs and resources will be continuously added as a result of the WP5 experiments and other EDUC WPs activities,
- Courses, programs and resources will be continuously added or removed as a result of other evolutions of the educational offering at our universities, courses discontinuation, etc.

In this sense, indexing will be a 'work in progress' during the whole project. Dedicated processes will be defined between WP4 and WP5 to handle the External Web index lifecycle.

10. Acronyms

EDUC: European Digital UniverCity

VM: Virtual Mobility

VE: Virtual Exchange

WP: Work Package

11. References

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End of report