Design guidelines for flexible and scalable SLPs

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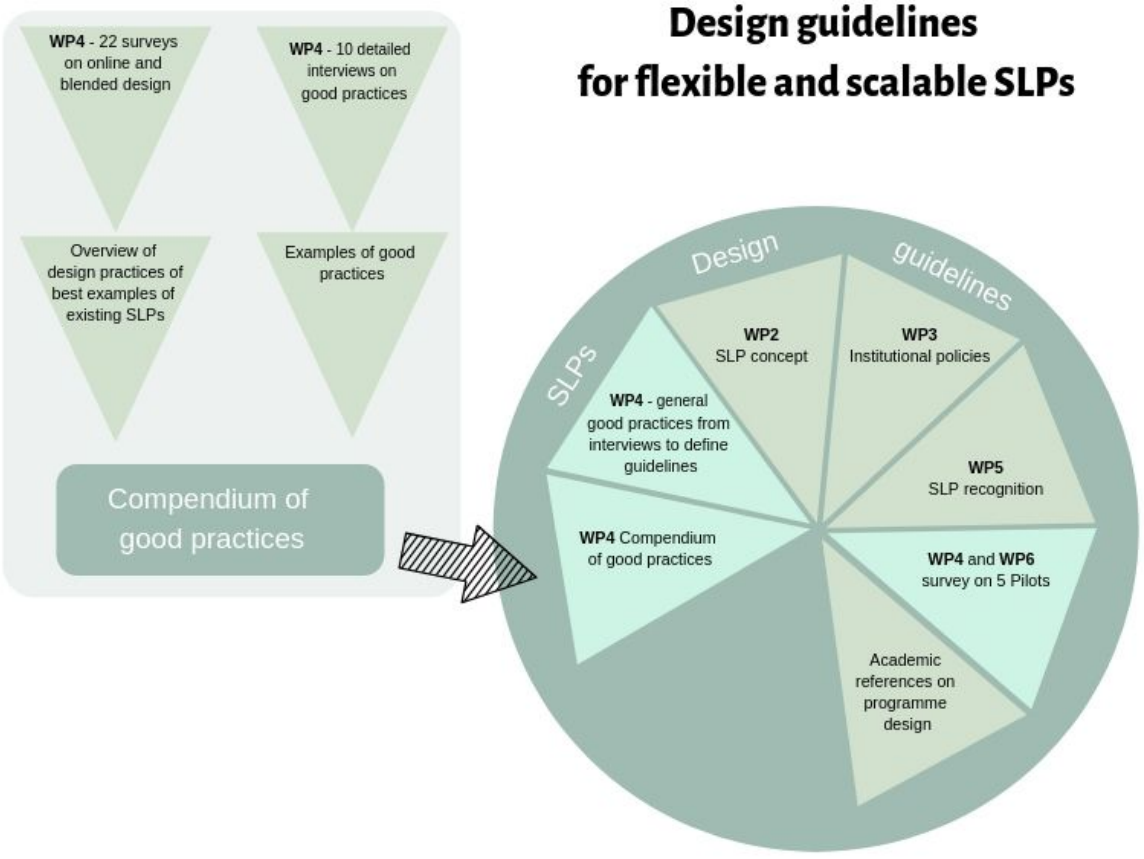
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Acknowledgement / About E-SLP Project

This report is published as part of the E-SLP project: European Short Learning Programmes. The E-SLP project is funded by the Erasmus+ Programme and from 1 January 2018 until 31 December 2020.

Short Learning Programmes (SLPs) are a group of courses (units, modules or other learning building blocks) with a common subject focusing on specific needs in society which can be used as stackable elements of larger formal degrees targeting non-traditional and adult learners. The E-SLP project focuses on online, flexible and scalable SLPs in the European context.

This report is part of work package 4 and was coordinated and written by Marcelo Fabián Maina, Lourdes Guàrdia, and Sandrine Albert, Universitat Oberta de Catalunya (UOC).

Partners

P1	European Association of Distance Teaching Universities
P2	Fernuniversität in Hagen
P3	The Open University
P4	Open Universiteit Nederland
P5	Universidad Nacional de Educación a Distancia
P6	Universitat Oberta de Catalunya
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1. Introduction

The project "European Short Learning Programmes" (E-SLP) aims at developing networked Short Learning Programmes, which answer societal needs[1] and provide flexibility to learners.

Within the project SLPs are understood as short-term academic programs situated between singular learning units and more extensive academic programs. They offer academic training for selected topics that are of high relevance to certain target groups or introduce new skills that are highly relevant for primarily lifelong/adult learners in employment.[2]

A Short Learning Programme (SLP) is an educational programme with a sequenced set of components (units, modules or other learning building blocks). It is offered by Higher Education Institutions at EQF levels 4 to 8 (foundation, bachelor, master and doctoral). It is usually awarded with a (micro) credential and can be used as stackable elements of larger qualifications, (e.g. bachelor degree). It should be worth 5 to 60 ECTs. It can be market driven and focused on the needs of society. It is normally targeted at non-traditional and adult learners.

A SLP can either be online or blended. It must be flexible and scalable. It can be recognised and preferably accredited, and can relate to larger formal degrees.[3]

The aim of these "Design Guidelines for Flexible and Scalable SLPs" is to help the creation and development of SLPs at Meso and Micro level. They illustrate how to design flexible, scalable, accessible and relevant SLPs for users and groups of users. As it is relatively new, design principles are evolving and as front-runner the E-SLP project is the trailblazer. Using online SLPs to go beyond a regional design to national and international design.

These "Design Guidelines for Flexible and Scalable SLPs" have been produced, as part of the E-SLP project. Data was collected from an internal report: "Compendium of Good Practices"[4], which was drafted from the findings of a survey collecting information on the design of 22 SLPs supported by the detailed interviews of 10 of these SLPs. This report gathered evidence of design good practices in existing SLPs and revealed possible progresses that could be made. These improvements have evolved into guidelines, which focus on how to design SLPs that correspond to the parameters of the E-SLP project.

[1] Specifically adapted to continuous education / CPD for companies and lifelong learners.
[2] "Definition SLP and Glossary" - WP2 - Concept and role of SLPs in European HE - 2019 - OUNL
[3] "One page summary" - WP5 - Recognition issues with regard to SLPs - 2019 - OUUK
[4] "Compendium of Good Practices" - WP4 - Curriculum and course design in SLPs - 2019 -UOC

These guidelines are, furthermore, based on results from reports published by collaborating partners: WP2[5] (Open Universiteit, The Netherlands), WP3[6] (Fernuniversitaet In Hagen), WP5[7] (The Open University United Kingdom) and on academic literature[8].

This is the first version of the "Design Guidelines for Flexible and Scalable SLPs", it will be updated once the SLPs' pilots have been designed. A WP6[9] (KU Leuven) survey will gather feedbacks on the pilot design process and possible issues encountered. This will enable us to gather and include further information on the creative experience in a revised version (V2).

[5] Concept and role of SLPs in European HE - WP2 - 2019 - OUNL
[6] Institutional policies for SLPs - WP3 - 2019 - FernUni Hagen
[7] Recognition issues with regard to SLPs - WP5 - 2019 - OUUK
[8] REFERENCES
[9] Pilots on the collaborative SLPs and related mobility - WP6 - 2019 - KU-Leuven

2. SLP design

2.1. Needs Analysis and Educational philosophy

2.1.1. Design brief

Before beginning to think about the short learning programme to be designed it is important to draw the present state of affair.

CONTEXTUAL ANALYSIS	**RATIONALE**
Which are the actions already made?	
What are the constraints of the project?	Institutional policies: Legal issues: Pedagogy agreement: Accreditation and recognition requirements: Quality assurance (QA): Management issues (human resources management - strategic management - finance management, etc.): Agenda: Technical imperatives: Technical limitations: Other constraints:
Which known means are available to create the SLP?	Learning environment: Available technologies: Resources: Staff/Internal experts: External experts or collaborators: Other means:

What is the detected need for this SLP?	Continental needs: National needs: Regional needs: Institutional needs: Global trends: Societal needs: Market needs: Other needs:
Which is the Collaboration history of the partners?	

Once a complete picture of the current situation has been established, a general presentation of the SLP can be drafted.

PROJECT PRESENTATION	**RATIONALE**
How many ECTs will the SLP amount to?	
In which language(s) will it be delivered?	
Which EQF level will it have?	
Are there any prerequisite necessary for enrolment?	
Will it be online or blended learning?	
What is the context?	
Where there any surveys or studies carried out on learners needs?	
Is there any available learners feedback on similar programmes?	
What are the general aims of the SLP?	
Which target group(s) ha(ve)s emerged as focal point?	
What kind of learners the SLP is targeted for (e.g. adult, non-traditional)?	
When should the SLP be ready for?	

Which format should the SLP take? (Practical learning, collaborative and peer learning, project-based, independent learning, problem-based/inquiry-based, content-based, more than one format ...)	
How will quality be controlled?	

All these inquiries will initiate the design process and enable the pedagogical team to form a general understanding of the needs and resources.

ANNEXE 1

2.1.2. Educational philosophy

Once the design brief is formulated, attention should be focused on the manner the topic will be delivered to learners. It is a stage for reflexion on the educational philosophy and on the main lines of the teaching and pedagogical approaches, which will best serve the topic and enable learners to acquire the knowledge, skills and abilities, which are to be developed. Short learning programmes should be written in line with the cycle descriptors of the Framework for Qualifications in the European Area[10].

The process of defining the educational philosophy will result in the provision of a framework for the SLP by introducing the programme key vision and values as well as general consensuses on the teaching, learning and assessment approaches adopted. One key issue to be considered when designing a SLP is the learners learning environment, whether in an online or blended learning context, learners will spend a fair amount of time studying on their own. The educational philosophy must consider this aspect and provide solutions to render the learning process dynamic and sociable.

Teaching and pedagogical approaches take into account all the aspects of the design brief to provide the most efficient and stimulating manner to deliver the programme's knowledge and to develop relevant skills. The E-SLP project requires the design to be learner-centred and emphasises the need for innovative pedagogies[11] to deliver SLPs.

[10] "Recognition issues with regard to SLPs - WP5 - 2019 - OUUK - https://ec.europa.eu/ploteus/en/content/descriptors-page

[11] "Innovation in pedagogy, like any kind of innovation, takes existing ideas, tools or practices and brings them together in new ways to solve problems when current practice is not adequately meeting needs." UNDERSTANDING INNOVATIVE PEDAGOGIES: KEY THEMES TO

As our studies show[12], that there are some patterns of good practices already being applied in SLPs to deal with these issues. Collaborative and peer learning are important elements of online programmes. They not only fight against a possible isolation of the learner in front of his/her screen, but also empowers learners and makes them actors of their own learning process. Peer learning could be developed further using also peer assessment methods.

Depending on the programmes' topics, it can be advisable to resort to authentic learning approaches by the means of inquiry-based, case-based, role-playing, lab and fieldwork, associational brainstorming. It is desirable to focus on active learning and authentic situations whenever it is possible and suitable. When relevant to the SLP's objectives, especially in a CPD context, the format should allow professional networking and direct contact with the industry thus providing learners with real experiences and possible connections with future recruiters. The pedagogical team could decide that the SLP should be part of a dual learning scheme to promote professional contacts and experience a real working context.

A sociable stance should be an intrinsic element of SLPs, however, this doesn't mean that independent learning has not its role to play. It is a stimulating approach, which can increase motivation and confidence, can allow personalised tasks as well as provide autonomy. It must be noted that it is not suitable for all target groups and that it should be overseen by a member of the pedagogical team.

The teaching style also has an impact on the programme outcomes. When it requires a more important role as a decision maker from the learners' side, it promotes the production of new knowledge instead of a reproduction of past knowledge, thus increasing the complexity levels of learning outcomes achieved. Efforts should be made to stay away from transmissive teaching styles which are not stimulating, they do not enable learners to form hypothesis nor to develop critical thinking. An appropriate use of ICTs, introducing automated interactivity and online synchronous or asynchronous interaction with other learners and staff, is recommended.

This stage also permits to determine the core educational values promoted in the SLP. We observed some good practices in partners' SLPs in terms of educational values. Some SLPs develop autonomous student learning, opportunities to learn from peers, thinking reflectively, socially-awareness, curiosity, dedication, motivation or student commitment to their studies.

ANALYSE NEW APPROACHES TO TEACHING AND LEARNING - OECD Education Working Paper No. 172
http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=EDU/WKP(2018)8&docLanguage=En

[12] Benchmarking of 22 existing SLPs and interviews of 10 SLPs which best fitted the project's criteria (as detailed here in the introduction). - WP4 - Curriculum and course design in SLPs - 2018- UOC

2.2. Approaches

Online Learning Environment (Allen & Seaman, 2010)[13]

% on-line	Type of Course (Module)	Typical Description
0%	Traditional	Course with *no online technology* used – content is delivered in writing/orally
1-29%	Web Facilitated	Course that uses *web-based technology to facilitate F2F course*. May use VLE or web pages to post curriculum & assignments
30-79%	Blended/Hybrid	Course that *blends online & F2F delivery*. Substantial proportion of content is delivered online, *typically uses online discussion & typically has a reduced number of F2F sessions.*
80+%	Online	A course where *most/all of the content is delivered online*. Typically no F2F meetings.

2.2.1. Online learning approach

E-learning encompasses not only technology but also pedagogical and instructional strategies to configure a complete learning environment based on the Internet[14].

Online learning provides many advantages both for learners and for pedagogical teams. As the project aims at promoting mobility for learners and broaden their access to education and path choices, online learning is the recommended option. It offers a greater flexibility to learners (place, pace, time) and enables non-traditional and lifelong learners to access more programmes.

When designing, pedagogical teams should aim at keeping as much flexibility as possible in the programme to fit a non-traditional target group[15]. They should consider whether or not there is a

[13] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education *Table 9.1 - An Overview of Online Learning Environment (Allen & Seaman, 2010)*

[14] Rosa Navarrete, Sergio Luján-Mora, Myriam Peñafiel. 2016 Third International Conference on eDemocracy & eGovernment (ICEDEG 2016)

[15] Non-traditional learners and adult learners, who combine work and study or learn for personal development. Many of these learners will have longer careers and rapidly changing careers and are in need for updating innovative knowledge and skills.
SLP's, introducing disadvantaged groups to degree studies (migrant students, refugees, etc.) can be provided as well.

possibility for the programme to be on-going or to have regular starting dates; whether it learners could course the SLP at their own pace; whether the amount of synchronous interaction be minimised to improve freedom of work.

Our studies show that there are already some SLPs, which were designed as asynchronous, self-paced programmes and non-stop enrolments. Others allow for a personalisation of learning path, it can be in terms of sequencing (learners can choose to study the LBBs of the SLP in the order they wish), in terms of activity constituents (they can introduce their professional or personal contexts into the activities or assessments) or in terms of competences, learning outcomes or contents (the SLP could be built by the learners selecting different learning opportunities (MOOCs, seminars or courses from the university, library or external resources) under the supervision of a facilitator and leading to a recognition or it can a recognised self-initiated learning). These possibilities vary with the topic of the SLP and the teaching staff / SMEs' contexts so they are not always possible.

A SLP should be scalable, this is easily achievable with an online programme, in most cases: the pedagogical team has to be able to scale the number of learners in function of the affluence, it is usually done by using a cluster system. Teaching staff or facilitators are allocated a cluster of learners, thus enabling institutions to respond organically to the changes in the demand by enlisting more or less staff when necessary.

2.2.2. Blended learning approach

In some particular cases, a blended learning approach can be appropriate at macro (the whole SLP) or at micro level (one or more LBB). The choice designing a blended learning programme can be motivated by various needs or objectives. It can be because the pedagogical team identified that the topic required practical Face-2-Face activities (dangerous, specific equipments, getting hands on experience to put into practice learnt theories, etc.), because they concluded that the F2F time would provide unique opportunities for specific professional visits or for attendance to special events, or because they wish to promote particular collaborative activities. Other reasons for choosing blended learning can include a decision the use the F2F time to generate a sense of community, the nature of the learning outcomes, the skills acquisition, the modes of assessment chosen or the available technology. Blended learning should use F2F time to support online learning or to develop activities which are not possible online. Whenever possible technologies should be used to replace F2F activities and keep SLPs flexible and scalable. For example, there could be live streaming with chats of

F2F debates or activities, to include those who are remote and cannot attend, recordings of F2F sessions should be made available online or alternative activities should be proposed to learners unable to participate to the F2F ones.

It is a good practice to organise one or more flipped classroom sessions in a blended learning programme to foment critical thinking, learners' participation and debates. A flipped classroom provides an active learning environment for the F2F interactions, as contents to be studied and materials can be prepared by learners before a live session. To be noted that it is also possible to organise a flipped classroom in an online context when live streaming is used.

In the E-SLP project context, a blended learning approach should be kept to a minimum to insure flexibility and access. Whenever possible the F2F should be grouped together (a whole week, two weekends, etc.) to enable remote learners to attend.

2.3. Organisation and structure

2.3.1. Macro Design

Designing at programme level, broadly means taking decisions on how to develop a teaching strategy to enable learners to reach learning outcomes. Some general programme directions must be taken at this stage. Flexibility and adaptability should be introduced at all levels whenever possible: the SLP or some of its LBBs could be asynchronous or self-paced, the learning path might be personalisable, no imposed completion time, there could be non-stop enrolments. The SLP has a short format by definition. Its design could also include a (self-)orientation or (self-)evaluation system at the beginning of the SLP to enable learners to advance directly to the LBB they need to course and therefore have optional and mandatory LBBs.

This first phase of design encompasses questions, which set the outline of the SLP.

SLP OUTLINE	**RATIONALE**
How many ECTs should the learners be rewarded for coursing the SLP?	
What are the SLP's aims?	
How will the SLP be sequenced?	

How can the target group be conceptualised into model-learner?	
What should the curriculum contain?	
How will the curriculum be integrated to the real world?	
Which methods will be used for identifying the competency needs[16]?	
Which are the intended learning outcomes learners should be able to do by the end of the SLP?	
How will learning be assessed?	

ANNEXE 2

- **Aims**

The SLP aims provide an overall vision of the teaching intention and the SLP's direction. It is the part of the learning, which is controlled by the pedagogical team (as opposed to the learning outcomes which is controlled by the learner).

AIMS	**RATIONALE**
What does the SLP prepare the learner for?	
In which area will learners develop competencies in the SLP (general)?	
Which is the general teaching coverage of the SLP?	
What is the content of the SLP? [17]	

ANNEXE 2

- **Personas**[18]

[16] A workbook for the joint planning ofcompetence modules - AVOT project - Creative Commons - http://avothanke.fi/wp-content/uploads/2018/10/workbook.pdf

[17] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice "Programme aims [....] can be written as follows: The programme: - prepares students to/for.... -develops competences in the areas of.... -provides students with. In practice, examples of programme aims are usually in the region of 3-4 broad aims."

[18] The Learning Design Grid - Personas - http://www.ld-grid.org/resources/representations-and-languages/personas

The creation of one or a few personas is helpful to grasp learners' needs and constraints. Drawing a few fictitious learners will help to have a clearer picture of whom the SLP is designed for. It is useful to keep the personas at hand through the whole design process to keep in mind learners' perspective. According to Alan Cooper[19], "Personas allow us to see the scope and nature of the design problem". SLP should target mainly non-traditional and adult learners so one or more of the persona should correspond to their needs.

ANNEXE 3

- **Topic**

SLPs have subjects focusing on specific needs in society, they can be market driven. There are various means available to analyse the most significant elements of a SLP subject. Information can be found out through benchmarking, through reports from relevant ministry / national agencies, through a market key actors made part of the pedagogical teams, through face-to-face dialogues with industries protagonists, by asking professional learners about their needs. There should be a systematisation of society and market evolutions input into the pedagogical choices. Market data should be facilitated to pedagogical teams and contacts with key actors should become habitual.

"The needs for SLPs in areas like health care, education, information technology or environment are very large, as shown in the EIT[20]-KICs. Also, particular target groups as refugees or migrant students need (probably a specific selection of) SLPs for employment within a short term".

- **Sequencing**

The organisation of the learning path depends on the teaching style which has been chosen, on the kind of topic which is to be taught, on the target group, on learners' context, etc. There are many possibilities for sequencing a programme: free learning path (e.g. negotiated curriculum[21]) where learners will decide themselves in which order they will investigate the SLP's LBBs[22] (when possible and relevant), simple to complex, prerequisite learning[23] (particular aspects grasped before others), whole to part (inquiry / problem-based / concept), chronological learning (historical / developmental), from novice to expert (mirror the professional development of skills), adaptive learning path (cognitive scaffolding).

[19] Cooper, A. (1999), *The Inmates are Running the Asylum - Why High-Tech Products Drive Us Crazy and How to Restore the Sanity*, SAMS publishing

[20] European Institute of Innovation and Technology (EIT) https://eit.europa.eu/
[21] Students should chose and sequence their own topics in their curriculum, i.e. a negotiated curriculum (Neary, 1999, p111-114).
[22] Merrill, M. D. (1994). Instructional Design Theory. Englewood Cliffs, NJ: Educational Technology Publications.
[23] Conditions of Learning (Robert M. Gagné) https://en.wikipedia.org/wiki/Conditions_of_Learning

When it comes to SLPs, a personalisable learning path provide more flexibility to learners and would be more preferable whenever possible.

- **Competences**

The European Reference Framework[24] defines competences as a combination of knowledge, skills and attitudes appropriate to the context. Key competences are those which all individuals need for personal fulfilment and development, active citizenship, social inclusion and employment.

The European Reference Framework sets out eight key competences:

1) Communication in the mother tongue;
2) Communication in foreign languages;
3) Mathematical competence and basic competences in science and technology;
4) Digital competence[25];
5) Learning to learn;
6) Social and civic competences;
7) Sense of initiative and entrepreneurship; and
8) Cultural awareness and expression.

With these key competences in mind, designers need to take into account various elements to identify competences needs[26].

COMPETENCES	**RATIONALE**
Which is the competences need related to themarket?	
Which is competences need related to the topic?	
Which is the competences need for the target group?	
Which are the skills necessary to reach the selected competences?	
Which knowledge is necessary to reach the selected competences?	

[24] KEY COMPETENCES FOR LIFELONG LEARNING — A EUROPEAN REFERENCE FRAMEWORK https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006H0962

[25] The Digital Competence Framework 2.0 - EU - https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework

[26] A workbook for the joint planning of competence modules - The AVOT project is funded by the European Social Fund - http://avothanke.fi/wp-content/uploads/2018/10/workbook.pdf

Which are the attitudes necessary to reach the selected competences?	
Are some of the selected competences included in the Key competences highlighted by European Reference Framework?	
Which methods will be used for identifying the societal competence needs related to the SLP?	☐ Interviews ☐ Surveys ☐ Company visits ☐ Social media ☐ Workshops ☐ Collaboration with other projects ☐ Foresight reports ☐ Job offer ads ☐ Other methods:

ANNEXE 4

SLPs should also aim at developing generic skills, in particular the skills which have been defined by the European Reference Framework[27]: "Competence in the fundamental basic skills of language, literacy, numeracy and in information and communication technologies (ICT[28]) is an essential foundation for learning, and learning to learn supports all learning activities. There are a number of themes that are applied throughout the Reference Framework: critical thinking, creativity, initiative, problem solving, risk assessment, decision taking, and constructive management of feelings play a role in all eight key competences"[29].

Learning activities should be designed keeping in mind the development of these skills, either as generic skills or direct learning outcomes.

A Learning Building Block dedicated to learning generic skills relevant to the labour market (for example: collaboration, brainstorming, ICT safety, digital data processing, digital communication, problem-solving with digital tools, critical thinking, analytical thinking, creative thinking, decision making) could be designed and reused in SLPs whenever relevant.

[27] KEY COMPETENCES FOR LIFELONG LEARNING — A EUROPEAN REFERENCE FRAMEWORK https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006H0962

[28] The e-CF (European e-Competence Framework) profile enabling tool: http://www.ecompetences.eu/ http://www.ecompetences.eu/the-e-cf-profiling-tool/ - http://www.ecompetences.eu/e-cf-in-practice/

[29] KEY COMPETENCES FOR LIFELONG LEARNING — A EUROPEAN REFERENCE FRAMEWORK https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006H0962

- **Programme Outcomes**

The learning outcomes at programme level refer to what a typical learner should have learnt in broad terms once the programme is over. They are less specific than the LBBs' learning outcomes. They are measurable (through clear assessment methods) and are related to the credits or recognition awarded at the end of the programme[30]. They represent the overall knowledge, skills and behaviours, which should have been acquired during the SLP.[31] They take into account (in function of the aims and topics of the SLP) the stakeholders' needs, technological and educational advances, latest research findings, new fields with general interest for a community, certification and accreditation requirements, personal experiences of the professors in the writing process without mentioning them in the stated outcomes.

Designers should refer to the European Qualifications Framework (EQF)[32] when writing the programme's learning outcomes. Short learning programmes should have clear and transparent assessment methods to assess achievement of the learning outcomes[33].

Well-integrated and trained design teams should work on the macro-design together with the micro-design, in order to provide coherence at a higher level (competences) as well as in details (learning outcomes)[34].

Programme learning outcomes answer the question: What is the learner expected to know and to be able to do, in broad terms, after completion of the SLP?

- **Structure**

The SLP structure should be designed based on the established SLP competences and general learning outcomes as well as the amount of credits (1 ECTS = 25 hours) and, therefore, the amount of work each LBB will represent (including learners personal work and assessments). Although there might, occasionally, be LBBs which have different workload than other, as a rule they should require a similar sum of effort from the learners.

[30] Principles of Recognition for curriculum design: Short learning programmes should have clear and transparent assessment methods to assess achievement of the learning outcomes - WP5 - 2019 - OUUK

[31] G. O'Neill "The key characteristics of program outcomes are that they are: 1) Student focused, i.e. The student should be able to... - 2) High-level outcomes that are greater in scope and complexity than module outcomes - 3) Guides by professional, inter-disciplinary and institutional graduate attributes - 4) Informed by international, national and institutional level guidelines. (UCD Curriculum Review Project, 2015)"

[32] Descriptors defining levels in the European Qualifications Framework (EQF) https://ec.europa.eu/ploteus/en/content/descriptors-page

[33] Recognition issues with regard to SLPs - WP5 - 2019 - OUUK

[34] Compendium of good practices - WP4 - Curriculum and course design in SLPs - 2019 - UOC

The pedagogical team can meet online or F-2-F to add all the elements which have been decided on to a template (*Annexe 5*) to get an overview of the SLP and have a brainstorming session to start writing ideas and general directions on activities, assessments and platform needs.

ANNEXE 5

Once the number of necessary LBBs and their respective topics have been defined, the SLP's structure can be mapped out. A SLP should be built of more than one LBB.

Concept maps / mind maps are useful tools to develop a programme structure as they enable to the team to have a visual overview of the SLP. Concept maps can either be used in a F2F working session or as a shared online tool (Mindmup, Freemind, Framindmap, etc.). They can be used to shape the SLP, planning LBBs' learning outcomes, contents, activities and assessments. At this stage, the design outlines the general SLP structure. The development of the contents, activities and assessments will occur at a later stage. So the team should concentrate on the type of elements needed, instead of how they will be developing them. This doesn't mean that creative ideas shouldn't be taken note off [35]

ANNEXE 6

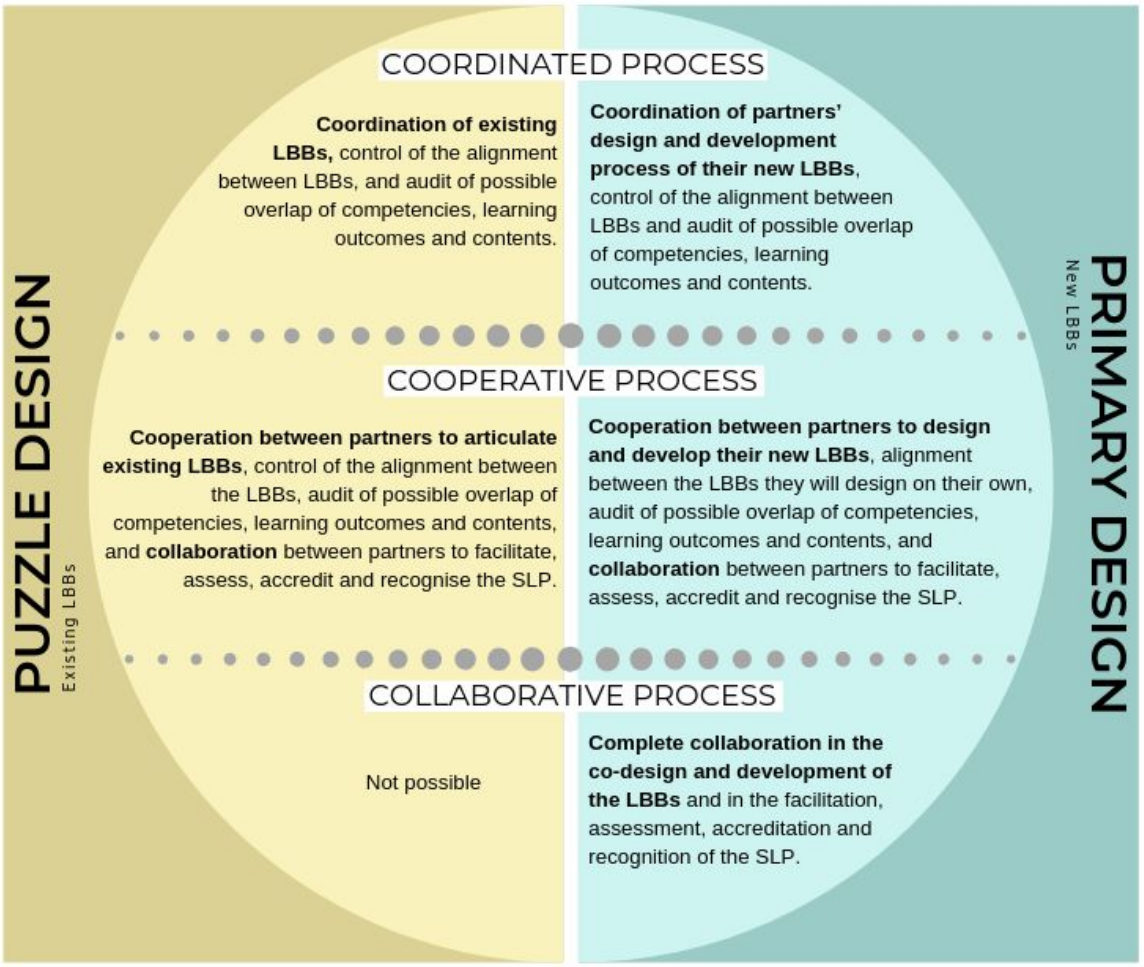
2.3.2. Collaborative Design

A SLP can be designed between different partners. These partners could be other institutions or SMEs, for example.

When designed between different institutions a SLP can be created from scratch (primary design) or as a puzzle of existing LBBs.

The SLP topic need to be addressed first, this decision should come from an institutional request for many reasons. These can include the will to answer a market need, to develop partnership with another institution, to offer contrasting views, or to have access to already designed LBBs in the case of puzzle design. It can also come from existing collaborative projects.

[35] For further information on concept maps, please consult: The Theory Underlying Concept Maps and How to Construct and Use Them - Joseph D. Novak & Alberto J. Cañas - http://cmap.ihmc.us/docs/theory-of-concept-maps



- **Primary design [36]**

This is the most common approach, each LBB is to be designed for the SLP. This approach can be either done through a **coordinated development process** or through a **cooperative development process** or through a **collaborative development process**.

The first meeting should concentrate on reaching an agreement on a common educational philosophy, on checking that there are no specific institutional policies which might be conflicting and on establishing an agenda with regular meetings as well as on setting key milestones to be reached. This meeting should also be used to determine the design and development process, which will be selected (coordinated, cooperative or collaborative), in order to set clear partners responsibilities and to articulate the methodology around the chosen option.

[36] **Interactive graphic:** https://www.thinglink.com/card/1201100467183026182

In a **coordinated development process** each partner will **design and develop** their own LBB(s). Each partner is responsible for the implementation of their own LBB(s) on their own platform as well as the facilitation, assessment, accreditation and recognition of their own LBB(s). At design level, this implies a **coordination of the partners' design and development process of their new LBBs**, a control of the alignment between LBBs and an audit of possible overlaps of competencies, learning outcomes and contents.

In a **cooperative development process** each partner will **design and develop** one or more LBB(s). Each partner is co-responsible for the implementation of the LBB(s) they will design and develop on their own platform or on a centralised platform. Each partner is co-responsible for the facilitation, assessment, accreditation and recognition of the LBB(s) they design or for all the LBBs. At design level, this involves a coordination between partners to **design and develop their new LBBs**, a control of the alignment between LBBs they will design on their own, an audit of possible overlaps of competencies, learning outcomes and contents, and a collaboration between partners to facilitate, assess, accredit and recognise the SLP.

In a **collaborative development process** partners will **collaborate on the design and development** of one or more LBB(s). Each partner is co-responsible for the implementation of the LBB(s) they will co-designed on a centralised platform. Each partner is co-responsible for the facilitation, assessment, accreditation and recognition of the LBB(s) they will co-designed. At design level, this entails the **complete co-design and co-development of the LBBs** and the collaboration between partners to facilitate, assess, accredit and recognise the SLP.

In the following meeting(s) partners will set the basic elements of the SLP (refinement of topic, agreement on the target group, EQF level, ECTs, recognition / accreditation) and design the SLP structure. Online and / or F2F meetings, with all the partners, should be organised regularly to avoid dissonance in the design. Once the structure is set an audit should take place between partners to ensure that there is no overlap between competencies and learning outcomes.

Once this is done, the workload should be divided between the partners. Depending on the number of partners and on the resources, this could be achieved by allocating one or more LBB(s) to each partner or by setting inter-institutional work groups, which will collaborate on designing some LBBs. Each partner or group can then design separately or conjointly the LBB(s) they are responsible for. There should be a leader designated for each LBB to manage the workload and be responsible for communication within the group and with other partners. Regular online meetings with all the partners should be programmed to insure coherence, dynamism and variety, and avoid duplication of contents and activities. A particular attention to continuity should be paid in SLPs, which are

project-based, which have progressive sequencing modes or which have assessments, which stretch over more than one LBB.

The possible difficulties of a "primary design" can range from a need for a precise predetermined methodology adopted by all partners, an ongoing control of the design process, regular online live meetings, an inadequate reactivity, timetable and availability of each partner, to a difficulty in matching different partners practices (curriculum practices, student working hours/ECTS, etc.).

- **Puzzle design** [37]

The methodology of the "puzzle design" generally follows in the first steps of the "primary design" method: the first meeting should concentrate on reaching an agreement on a common educational philosophy, on checking that there are no specific institutional policies which might be conflicting and on establishing an agenda with regular meetings as well as on setting key milestones to be reached. This meeting should also be used to determine the design and development process, which will be selected (in the case of a puzzle design, it can only be coordinated or cooperative), in order to set clear partners responsibilities and to articulate the methodology around the chosen option. Although these first steps are similar, they slightly differ, however, in that the design structure should be considered as a "work in process" which will be reviewed at a later stage.

Once a temporary structure has been decided on, each partner can review the LBBs they have on the chosen topic and list their learning outcomes, contents, activities, assessments as well as their LBB(s)' study load (ECTS). Once each partner has completed this research and the first steps, they can all meet together and review all the LBBS they have, this meeting will most probably lead to a review of the SLP structure and general learning outcomes, in order to align existing activities and materials, and the SLP design. Some LBBs might need some redesigning while others might be usable as they are.

Reused LBBs should be of the same EQF level as the SLP and be in the same language or in a language accessible to learners' level of study (or translated into the SLP's language).

In a **coordinated development process** each partner has **identified already designed and developed LBB(s)**. Each partner is responsible for the implementation of their own LBB(s) on their own platform, for its/their facilitation, assessment, accreditation and recognition. At design level, this implies a

[37] **Interactive graphic:** https://www.thinglink.com/card/1201100467183026182

coordination of existing LBBs, an audit of possible overlaps of competencies, learning outcomes and contents, a review of the main structure and a control of the alignment between LBBs.

In a **cooperative development process** each partner has **identified already designed and developed LBB(s)**. Each partner is co-responsible for the implementation of the LBB(s) they already had developed or for all the LBBs on their own platform or on a centralised platform. Each partner is co-responsible for the facilitation, assessment, accreditation and recognition of the LBB(s) they already had developed or all the LBBs. At design level, this involves a **cooperation between partners to articulate existing LBBs**, an audit of possible overlaps of competencies, learning outcomes and contents, a review of the main structure and a control of the alignment between LBB, and a collaboration between partners to facilitate, assess, accredit and recognise the SLP.

There cannot be a **collaborative development process** in a puzzle design as the LBBs already exist so there cannot be a shared design process.

The possible difficulties of a puzzle design can include a shortage of existing LBBs in a shared language, a lack of previous agreement from participating universities decision-makers on delivery modalities (platform, implementation, facilitation, etc.), an inadequate reactivity, timetable and availability of each partner, a difficulty in matching different partners practices (curriculum practices, student working hours/ECTS, etc.).

- **External stakeholders involvement**

SLPs can also be designed in collaboration with external stakeholders. They can be SMEs, work agencies, enterprises, social partners (trade unions, local government, ministries, etc.) and be involved at different levels:

- as petitioners (need for specific competences or skills),
- as co-creator of SLP,
- as content writers,
- as seminars instructors,
- as training providers,
- as lecturers,

- as tutors,

- as reviewers...

This type of collaboration enable learners to establish direct contact with professional actors and gain valuable authentic knowledge and skills, especially relevant in the case of CPD.

When working with external partners, the pedagogical team has the responsibility of establishing the collaboration framework. The team should decide on the collaboration method, guide SMEs and communicate clear key milestones and objectives in the design process as well as establish agile mechanisms. Curriculums should be co-designed in an integrated and institutional manner.

ANNEXE 7

2.4. Assessment strategies

Establishing an assessment strategy implies first to answer to the question of why assessing learners? Assessment evaluates learners' progress[38], which has three purposes: to contribute to quality assurance, to provide certification (summative assessment = Assessment Of learning), to improve student learning (formative assessment = assessment For learning and assessment As learning)[39]. The assessment strategy should balance assessment Of and assessment For learning.

"Assessment Of Learning is the assessment that becomes public and results in statements or symbols about how well students are learning. It often contributes to pivotal decisions that will affect students' futures. It is important, then, that the underlying log and measurement of assessment be credible and defensible".[40] It is summative and graded. It compares learners' achievements with the intended learning outcomes, there must be made clear to learners in a measurable manner. It takes place after learning. It can take the form of essays, portfolios, coursework, quizzes, tests, exams, lab reports, homework, etc. It is assessed by the teacher / professor / facilitator.

Assessment For learning is formative. It involves ensuring that learners know what standard (learning outcomes) their knowledge / performance will be contrasted with and giving feedback to improve learners' performance. It is useful to develop learners' engagement in the learning process. It provides teachers, professors or facilitators an evaluation of possible gasps or needs in learning. It takes place during learning. It can take the form of questioning, quizzes, tasks probing learner's

[38] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice Chapter 8: Programme Assessment Strategies
[39] Bloxham & Boyd, 2008; Mutch & Brown, 2001
[40] Manitoba Education, 2006, p55

reasoning, peer- and teacher- 's feedback, peer- and self- assessment, etc. It is assessed by the teacher / professor / facilitator.

Assessment As learning is formative. "Assessment As learning occurs when students reflect on and monitor their progress to inform their future learning goals".[41] It is a metacognitive activity, it helps learners awareness of their learning mechanisms. It involves goal setting, monitoring progress, and reflecting on results. It can take the form of peer- and self-assessment. It is assessed by the learners.

Assessment should be aligned with the competences, the learning outcomes and interconnected with teaching and learning activities.

Particular attention should be paid when designing an assessment strategy to validity, reliability, effectiveness, efficiency and transparency.

Assessment should be designed by well trained and integrated design team which takes into account the macro- and micro-design in the creation of assessments.

2.5. Relation to other programmes

One of the advantages of SLPs is that they can allow for lateral movement of the learners to other programmes at various levels.

SLPs should identify where and how they could be 'stacked' into a larger qualification[42]. The connection to full degree programmes can originate at different levels. A SLP can have joint or networked curricula, can represent a stepping step to a ampler programme, can be a specialisation (optional or mandatory) of a larger programme, can be a smaller part of a larger programme, the other programme can be an accessibility requirement for the SLP, various SLPs can form one or different formal degree programme, etc.

Flexibility also implies the possibility of combining stackable learning units that are relevant to lifelong learners and employers, providing the right set of skills, competences and knowledge[43] so a learner should be able to take different SLPs from different programmes, institutions, European

[41] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice Chapter 8: Programme Assessment and Feedback Strategies
[42] Recognition issues with regard to SLPs - WP5 - 2019 - OUUK
[43] Concept and role of SLPs in European HE - WP2 - 2019 - OUNL

countries and, either cumulate some credits towards a degree, or sufficient credits to be awarded a degree.

SLPs can also bare relation to other non-formal programmes, for example, a MOOC could constitute or replace a LBB of a SLP providing reliable assessment of its reached learning outcomes.

Networked curricula should be consolidated, amplified and generalised. As exposed in the collaborative handbook "NetCu handbook - Guidelines for organising networked curricula" published by EADTU: a continuum of three types of partnership schemes for international curricula and mobility, ranging: exchanged curricula and courses, exchange curricula and exchange mobility and networked curricula and networked mobility.

"Networked curricula and networked mobility are developed within a framework whereby partner institutions agree on mobility flows of groups of students to consistent course packages, defined in advance. Integrated curricula or courses are organised jointly by the partner universities, basically according to the Erasmus Mundus model. They must also be targeted to the students that belong to the partner universities themselves. It is a strong cooperation where universities co- organise the program that is managed by a consortium. This consortium is preferably small and it can include non-university institutions."[44]

2.6. Quality assurance

The development and delivery of short learning programmes should undergo quality assurance processes in line with those of the institution(s) producing them. The assessment of short learning programmes should be subject to quality assurance procedures in line with the Standards and Guidelines for Quality Assurance in the European Higher Education Area[45] (ESG)[46].

There are other means to ensure quality control, like the alignment of recognition practices between countries, the compliance with the EFQ New Skills Agenda for Europe, the consultation with national agencies with responsibility for quality assurance.

Depending on the context, quality control can be achieved through continuous monitoring, surveys (to obtain feedback from learners, teachers, employers and the community), yearly reviews and

[44] NetCu handbook - Guidelines for organising networked curricula© 2012 EADTU / ISBN: 978-90-79730-11-7
[45] Recognition issues with regard to SLPs - WP5 - 2019 - OUUK
[46] Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) https://enqa.eu/wp-content/uploads/2015/11/ESG_2015.pdf

updates, contrast with guidelines (Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), EFQ New Skills Agenda for Europe, Universities' acts and policies, certified ISO 9001, Regional Quality Agency (AQU), Dublin Descriptors[47], MOOC platform standards, own framework, Benchmark statements, learning and teaching plan, accreditation policies, these guidelines "Design guidelines for flexible and scalable SLPs".)

There are different elements which should be controlled for a SLP: conformity with E-SLP's criteria, consistency with European and national quality guidelines, coincidence with the standards and benchmarks established by national bodies (e.g. accreditation agencies, academic, professional and vocational bodies)[48] correlation with institutional(s) strategies, pedagogical and technical issues, coherence between plan and competences, assessment decisions, stakeholders and learners satisfaction, interactivity, communication of teaching staff, materials, SMEs relevance and the quality of their involvement, UX, evolution of market needs .

Quality controls can be conducted by different persons and entities depending on what is being controlled, it can be project coordinators, lecturers / teachers, external assessors, stakeholders or committees.

Yearly or biannually reviews and updates should be scheduled according to topics or competences evolution.

2.7. Delivery

When possible, it is recommended to organise a beta test with a small group of learners before implementing the SLP.

2.7.1. Virtual learning environment

There should be tutorials and a FAQ available to orientated learners and guide them through the virtual environment as well as a facilitator available before the beginning of the SLP.

[47] The Dublin Descriptors are the cycle descriptors (or "level descriptors") presented in 2003 and adopted in 2005 as the Qualifications Framework of the European Higher Education Area. http://www.ecahe.eu/w/index.php/Dublin_Descriptors

[48] Quality Assurance Toolkit for Distance Higher Education Institutions and Programmes ISBN 978-1-894975-34-6 - Commonwealth of Learning, 2009 - P75 http://oasis.col.org/bitstream/handle/11599/105/pub_HE_QA_Toolkit_web.pdf?sequence=1&isAllowed=y

The level of technology used in the SLP depends on the target group, on the topic and on the means available.

There should always be an effort made to ensure that technology facilitate active pedagogy, interactive contents and innovative delivery methods. All levels of the SLP (design, activities, content delivery, communication, platform) should be implemented using innovative technologies and providing as much flexibility to the learners as possible.

The implementation raises a range of questioning which will need to be solved, some which might imply reviewing parameters from the initial design brief:

VLE	**RATIONALE**
Which will be the order of study periods, if any?	
What will the schedule be?	
Which will be the amount of contact teaching?	
What is the time frame?	
When is the SLP scheduled for?	
Will there be more than one edition a year or will it be on-going?	
How will learner communicate with the pedagogical team?	
Will there be a facilitator, a community manager or will professors in charge of communication and learner support?	
Will learners be in contact with external stakeholders?	
If so, via the platform or outside the institutional VLE?	
How will credits be earned?	
What is the registration procedure?	
Which tools (internal and external to the VLE) will be necessary?	
Will learners need access to any external tools and applications?	
Which access will they need?	

ANNEXE 8

2.7.2. Inter-institutional collaboration

Apart from the general implementation issues, which need to be treated, some specific issues also arise when designing SLPs in collaboration with other institutions:

INTER-INSTITUTIONAL IMPLEMENTATION	RATIONALE
What are the key differences between universities and how to ensure a smooth operation between different systems (for example, electronic systems, registration procedures, ways to organise teaching)[49]?	
Will there be one common platform for the SLP or each LBB will be hosted on different platform?	
How will the fees be charged and divided between the institutions?	
How will the coursed and validated LBBs be communicated to the system if there are all in different platforms?	
How will the students register (to each university separately or to one joint university, registration schedule)?	
Which partner will (will all the partners?) recognise and issue a certificate and credits?	
Will they be a inter-institutional certificate? How will study progress be communicated (mutually?) to learners?	
Who will be responsible for solving learners' issues?	
Will the feedback to learners be given mutually or will one partner be responsible for the academic communication?	

[49] 4. Planning the implementation http://avothanke.fi/wp-content/uploads/2018/10/workbook.pdf

Will there be a common facilitator / tutor / community manager if the LBBs are in each partners platform?	
Is there any restrictions (technical, policy, etc.) to give access a facilitator / tutor / community manager to the entire platform when the SLP is hosted on different VLE?	
Will, and if so how, designers and learners have access to learning materials from partner universities' libraries? Will the costs be shared between partners?	

ANNEXE 9

2.8. Credentialisation

Credentialisation is the acknowledgement of learner's learning outcomes or achievements. It should be seen as part of the process of recognition. A credential can be used to indicate competences. SLPs should be recognised and preferably be accredited[50].

Recognition and accreditation could ensure acknowledgment within the professional field.[51]

Certificates, academic credits, badges[52] on professional platforms (ex: LinkedIn), recognised professional certificates and / or officially recognised e-portfolio can contribute to the recognition of a qualification.

Ideally, it would be a generally agreed certification both recognised for professional advancement and academic continuity and be accompanied by a diploma supplement. Recognition should be aligned across countries. SLPs should align with the European Qualification Framework (EQF) and should be awarded by national HE institutions and offer a guarantee at academic level.

The type of recognition delivered at the end of the SLP depends on its aims, on its target group and on the stakeholders involved. The value of having learning outcomes or achievements recognised will

[50] Concept and role of SLPs in European HE - WP2 - 2019 - OUNL
[51] Recognition issues with regard to SLPs - WP5 - 2019 - OUUK
[52] https://openbadges.org/ - https://opensource.com/points-and-badges - https://www.thebalancesmb.com/how-to-create-a-linkedin-badge-for-your-profile-1794575 - https://badgr.org/ - https://openbadges.org/developers/ - https://www.openbadges.me/ - https://openbadges.coerll.utexas.edu/create-badges/

be different depending on learners' objectives (employability, academic studies, personal development, etc.).

3. Learning Building Blocks design

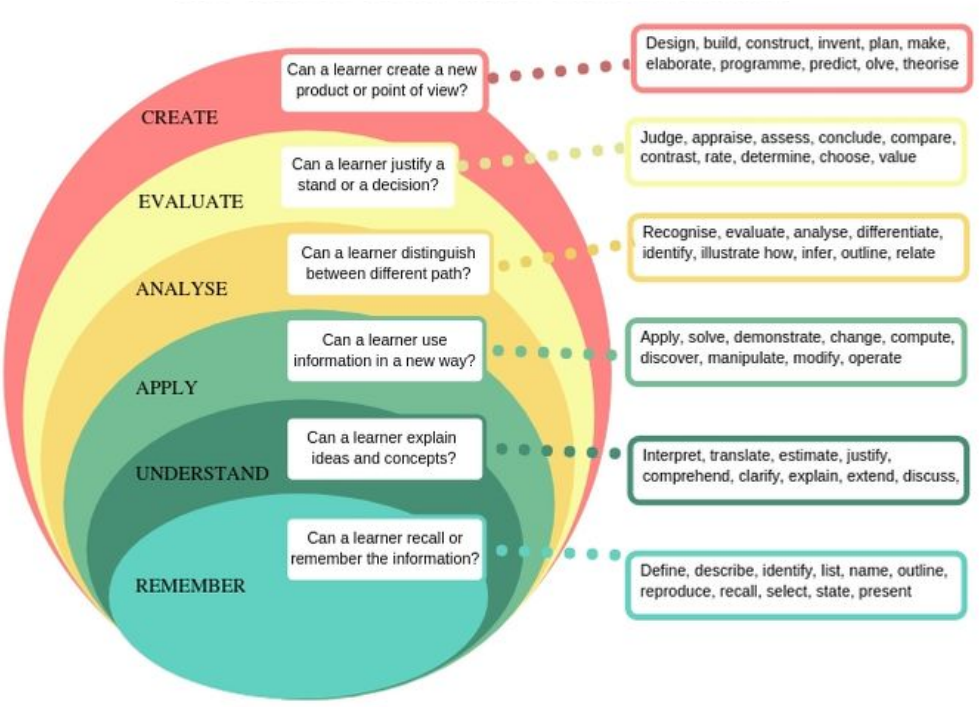
3.1. Intended learning outcomes

Learning outcomes at Learning Building Block level are more specific than at SLP level. They are written following this scheme:

An active verb that describes the knowledge, ability, skill, behavior, etc. that the student will demonstrate through each assessment. It is not recommended to use verbs such as remember, understand, learn, appreciate, like, believe, know, feel comfortable, have an idea about (because they are not directly measurable)[53].

+ the words that indicate on what or with what the learner is acting

+ context the words that describe the nature of the performance



[53] Rensselaer Polytechnic Institute (RPI) - Quick Tips for Writing Learning Outcomes - https://provost.rpi.edu/learning-assessment/learning-outcomes/quick-tips-writing-learning-outcomes

ANNEXE 10

Learning outcomes must be aligned with the assessment and the activities which will enable learners to achieve them.

3.2. Activities

"Learning design sequence maps help outline the complexities of the sequencing of your teaching and learning activities. In order to reduce information overload online, first organise your module's content into themes/concepts/units/activities as is appropriate to your subject."[54]

Activities must be designed keeping in mind the SLP educational philosophy. They are an essentials element of an e-learning programme. They must be aligned with the learning outcomes (and the assessments) as they will enable learners to achieve the intended learning outcomes. An effort must be made to move away from transmissive knowledge acquirement activities in online and blended learning environments. Activities can be used to introduce interactivities between learners and contents, between peers, between learners and the pedagogical team.

When writing an activity it is important to provide learners with a clear view of what is expected of them. The description might include the aim of the activity, what learners will get out it, its assessment method, required materials or tools and where to find them (including all necessary links), the time it should take to realise the activity or instructions for learners on how to complete it.

SLPs aim at proposing innovative learning activities.

Some examples of good practices of online activities include:

- tasks connecting theory and practice, using learners experience and education or personal work events and situations: helps them to break through theoretical boundaries, to more closely associate the practical value of learning theoretical concept, become capable and competent practitioners;
- case studies and real problems solving: helps learners to integrate and connect with unfamiliar knowledge, to be exposed to a variety of activities and viewpoints, to practice task and skills, to project themselves in a possible working environment.

[54] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice Chapter 9: Blended Module Design

- the reflection on problems and elaboration of new solutions: helps learners to develop critical thinking, to evaluate and synthesise new and complex ideas;

- the generation artistic expression: helps learners to connect with a topic on a different level, to enable them to express themselves in another manner;

- peer learning activities (forum, collaborative projects, wiki, virtual brainstorming sessions, debates) enables learners to learn from each others, to keep them engaged and empowered, to improve peer cohesion;

- social learning activities (collaborative information sharing, group assignments within their social media group, text-based online discussion, blogging, Learner-Hosted YouTube Channels, problem solving challenges on social media) : helps with the development of certain essential skills (Digital literacy, Independence and self-learning, Networking, Knowledge management, Decision-making, Collaboration/teamwork, to develop networks, to interact outside established learning environments);

- live interactions / video conferencing: helps learners to connect with the pedagogical team or with experts, to trigger different cognitive skills;

- integration and recognition of non-formal learning activities in programme design. The recognition of non-formal and informal learning outcomes involves several steps (1 - identifying and documenting what someone knows or can do, 2 - validating that the person satisfies certain requirements or standards, 3 - awarding a recognised certification or qualification). Assessment of informal learning can be made through reports, presentations, completion of subject matter related activities or assessments, appraisal of persons involved in learning, interview with the human resources directorate or senior representatives (or even with tutors) for professional learners: helps learners to learn in a less limited and freer environment, to have more autonomy, encounter varied viewpoints;

- e-portfolio[55] with digital badges to recognise skills: helps learners to build their personal and academic identities, to connect learning across programmes and time, to develop self-assessment abilities, to plan their own academic pathways, show their skills, knowledge and abilities to possible recruiters;

[55] Apps: Evernote, VoiceThread, Open School ePortfolio, Three Ring, Wikispaces for Education, Weebly, WordPress, Google Sites, Mahara

- Gamification[56] (badges, points, rewards, visualisation of progression): help learners to engage and to be more motivated;

- Game-based activities[57] [58] [59] (interactive video games, challenges, role-playing, serious games, virtual scenarios, simulations, puzzles): help learners to improve knowledge absorption and to boost knowledge retention, to engage and to be more motivated, to take risks, to explore new roads, to think outside of the box, to develop strategising;

- Interactive video[60] (Interactivity can be achieved by: branching (learners have to make choices) o hotspots / pop-ups (learners have to click on links to get further information or to answer quizzes): helps learners to engage, to remember information;

- Augmented Reality[61] (workplace immersion, authentic scenario): helps learners to react to real-life situation, to project themselves in their future employment, to try hypothesis, to put theory into practice.

Learning objects are focused on a specific learning objective, contain learning content (text, images, video etc.) and possibly (self-)assessment[62].

The choice of media and technology takes into account the range of media and infrastructural support that the institution can make available to its learners[63].

Techniques to grab learners' attention and develop their engagement include visual variety, humour, provocative questions, challenges and accommodation of individual interest and career goals.

Examples of extrinsic motivation include: transferable educational skills recognition, skills recognised on LinkedIn, badges, teacher's feedback, SLP high price.

Examples of intrinsic motivation includes: individual consultancy, gamification, inspiring teachers, varied resources, case-based approach, cohorts, collaborative tasks, continuous assessments and continuous engagement, live session, discussions between peers, a final objective.

[56] Gamification is the use of game elements in non-gaming environment.Sheldon, L.: The Multiplayer Classroom: Designing Coursework as a Game [Hardcover], 1st edn., p. 304. Cengage Learning PTR (2011)

[57] Games-Based Learning (GBL) is using a game as part of the learning process.

[58] Apps: Superbetter, Habitica, Task Hammer, Chore Wars, The Sandbox, Scratch, Gameblox, Classcraft, Aris, UDK, etc.

[59] Good Practice Experts suggest that most common pitfalls are: Tools not fitted to users Lack of cheat-proof concept Lack of monitoring Restricted usability Absence of intrinsic meaning and rewards Social impact not accounted for No increasing challenge and lack of community - GAMIFICATION –APM THAMES VALLEY BRANCH STUDY TOUR 2012

[60] Apps: H5P, PlayPosit, Recap, ESL Video, Seesaw,

[61] Apps: youaugment, ZapWorks, Bellintegrator, ARCore, AR.js, ARToolKit, DroidAR, OpenSpace3D, Vuforia, ARKit, Wikitude

[62] Quality Assessment for E-learning: a Benchmarking Approach - © 2012 EADTU https://e-xcellencelabel.eadtu.eu/images/documents/Excellence_manual_full.pdf

[63] Quality Assurance Toolkit for Distance Higher Education Institutions and Programmes ISBN 978-1-894975-34-6 - 2009

Support from IT and technical department or experts should be provided when necessary to the activities' designers to ensure the creation of effective e-learning.

Employability is one key element of SLPs, they should develop transversal / generic skills which are important to an online professional life: digital competencies (e-literacy, information literacy, e-communication and organisational skills).

Some examples of good practices of blended learning activities include:

- Pre-lab online theoretical study with F2F lab time: helps to empower learners, to boost learners' confidence, to concentrate on practical tasks.
- Flipped classroom: the topic is studied online and the F2F time is used for debates, questions: helps learners to prepare for live interaction, to reflect on the topic, to have more assurance to discuss a topic, to participate.
- Online problem solving with F2F assessment of solutions and exchange on the various results proposed by learners: helps learners to contrast ideas, to think critically, to review and discuss their results.
- F2F discovery activity with online forum: helps learners to reflect on their experience, to exchange with peers on alternative viewpoints.
- Online study with F2F support: helps learners who need it to have targeted support, to review acquired knowledge and skills.
- Online study with F2F visits or conferences: provides learners the flexibility of online studies with an opportunity to meet each other and to interact with professionals from their field.

The same care should be taken when designing blended learning activities than with a fully online SLP. The online part of the blended learning SLP should be interactive and focus on active learning. Within the scope of the E-SLP project, F2F time should only be used for activities which cannot be done online (need for specific equipment, space, practical experience, access to an expert) and an effort should be made to concentrate these activities in time and place in order to keep the SLP as flexible as possible.

ANNEXE 11

3.3. Contents and resources, supporting materials

"Resources should be linked with the task and the narrative and placed as the students need them. Therefore, resource-type folders or items, i.e. 'materials', 'resources', 'documents' should be embedded close to the task and they should align with the tasks. The assessment should also be aligned with these resources."[64]

External links and references should be chosen careful from known perennial sources.

Contents should be developed with contributions from experts in the academic subject area whether they are internal or external to the institution. They should be delivered in a variety of format (video, text, audio, etc.) to engage learners and insure the quality of the learning experience.

Experts in the academic subject area can develop content by re-using OER.[65]

They are "teaching, learning and research materials in any medium that reside in the public domain and have been released under an open license that permits access, use, repurposing, reuse and distributed on by others with no or limited restrictions"[66]

"These resources include materials of different granularity levels such as full courses, syllabi, course materials, textbooks, lessons, assessment, and simulation software; furthermore, these can have different formats such as web pages, documents, presentations, video streaming, images, and podcasts."[67]

[64] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice Chapter 9: Blended Module Design

[65] Examples of OER: www.oeconsortium.org/ - www.oercommons.org/ - https://curlie.org/Reference/Education - https://species.wikimedia.org/wiki/Main_Page . http://ocw.jhsph.edu/ - https://www.wikipremed.com/ - https://www.open.edu/openlearn/ - https://data.worldbank.org/ - http://www.fao.org/home/en/ - https://www.cabi.org/ - https://teacherswithoutborders.org/ - https://www.pbslearningmedia.org/ - https://www.oercommons.org/ - https://www.cccoer.org/learn/find-oer/ - http://www.unesco.org/archives/multimedia/

[66] D. Atkins, J. Seely Brown and A. L. Hammond , A review of the Open Educational Resources (OER) Movement: Achievements, Challenges and New Opportunities, The William and Flora Hewlett Foundation, 2007, pp. 1-84.

[67] Rosa Navarrete, Sergio Luján-Mora, Myriam Peñafiel. 2016 Third International Conference on eDemocracy & eGovernment (ICEDEG 2016)

3.4. Assessments

An assessment strategy is decided at programme level, at Learning building level the pedagogical team needs to design the assessments, which will evaluate if the intended learning outcomes have been achieved or not.

As mentioned before assessment can be an assessment -of, -for or -as learning. Assessment methods should be designed taking into account these parameters.

Amongst recommended types of assessments are: peer assessment, formative MCQ (designed by learners or by staff) for specific punctual knowledge check, self-assessment for personal guidance, continuous assessments, problem-solving activities, participation in online discussions, blogs or wikis.

Final examination can be a good practice when assessing skills or reporting on a project, to assess knowledge continuous monitoring of learners progression is advisable.

Independent learning can be assessed by learning diaries, by assessments that require learners to have developed certain skills or acquired certain knowledge to be able to pass them, by portfolios showing what learners have done. Thus introducing more flexibility into SLPs.

Assessment of informal learning can be made through reports, presentations, completion of subject matter related activities or assessments, appraisal of persons involved in learning, interview with the human resources directorate or senior representatives (or even with tutors) for professional learners.

Short learning programmes should have an assessment only option in order to recognise learners with prior informal or formal learning[68].

ANNEXE 12

3.5. Learners support

“Students may need: academic support; learning to learn (L2L) support; personal or social support; and technical support.”[69]

[68] Recognition issues with regard to SLPs - WP5 - 2019 - OUUK

[69] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice Chapter 11 Supporting Students and Staff

Each SLP should have at least one facilitator who is monitoring learners' experiences, able to intervene when necessary to give guidance and orientate learners and acts as a bridge between the pedagogical team and the learners. Depending on the context, the facilitator can be one of the tutors, teachers, professors, experts, community manager, etc. The facilitator should be made familiar with the topic learnt, the platform and technical issues and the academic policies. A common online pool could be made available with tutorials, academic data and general information to be shared between facilitators.

Assistance should be targeted in function of learners' needs and context. Because of the nature of SLPs support might include finding solutions to provide greater flexibility in the learning process. It could include, for example, implementing systematic alternative or remote solutions for F2F activities or proposing alternative activities to align learners' studying situation and programme requirements.

4. Assessment List For Existing SLPs

Self-assessment quality indicators for SLPs

THE SLP MUST BE...	MEASURE
... an educational programme with a sequenced set of courses (units, modules or other learning building blocks)	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 | | | | If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... with a common subject focusing on specific needs in society (can be market driven)	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 | | | | If score is equal t o 0 o 1 go to the Macro design section and review your SLP
... targeting mainly non-traditional and adult learners who combine work and study or learn for personal development.	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 | | | | If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... which are usually awarded with a (micro-)credential and can be used as	0 - Non-existent 1 - Must be improved

stackable elements of larger formal degrees	2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... are offered by higher education institutions (part of national higher education system and subject to accreditation at organisation level and/or at degree programmes they offer)	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... and are offered at higher education level. I.e., offered at the EQF levels 4 to 8 (foundation, bachelor, master and doctoral level)	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... have a study time horizon from 5 to 60 ECTS	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... have a relation to lager formal degrees of HEIs	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent

	0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Design Brief section and review your SLP
... have an online or blended learning mode	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Approaches section and review your SLP
... flexible and scalable	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Online learning approach and the Marco design section and review your SLP
... have clear and transparent learning outcomes that are aligned to the learning outcomes of the European Qualifications Framework (EQF)	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Education philosophy section and review your SLP
... must have aligned learning outcomes, activities and assessments.	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3

	<table><tr><td></td><td></td><td></td><td></td></tr></table> If score is equal t o 0 o 1 go to the Activities and Assessments sections and review your SLP
... be written in line with the cycle descriptors of the Framework for Qualifications in the European Area.	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent <table><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> If score is equal t o 0 o 1 go to the Education philosophy section and review your SLP
... undergo quality assurance processes in line with those of the institution producing them.	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent <table><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> If score is equal t o 0 o 1 go to the Quality assurance section and review your SLP
... be subject to quality assurance procedures in line with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent <table><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> If score is equal t o 0 o 1 go to the Quality assurance section and review your SLP
... have clear and transparent assessment methods to assess achievement of the learning outcomes.	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent <table><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr><tr><td></td><td></td><td></td><td></td></tr></table> If score is equal t o 0 o 1 go to the Quality assurance section and review your SLP

...be awarded by national HE institutions and offer a guarantee at academic level.	0 - Non-existent 1 - Must be improved 2 - Adequate 3 - Excellent 0 | 1 | 2 | 3 If score is equal t o 0 o 1 go to the Credentialisation section and review your SLP
THE SLP CAN BE...	
... be recognized and preferably be accredited.	
... have an assessment only option in order to recognise students with prior informal or formal learning.	
... be designed between different partners	
THE SLP CANNOT BE...	
... a single course/unit nor just a MOOC	
... a full degree like bachelor or master degree	
... related to vocational trainings but focus on academic level (but of academic level)	

5. Conclusion

These guidelines present a set of key issues and concerns regarding the design of a Short Learning Programmes. They have been produced as a practical tool which can support teams involved in the development of new programmes, including university members and main stakeholders (e.g. graduates, employers, representatives of professional bodies, etc.). They follow a certain chronological logic of decisions that helps build a robust programme. They also point to concurrent matters that intersect one to the other.

The guidelines support two distinctive approaches to programme design: from scratch, where the programme is completely developed from the start, or based on the metaphor of a puzzle, where the effort focuses on matching existing learning building blocks into a coherent proposal. These approaches can be interpreted into a continuum where Short Learning Programmes may result on a combination of both.

Two main blocks organised the guidelines differentiating the macro design of the programme structure and its main components, and the micro design of its constituents, the learning building blocks. The macro design relates to needs analysis, strategic development, general educational philosophy, program structure, quality and credentialization. The micro design deepens into concrete learning and assessment activities, and facilitation.

We expect that these guidelines contribute to the development of new European inter-institutional programmes that respond to the growing demand for lifelong learning and the up skilling of the European labour forces required to perform within a regional and globalised world.

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ANNEXE 1

BRIEF DESIGN TEMPLATE

CONTEXTUAL ANALYSIS	**RATIONALE**
Which are the actions already made?	
What are the constraints of the project?	☐ Institutional policies: ☐ Legal issues: ☐ Pedagogy agreement: ☐ Accreditation and recognition requirements: ☐ Quality assurance (QA): ☐ Management issues (human resources management - strategic management - finance management, etc.): ☐ Agenda: ☐ Technical imperatives: ☐ Technical limitations: ☐ Others constraints:
Which known means are available to create the SLP?	☐ Learning environment: ☐ Available technologies: ☐ Resources: ☐ Staff/Internal experts: ☐ External experts or collaborators: ☐ Others:

What are the detected needs for this SLP?	☐ National needs: ☐ Regional needs: ☐ Institutional needs: ☐ Global trends: ☐ Societal needs: ☐ Market needs: ☐ Other needs:
Which is the Collaboration history of the partners?	

PROJECT PRESENTATION	**RATIONALE**
How many ECTs will the SLP amount to?	
In which language(s) will it be delivered?	
Which EQF level will it have?	
Are there any prerequisite necessary for enrolment?	
Will it be online or blended learning?	
What is the context?	
Where there any surveys or studies carried out on learners needs?	
Is there any available learners feedback on similar programmes?	
What are the general aims of the SLP?	

Which target group(s) ha(ve)s emerged as focal point?	
What kind of learners the SLP is targeted for (e.g. adult, non-traditional)?	
When should the SLP be ready for?	
Which format should the SLP take? (Practical learning, collaborative and peer learning, project-based, independent learning, problem-based/inquiry-based, content-based, more than one format ...)	
How will quality be controlled?	

ANNEXE 2

MACRO DESIGN TEMPLATE

SLP OUTLINE	RATIONALE
How many ECTs should the learners be rewarded for coursing the SLP?	
What are the SLP's aims?	
How will the SLP be sequenced?	
How can the target group be conceptualised into model-learner?	
What should the curriculum contain?	
How will the curriculum be integrated to the real world?	
Which methods will be used for identifying the competency needs[70]?	
Which are the intended learning outcomes learners should be able to do by the end of the SLP?	
How will learning be assessed?	

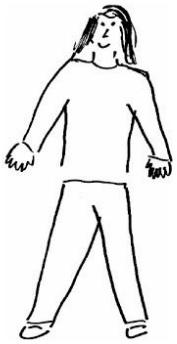
AIMS	RATIONALE
What does the SLP prepare the learner for?	
In which area will learners develop competencies in the SLP (general)?	
Which is the general teaching coverage of the SLP?	
What is the content of the SLP? [71]	

[70] A workbook for the joint planning ofcompetence modules - AVOT project - Creative Commons - http://avothanke.fi/wp-content/uploads/2018/10/workbook.pdf

[71] O'Neill, Geraldine 2015 - Curriculum Design in Higher Education: Theory to Practice "Programme aims [....] can be written as follows: The programme: - prepares students to/for.... -develops competences in the areas of.... -provides students with. In practice, examples of programme aims are usually in the region of 3-4 broad aims."

ANNEXE 3

Persona Card - Learning Design

	**Name:** **Gender:** **Age:** **Lives in ... with ... Likes ...**
Education and experience	
Role and responsibilities	
Technical skills	
Subject domain skills and knowledge	
Motivation and desires	
Goals and expectations	
Obstacles to their success	
Unique assets	

ANNEXE 4

COMPETENCES TEMPLATE

COMPETENCES	**RATIONALE**
Which is the competences need related to the market?	
Which is competences need related to the topic?	
Which is the competences need for the target group?	
Which are the skills necessary to reach the selected competences?	
Which knowledge is necessary to reach the selected competences?	
Which are the attitudes necessary to reach the selected competences?	
Are some of the selected competences included in the Key competences highlighted by European Reference Framework?	
Which methods will be used for identifying the societal competence needs related to the SLP?	☐ Interviews ☐ Surveys ☐ Company visits ☐ Social media ☐ Workshops ☐ Collaboration with other projects ☐ Foresight reports ☐ Job offer ads ☐ Other methods:

ANNEXE 5

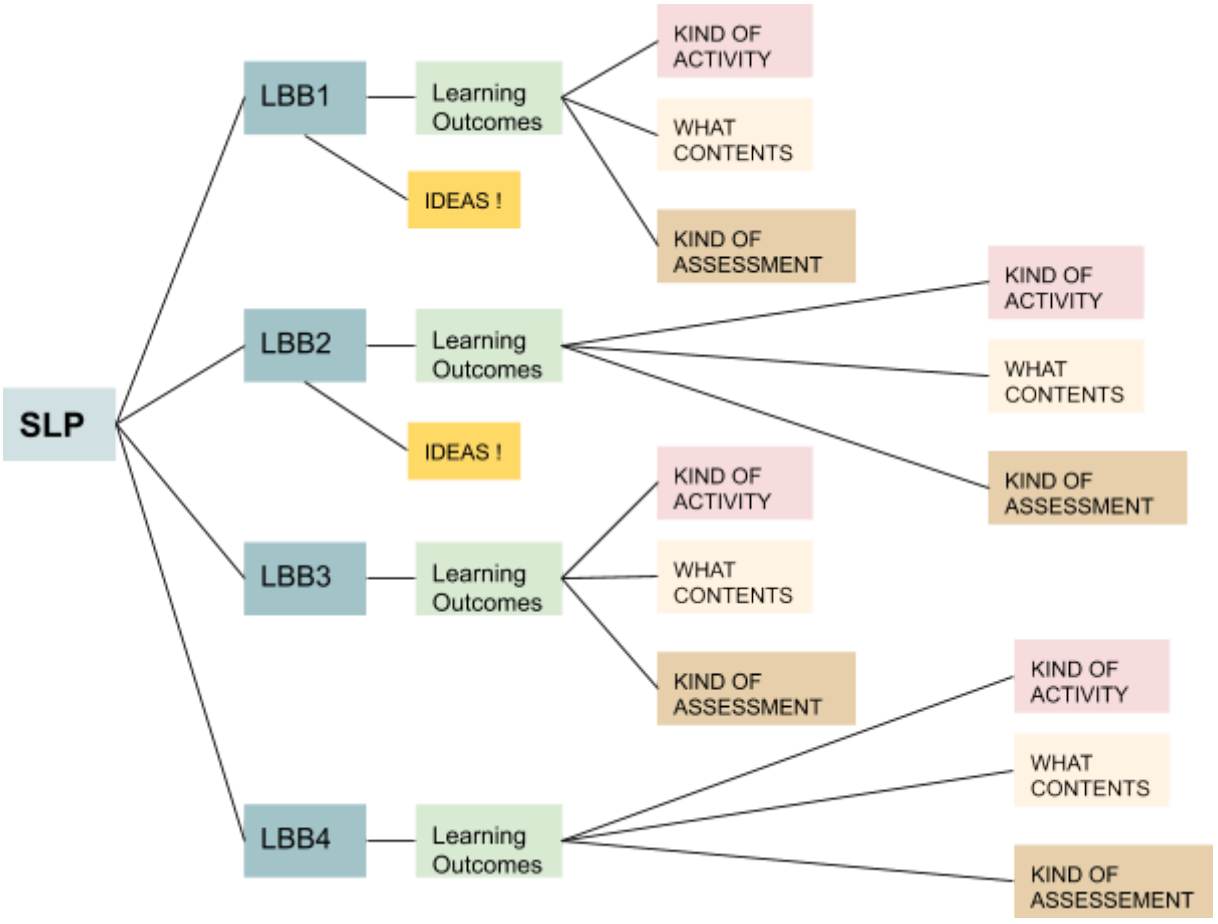
CORRESPONDENCE TEMPLATE

Start filling in this template during a brainstorming session at the beginning of the Macro design process and carry on adding elements as you advance in the design process.

COMPETENCES	**LEARNING OUTCOMES**
ACTIVITIES	**ASSESSMENT**
PLATFORM NEEDS / TOOLS	

ANNEXE 6

EXAMPLE OF SLP CONCEPT MAP



ANNEXE 7

Template for pilots survey - Co-designing for online and blended learning

To be filled in based on the answers from the table below

	Question	Answer	Respondents (contacts)[put here for each university the responsible people you need to contact and/or have contacted]
1	Describe the objectives of the collaborative SLP (including in economic, social and cultural terms) in relation to the needs analysis in the field(s) concerned.		
2	To what extent is the collaborative SLP offer justified, and how is it linked to identified needs in a European context?		
3	Present the structure and content of the SLP and justify the added value and relevance of the (virtual) mobility component.		
4	What will be the course structure and main teaching topics?		
5	To what extent do the course topics/structure/modules justify their relevance in relation with the course objectives and the needs of the field(s)?		
6	How is the students' mobility relevant and instrumental to the course's purposes? If applicable, explain how the internship / placement / fieldwork activities fit in the joint course model and objectives.		
7	Justify the learning outcomes relevance in view of the students' future academic opportunities (e.g. at bachelor and master level) and employability.		
8	Which institution takes the lead?		
9	Proposed study level		

10	Justify the relevance of the partnership's composition and the expertise of the key academic staff involved to achieve the SLP objectives.		
11	What are the different fields of expertise of individual partners, and how are these complementary and of added value in the context of this joint and international SLP?		
12	What is the profile of key actors (administrative and academic staff) in the SLP implementation (provide short and targeted information)?		
13	How will invited experts eventually contribute to the course?		
14	Explain the SLP's interaction with the professional socio-economic / scientific / cultural sectors concerned. What types of interactions exist between the SLP and non-educational actors of the sector concerned?		
15	What type of involvement, if any, do these actors have in the course implementation (course evaluation, internship/placement providers, financial sponsors, research providers, employment perspectives, etc.)?		
16	What is their degree of commitment to the course?		
17	Could you describe the collaboration process, step by step? (**It is important to give a detailed account of the process you followed as it will be used to write the guidelines for the design of future SLPs**) These are a few pointers you might find useful: - How did the project originate? Why did you decide to engage in the specific SLP (criteria, e.g. : market demand, expertise, institucional policy, etc.) ? - Is the programme related to other existing programs (part of, requirement for, type of recognition, etc.)? - How did you prepare your first meeting? (did any documents / draft come out of it?) - What kind of decisions were taken at the first meeting (educational model/approach -blended/online, competency-based, etc-, learning strategies/instructional approach, learning and assessment activities, learning resources, technology etc.)?		

	- Are your design decisions supported (influenced) by specific institutional methods, patterns, policies? - How did you organise/distribute the workload? - How do partners collaborate? (do you use any collaborative tools?) - How did you detect, select and use or adapt existing LBBs? - Did you decide to develop LBB from scratch? Why?		
18	What problems (if any) did you encounter? How did you deal with them?		
19	If the SLP is facilitated how did you organise it? Who is responsible for it?		
20	Marketing (centralized? distributed?)		
21	Enrollment (centralized? distributed?) (formal access requirements) Payment (centralized? distributed?)		
22	Delivery platform (centralized? distributed?)		
23	Facilitation (teaching online) (centralized? distributed?)		
24	Scalability (possibility to add sessions? facilitators? etc.)		
25	Accreditation		
26	Recognition (existing programs)		
27	Will it be included as a block of learning in an existing programme in your university?		
28	What is estimated workload for facilitator?		

Links to live survey:

https://docs.google.com/forms/d/e/1FAIpQLSdznuf7-jpFbeMJV9CqNFtmdFqWqbaUswRpHeJdVhYTLZvYyg/viewform
https://docs.google.com/forms/d/e/1FAIpQLSdznuf7-jpFbeMJV9CqNFtmdFqWqbaUswRpHeJdVhYTLZvYyg/formResponse
https://ec.europa.eu/jrc/en/digcompedu

ANNEXE 8

IMPLEMENTATION TEMPLATE

VLE	**RATIONALE**
Which will be the order of study periods, if any?	
What will the schedule be?	
Which will be the amount of contact teaching?	
What is the time frame?	
When is the SLP scheduled for?	
Will there be more than one edition a year or will it be ongoing?	
How will learner communicate with the pedagogical team?	
Will there be a facilitator, a community manager or will professors in charge of communication and learner support?	
Will learners be in contact with external stakeholders?	
If so, via the platform or outside the VLE?	
How will credits be earned?	
What is the registration procedure?	
Which tools (internal and external to the VLE) will be necessary?	
Will learners need access to any external tools and applications?	
Which access will they need?	

ANNEXE 9

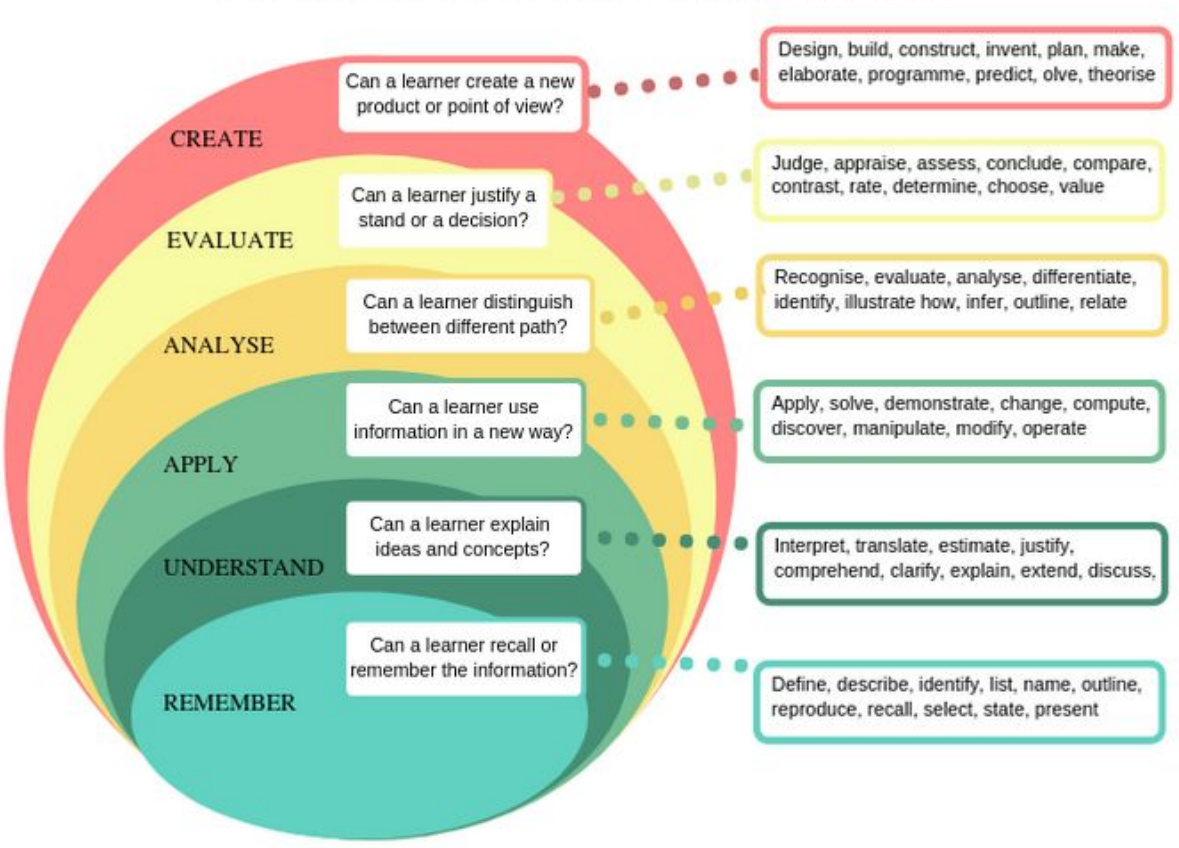
INTER-INSTITUTIONAL IMPLEMENTATION TEMPLATE

INTER-INSTITUTIONAL IMPLEMENTATION	RATIONALE
What are the key differences between universities and how to ensure a smooth operation between different systems (for example, electronic systems, registration procedures, ways to organise teaching)[72]?	
Will there be one common platform for the SLP or each LBB will be hosted on different platform?	
How will the fees be charged and divided between the institutions?	
How will the coursed and validated LBBs be communicated to the system if there are all in different platforms?	
How will the students register (to each university separately or to one joint university, registration schedule)?	
Which partner will (will all the partners?) recognise and issue a certificate and ECTs?	
Will they be a inter-institutional certificate? How will study progress be communicated (mutually?) to learners?	
Who will be responsible for solving learners issues?	
Will the feedback to learners be given mutually or will one partner be responsible for the academic communication?	
Will there be a common facilitator / tutor / community manager if the LBBs are in each partners platform?	
Is there any restrictions (technical, policy, etc.) to give access a facilitator / tutor / community manager to the entire platform when the SLP is hosted on different VLE?	
Will, and if so how, designers and learners have access to learning materials from partner universities' libraries? Will the costs be shared between partners?	

[72] 4. Planning the implementation http://avothanke.fi/wp-content/uploads/2018/10/workbook.pdf

ANNEXE 10

INTENDED LEARNING OUTCOMES TEMPLATE



ELEMENTS	
Verb	
+ On what or with what	
+ Context	

Vocabulary for Writing Learning Outcomes

Knowing: Define, describe, identify, label, list, name, outline, reproduce, recall, select, state, present, be aware of, extract, organise, recount, write, recognise, measure, underline, repeat, relate, know, match.

Comprehension: Interpret, translate, estimate, justify, comprehend, convert, clarify, defend, distinguish, explain, extend, generalise, exemplify, give examples of, infer, paraphrase, predict, rewrite, summarise, discuss, perform, report, present, restate, identify, illustrate, indicate, find , select, understand, represent, name, formulate, judge, contrast, translate, classify, express, compare.

Application: Apply, solve, construct, demonstrate, change, compute, discover, manipulate, modify, operate, predict, prepare, produce, relate, show, use, give examples, exemplify, draw (up), select, explain how, find, choose, assess, practice, operate, illustrate, verify.

Analysis: Recognise, distinguish between, evaluate, analyse, break down., differentiate, identify, illustrate how, infer, outline, point out, relate, select, separate, divide, subdivide, compare, contrast, justify, resolve, devote, examine, conclude, criticise, question, diagnose, identify, categorise, point out, elucidate.

Synthesis: Propose, present, structure, integrate, formulate, teach, develop, combine, compile, compose, create, devise, design, explain, generate, modify, organize, plan, re-arrange, reconstruct, relate, re-organise, revise, write, summarise, tell, account for, restate, report, alter, argue, order, select, manage, generalise, precis, derive, conclude, build up, engender, synthesise, put together, suggest, enlarge.

Evaluation: Judge, appraise, assess, conclude, compare, contrast, describe how, criticise, discriminate, justify, defend, evaluate, rate, determine, choose, value, question[73].

Creation: Design, build, construct, invent, plan, draw, elaborate, make, programme, film, animate, blog, mix, remix, combine, wiki-ing, publish, podcast, videocast, direct, produce, adapt, change, compose, create, develop, formulate, imagine, improve, maximise, minimise, modify, review, originate, predict, propose, solve, test, theorise.

[73] Linking Levels, Learning Outcomes and Assessment Criteria – EHEA version - Jenny Moon, Bournemouth University, UK - Feb 2007

ANNEXE 11

A few recommended Tools and Applications

E-portfolio
Evernote
VoiceThread
Edublogs
Weebly
WordPress
Google Sites
Mahara

Game-based activities
Superbetter
Habitica
Chore Wars
Scratch
Epic Win
Gameblox
MineCraft
GooseChase
Classcraft
Aris
Breakout EDU
UDK
Quizizz
Unity

Interactive video
H5P
PlayPosit

Augmented Reality
Youaugment
ZapWorks
Bellintegrator
ARCore
AR.js
ARToolKit
DroidAR
OpenSpace3D
Vuforia
ARKit (apple)
Wikitude

ANNEXE 12

LEARNING OUTCOMES / ACTIVITIES / ASSESSMENT ALIGNMENT TABLE

Use this table to check that all learning outcomes have been studied and assessed.

	Activity name	Assessment name	Activity name	Assessment name	Activity name	Assessment name
Learning outcome 1						
Learning outcome 2						
Learning outcome 3						
Learning outcome 4						
Learning outcome 5						
Learning outcome 6						

European Short Learning Programmes

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