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Custom Learning through Innovative Methodologies and Blended training

CLIMB

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Small-scale partnerships in vocational education and training

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A2 Analysis of custom e-learning, blended learning and benchmarking methodologies

REPORT of ACTIVITIES

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1. Introduction

This report presents the overall outcomes of the phase A2 of CLIMB Project, *"Analysis of custom e-learning, blended learning and benchmarking methodologies",* on identifying practices and methods that are current used within the field of customized e-learning and blended, starting from the three target countries Denmark, Italy, and Greece. The consortium of the CLIMB project, through this preliminary step, want to better understand the dynamics of learning processes based on custom e-learning. This, in order to bring the partnership to conscious design choices that can simultaneously be concretely effective, but also innovative.

Consistently with the provisions of the project, the analysis is configured as research and benchmarking activities in the field of custom e-learning, of blended and tailor-made teaching methods and strategies, at present and with reference to international and contextual literature and sources of information, practical cases and best practices in the sector, platforms and dedicated technological tools, contents and methodologies, approaches, and categories of recipients. The outcomes of the different tasks carried out are the fundaments for the proposed methodology about the identification of innovative and flexible, customized, and blended training models, therefore the inputs for continue the project.

The report summarizes the results achieved in this starting phase; it is structured in five sections:

1) Methodology
2) Sources of information and literature analysis
3) Desktop market analysis
4) Survey and interviews
5) Results as main pedagogical recommendation for continuing the CLIMB project in following phases, analyzed in the logic of a single country, and then compared and reworked in a common European logic.

The analysis done is fundamental to define the state of the art of custom eLearning in relation to the objectives and activities of the project, but also of the desirable future applications in each partner company and in other European context.

Online and digital training, in the last years and above all following the global closure from Covid and the new widespread habits, has taken on ever greater importance and today it affects all levels of education, from school to specialist training courses. The concept of e-learning has taken on a broader meaning and no longer refers only to "way" of training but, in general, to the complex knowledge management system, communication and interaction processes and skills development mechanisms. In this sense, e-learning represents **a new paradigm of individual and collective learning enabled by technology but not determined by it**. **Therefore the "personalization" aspect is fundamental, considering that e-learning is a complex process that combines content, technology and cognitive aspects, these the latter closely linked to the teaching methodology**.

In fact, e-learning today is intended as a training path through the activity of relationship, interaction, multimedia, and interactivity, with the aim of being able to create an educational path mediated by technology. So, it's wrong if it thinks of e-learning as a simple online platform: a container of information. The key point from which it is good to start is the concept of **student-centered learning**, or the idea that with e-learning training is centered on the learners, with the aim of transforming them from simple "users" to authors (at least in part) of the learning path; focusing attention on it. A view of this type aims

to help learners manage courses according to their needs and improve training, also respecting the different learning times. *This is the reason why of the customization!*

From the analysis emerges that custom e-learning is increasingly present, both at an academic and corporate level, despite a clear description and classification of it has not yet been established. It was found that e-learning operators, in particular those targeting the "business" market and making vocational education and training, are working more and more in a logic of *custom e-learning*, considering the organizational, technological and market changes and an extremely complex, competitive and hyper-connected context.

2. Methodology

The A2 activity entitled "*Preliminary research, study and benchmarking activities in the field of custom e-learning, blended teaching methods and strategies and tailor-made*", has involved all partners of CLIMB project and Action Synergy AS as leading organization, both for the purpose of an in-depth study of their own context and of a broader international one, aimed at acquiring data and case studies to be analysed.

The activities **took place from March 2022 to October 2022** and coherently with the provisions of the project, envisaged two operational tasks:

Commentato [CO1]: @Giorgia Petrotta November?

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1. *Definition of the analysis model and implementation of the research activity*: detail of technical aspects, methodological aspects, financial aspects, and summary of the results.
2. *Data acquisition*: desk analysis, qualitative analysis e.g., interviews with stakeholders and trainers, benchmarking activities, comparison between international contexts.

From a methodological point of view, it was a qualitative research approach, with the aim to better understand the practice of customized blended learning. CLIMB'S qualitative research involved collecting and analysing non-numerical and structured data to understand concepts, opinions, or experiences. We used it to gather in-depth insights into the research's topic and to generate new ideas to help companies to implement a more productive and efficient way to implement blended learning, furthermore, to continue with the Climb project implementation.

Then an Analysis Model based on qualitative research forms was shared and implemented, including:

1. **Literature Review:** analysis of International and contextual literature and public sources of information, to identify information and useful advice; the study was based on precise and targeted search keys, defined following an initial partnership brainstorming in order to standardize the methods of searching for data on the web:
   - *Effectiveness of eLearning*
   - *Source of Contents: where to find them*
   - *Case study of Method: Custom learning path not only contents*
   - *Tools available (AI, YouTube, MS Teams, Classroom etc.)*
   - *Examples of Best practice of cheap eLearning*
2. **Desktop market analysis or Context analysis** (Italy, Greece, Denmark): analysis of free and open source of information and web, to identify case studies and best practices in the sector, as a completation the step 1.
3. **Interviews** addressed to sector operators identified in point 2 of the research: open and unstructured interviews (N°9 interviews, N°3 interviews for each target country) with the aim of analyzing the following aspects of Custom e-learning:

1) *Custom eLearning courses mean that they are tailored exclusively for a specific organization?*
2) *How to keep in mind the learning needs of employees and workers?*
3) *Which role for organization's culture and tone?*
4) *Flexible vs standard learning path?*
5) *How to improve personal and tailored learning experience?*
6) *Which models, technologies and digital learning?*
7) *Create new contents vs. use free contents?*

3. Literature Review

The literature reviewed was guided by five key words: blended learning, effectiveness of e-learning, source of content, digital tools for implementing eLearning and best practices of low-cost eLearning initiatives.

Each partner did a search of literature and selected relevant literature for the project.

The literature review included not only academic articles, but also blogs and podcasts from business leading the e-learning and learning and development in general. Those selected pieces of information were analysed and summarized by each partner and the inputs were gathered in a common document (*Appendix n°1*).

The synthesis of this first phase of analysis is represented by a summary of the content and references, European and non-European, with related links and details of the elements of interest with respect to the CLIMB project, aimed, as we know, at the identification of a blended model flexible custom e-learning, with a sustainable cost, methodologically innovative and replicable in several areas, in particular at a European level.

One of the first outcomes of the literature review was to adopt a definition about "*Blended Learning*" for the project.

As Asharft et al. (2021) indicates there are many different terms to refer to blended learning approach *"brick and click" instruction, hybrid learning, dual-mode instruction, blended pedagogies, HyFlex learning, targeted learning, multimodal learning and flipped learning"*.

These variety of blended learning definitions provides a source for creativity and innovation, as well as flexibility to adopt the more convenient approach for the organizations.

Within the project we have chosen to work with the following definition of blended learning:

"*Learning that happens in an instructional context which is characterized by a deliberate combination of online and classroom-based interventions to instigate and support learning. Learning happening in purely online or purely classroom-based instructional settings is excluded*" (Boelens et al., 2015, p. 2).

In the following section we present **some of the main categories emerged from the literature** review that are relevant for the project purpose, *related to*:

1) Learning approaches
2) Developing and implementing e-learning initiatives
3) Method for Customization
4) Content
5) Digital technologies and eLearning trends
6) Providers
7) Training vs education.

Commentato [CO3]: @Giorgia Petrotta @ACTION SYNERGY @Massimo Plescia Please, check that we agree with this definition. If not, we can decide to use the definition given by Ashart.

Commentato [GP4R3]: @CONSUFE' I think it's perfect for us

1) Related to *learning approaches*

How people learn and how to facilitate learning are the key questions that learning designers should deal with. The answers to these questions will be reflected in the quality and success of blended learning courses.

In the work of *Margaryan* et al (2015) they recommend ten instructional design principles to promote learning in Massive open online course (MOOCs):

1. Problem-centred –learners acquire skill in the context of real-world problems.
2. Activation: learners activate existing knowledge and skill as a foundation for new skill.
3. Demonstration: learners observe a demonstration of the skill to be learned.
4. Application: learners apply their newly acquired skill to solve problems.
5. Integration: learners reflect on, discuss, and defend their newly acquired skills.
6. Collective knowledge: learners contribute to the collective knowledge.
7. Collaboration: learners collaborate with others.
8. Differentiation: learners are provided with different avenues of learning, according to their need.
9. Authentic resources: learning resources are drawn from real-world settings.
10. Feedback: learners are given expert feedback on their performance.

Furthermore, of *Kaplan and Haenlein* (2016) indicates that *students' motivation* is a key element for success of e-learning initiatives. Motivation is related to:

- Commitment (the given teaching content should be important for the student)
- Challenges (overcoming certain types of problem motivates students)
- Control (students should be kept under tight control)
- Novelty (the actuality of teaching content is important for students)
- Competition (tin-course competition among students improves motivation).

We found that a self-study approach is the most common in e-learning practice, but it does not touch upon meaningful and transformative learning. *Approaches such as student centered e-learning* (active learning methodologies and strategies, such as problem/project-based learning (PBL) and challenge-based learning) are recommended for blended and e-learning, however they demand more resources and time.

Methodologies such as PBL facilitated customization and relevance for the own companies' needs. A concrete approach to applying PBL within the e-learning is called "Scenario-based eLearning", which uses interactive, simulated, problem-based virtual situations to teach certain skills.

Galhotra (2022) defines scenario-based learning as:

"*an eLearning training method where life-like scenarios are created using digital media to give context to training content and make the topics more relatable. This training method has also become popular due to its ability to increase learner engagement and retention*".

This instructional design approach emphasizes on context instead of content (*Hurix*, 2019). The benefits of this approach are: it is pragmatic, employee-centric, interactive tactic, promote critical thinking, encourage decision making, provides constructive feedback, triggers instinctive behaviour.

It was also identified the use of the concept of Learning paths (*Hurix*, 2020), which allows learners to personalize their learning pathway according to their needs and desires.

2) Related to *develop and implement e-learning initiatives*

It was clear that well-known eLearning organizations and researchers recommend a set of steps for successful blended learning and eLearning initiatives. There are variations about recommended steps however most of them include identification of learning needs and learning goals, selection of learning activities, creation or selection of content, implementation in a LMS tool, and evaluation (*Hemmer*, 2018). Furthermore, it trendy to use the human centered design approach, where a design mindset is applied and focus on understanding the users (*Movchan*, 2020).

Boelens et. al (2017) describe *four challenges* to design effective blended learning courses: 1) incorporate flexibility, 2) facilitate interaction, 3) facilitate students' learning processes and 4) foster an effective learning climate.

Increase flexibility implies that the learner has some level of control related to time (using asynchronous communication and activities), place (the learner does not need to be in a specific classroom), path (order in which progress in the content) and pace (own speed when studying the material). The learning designers can play with those four aspects to increase the flexibility in blended learning courses.

Facilitate interaction: as participants are not physical in the same place neither connected at the same time, it is important to resolve the question about how to facilitate interaction (two ways communication between facilitators-Learners and between learners) in blended learning environments. Some studies recommend start the courses with face-to-face meetings in order to enhance community building and social bounds.

Facilitate students' learning processes: this aspect related with the fact that in blended learning environments, learners need self-regulation skills for successful participation, such as organization, discipline, time management, objective definition, therefore, it is important to help learners to develop those self-regulation skills. Therefore, the courses should consider activities related with Orienting and planning (knowing prior knowledge, define learning task, time constraints) , Monitoring (observe whether the learning processes is progresses according with the plan), Adjusting (change the initial learning plan on basis of the results of monitoring activities), Evaluation (judge the extent to which the learning goals are achieved.

Effective learning climate: research shows that learners might feel isolation during blended learning courses, which can lead to high drop-out rates or lack of motivation. Therefore, it is important to design learning blended environments that make sure that learners feal safe, accepted and value, and promotes positive attitudes towards the course and instructors, to increase motivation, creativity and well-being.

3) Related *to Method for Customization*

Many of the articles / blogs provide useful information for the creation of custom courses, both from the point of view of the didactic contents and the methodological path to follow. Everything starts from the training needs of the target. Personalization is a way to adapt the content and training experience to these needs and client engagement can play an important part in the success or failure of a custom project. *With a personalized path, the student can freely decide when, how and what to learn with clear training benefits*. The point is how to customize an online course without losing sight of the training objectives and in the less expansive way.

Lovold (2022) gives some recommendations to customize e-learning courses:

- Provide access to massive learning library that is relevant for the learners. This is related to curate learning content which is discussed in the next sections
- Offer content in multiple formats empower the learners

- The learning process is social, therefore, providing visual and physical space help the learning experience
- Incorporate instructor-led training. Incorporating video conferencing, chat and direct feedback features makes learning accessible and inclusive
- Provide ways for the learner to measure and see their learning progress and outcomes.

4) Related to *Content*

There are many varieties of media formats for e-learning and blended learning courses: audio, video, interactive boards, pictures, infographics, text, simulations, etc. The most important aspect that we found about content, is that it should be able to support the engagement of the learners and that courses should provide different formats of content presentation.

Furthermore, it was possible identified the organization create or curate content. Content creation refers to the process of creating your own content from scratch. All the content is created by the internal designer team. While content curation is the process of gathering existing information from different sources and organizing them in a way that learners will get only what is important for their learning process.

When it comes to create content, companies need to set clear expectation, target group and the learning goals well defined (*Pappas*, 2021). The same aspects are equally important when it is about curate content, however, there is an extra consideration, as the curation process should deal with adapt the content to the learning goals.

It was possible identify many online repositories such as www.merlot.org , www.oercommons.org , www.creativecommons.org. These resources are either freely available or can be used under a Creative Commons license.

We decided to explore deeper the concept of content curation as there is a lot of high-quality material available to be used training activities, as the creation of content is very expensive, this activity of content curation is very relevant for small and medium-sized companies.

Aguilar-Pena et al. (2022) present some definitions for the concept of content curation, for example: "*the interactive act of investigating, finding, filtering, organizing, grouping, integrating, editing, and sharing the best and most relevant content on a specific topic in a significant online digital collection, which could be important for a group of people whose sense of learning can be updated around this topic.*"

Aguilar-Pena et al. (2022, p. 3) summarize a **methodology to carry out the activity of content curation and the possible technologies to be used** (this methodology was developed by other researchers):

STEP	TECHNOLOGY THAT COULD BE USED
Search: Pick a topic Discover content sources Find and collect quality content to share	Google, Scientific, Pinterest, BagTheWeb, Feedly, Pearltrees, LinkedIn, Summify, Storify, Instapaper, Delicious, Bitácoras, RSS alerts, MktFan, and IEEE
Select: Classify the contents Choose relevant, credible, diverse, unique, and validator (that serve to validate or support a point of view) content	Pocket, Drive, Diigo, Evernote, Clipboard, and List.ly
Sense Making: Organize and editorialize the content. Annotate the content and add value by comments, retitling, summarizing, etc	Scoop.it, Paper.li, Noowit, Flipboard, Dragdis, and StumbleUpon

STEP	TECHNOLOGY THAT COULD BE USED
Share: Determine where to share the content: social media, e-mails, web pages, etc.	Facebook, Google+, Twitter, ContentGems, Buffer, and Reddit

They go further and describe some of the tools for content curation:

- **Feedly** is an RSS reader that allows users to quickly organize and access all news and updates of blogs and pages
- **Pocket** is a computer application and web service that allows the user to manage reading lists obtained from the Internet. It allows for temporarily storing information found during searches and sharing it with other members of a work group
- **Evernote** is a computer application with the objective of organizing personal information in an easy and agile way by means of note files, lists, and screenshots
- **Scoop.it** is a web tool for disseminating news and content in an easy, agile, and interactive way. It allows users to participate with comments and suggestions through social networks. It is a tool of sense making in the content curation strategy
- **Google+ and Current** are work corporate social networks created by Google. They allow users in an organization to share information and collaborate with members of a team. You can exchange valuable information with other communities, conduct surveys in your organization, share posts, and much more.

We see content curation as a relevant process that would benefit highly the customize blended learning practice.

5) Related to *Digital technologies and eLearning trends*

We found great variation of technologies used with the blended and eLearning practice. It goes from basic websites with content in the form of text to very advanced emerging technologies, such as the use of artificial intelligent for personalized learning, gaming technologies for game-based learning, virtual and augmented reality, AI-powered learning, learning analytics, mobile learning, and cloud computing (*Singh*, 2019).

Learning management systems (LMS) continue been the most common format to delivery courses, however, there is a trend to see LMS as learning experience platforms.

There are six trends to consider in the field of e-learning and blended learning (LinkedIn, 2022):

Mobile learning: Mobile learning, also referred to as mLearning, is a way of accessing learning content through mobile devices. This method empowers learning at the point of need, enabling users to access content whenever and wherever suits them. The most important element of mobile learning is its focus on the mobility of the learner.

Micro-learning: the concept of microlearning is take relevance within the eLearning practice. It is defined as "*a training format where learning content is divided into short focused single topic segments. This format has become popular due to its ability to increase knowledge retention and its versatility. Many learners prefer this format because it makes it easier for them to fit training into their schedules*" (*Galhotra*, 2022).

Adaptive learning: "It is an educational technique that is usually performed by way of established algorithms and assessments as well as artificial intelligence in order to *provide individually customized*

content to each learner. Rather than offering a one-size-fits-all learning experience, it addresses the unique needs of a student".

Social learning: "It is all about the constant exchange of knowledge between group members and guidance, which helps students learn the material much better and faster. Social learning in eLearning can have two different streams, namely direct and indirect social interactions between students. Direct contact implies personal communication (for example, a conference in Zoom), while indirect contact implies correspondence on social networks, via e-mail, and so on" (*Cujba*, 2021).

Video Learning: It is an interesting e-learning technique that allows its audience to acquire skills and gain knowledge via video.

Gamification: It is an educational approach that motivates students and help them engage with their training content by showcasing it as a playing material. The main motive of gamification is to maximize learning through enjoyment.

6) Related to *Providers*

It was possible identified that if companies don't develop their own eLearning courses, they have mainly two types of providers: outsourcing (a third party that will develop the course specific for their needs) and MOOCs (providers of courses that are the same for all type of companies) such as LinkedIn Learning, Coursera, Future Learning, Udemy and Microsoft Learning. It is possible to identify a grow of those MOOCs providers. Some of those MOOCs providers publish high quality online teaching content for free access, but participants must pay inf they want a certification of their studies (*Poór* et al., 2020).

In this link it is possible to see the list of MOOCs platforms around the world, updated in 2022: https://www.classcentral.com/report/mooc-platforms/

7) Related to *Training vs education*

There are different between *corporate learning and the educational sector*. The objective of corporate learning is to make sure that employees develop the knowledge and skills required for specific tasks in the organization. While the educational sector, is, as the name indicate, a process of longer process of education, therefore, their learning designs are different. For example, within the corporate sector the courses are shorter and use more emerging technology than in the educational sector. In academia there are more application of learning theories.

According with *Poór* et al (2020), Elearning in the corporate sector require different methods than in setting like universities where the students are very young adults without experience. In the corporate sector it is necessary to learning approaches within the framework of andragogic (adult education), where teaching has to be built work and life experiences, hands-on and practical problems.

There is also a clear dissimilarity between large and small and medium-sized companies, the last ones have more difficulties to invest resources to develop elearning initiatives of good quality (*Poór* et al., 2020).

4. Desktop market analysis

The second main task within the Activity 2 was a desk study of relevant cases of companies implementing eLearning, custom and blended learning in Denmark, Italy and Greece.

It was decided that the study should include: name of the company, website, description, target group, training field, methodology use to design e-learning, pedagogies, technologies, type of blended learning and specific inputs about customised learning.

Follow the summary of the study conducted in each territorial context.

The details of the study can be found in the *Appendix N°2 – Desktop market analysis*.

DENMARK

The **Danish** team decided to search for cases related to different sectors: public institutions, small and medium sized companies, non-profit organizations, and courses provider organizations. The aim was to cover examples of different context where eLearning could be practiced. In the case of the three first type of organizations, their core business is not training, they develop eLearning courses to fulfil their own human resources development needs. While the fourth category of companies, they are dedicated to produce and sale courses (in different modalities). After a general search within these four categories, some specific cases were studied in detail (see Table 1). The selection of the cases was made based on the availability of information in their website.

Public institution	SMEs	Non-profit	Courses providers
Region Hovedsteden Region Midtjylland	IDA- Learning GymDanmark	FABO	Tech Labs Go Learn IBC International Business College

Table 1: Companies that were studied in the Danish context

In Denmark, it seems to be common the use of eLearning for training, however, it is still the face-to-face learning that have a strong presence. Furthermore, the desk research showed that there is a combination between self-speed and time restricted approaches for the courses.

Furthermore, it was found that most of the organizations have a defined process (set of steps) to design and implement e-learning courses. Regarding the topic of customization, it was possible to see that organizations that develop eLearning for their own development needs, apply customised learning, while companies which the main business is training, use the approach of "one design fit all". In addition, these last types of organizations have a standard style/design for their courses, for example: short videos follow by quizzes, standard format for the videos and structure of the course presentation.

There are variety of technologies used in their eLearning initiatives: videos, podcasts, animations, virtual reality, 3D technology, infographics, data analysis tools, gamification, LMS, among others.

Finally, it is worth to mention that while doing the first step of desk study, it was possible to see that the smaller had a less elaborated strategy toward eLearning.

ITALY:

The Italian context is represented by companies from different parts of Italy, training institutions and IT companies specialized in digital learning and custom e-learning. The sample analyzed includes both start-ups and young organizations as well as companies with many years of experience in the sector, which offer their services to target companies, mainly medium and large.

- ABI FORMAZIONE, Digital and Blended training for the banking sector, financial and insurance intermediaries
- MOSAICO E-LEARNING, Digital and Training Company
- OC GROUP Open Consulting, *e-learning tailoring,* Consulting company specializing in the creation of e-learning solution
- MEDIA ENGINEERING Srl, Company leader in innovative digital communication
- EMATHE Srl, Innovative start-up offers Digital Learning solution for companies
- MEGA ITALIA MEDIA Spa, expert in eLearning solutions, offers standard e-learning training (catalogue), on request also custom eLearning
- MODO NETWORK, customized training projects
- KPMG DIGITAL LEARNING SOLUTION, Expert on distance learning for over twenty years
- ARIADNE ELEARNING, Digital and Training Company

After a general search, some specific cases were studied in detail. The selection of the cases was made based on the availability of information in their website.

In general, these are the findings gathered from the analysis conducted:

- The reference target are companies, some of the operators analyzed address a specific sector (e.g. banking) therefore with a specialization of the educational fields covered, but most of them address companies in any economic sector. Medium and large companies remain the main users of e-learning and custom e-learning.
- A different approach to the design of e-learning paths can be seen in the cases analyzed: EdTech organizations attribute greater attention to technological aspects (gamification, AI, interactive simulations and virtual reality) compared to other more attentive organizations to the didactic and pedagogical aspects of digital training.
- The planning of the courses foresees in most cases a process that always starts from the analysis of the needs which for some of the operators represents a fundamental methodological phase for the construction of a "learning digital experience" and for other operators it represents a simple phase of collection of the needs/contents of the path to be implemented.
- The technologies used are mainly represented by Learning Management System (LMS) platforms, web platforms created with copyrighted or open-source software. In other cases, also other tools such as videos, podcasts, animations, virtual reality, 3D technology, infographics, data analysis tools, gamification.
- From a methodological point of view, only few operators adopt a blended learning approach.
- With respect to the contents and thematic areas, no specializations can be deduced, almost all eLearning operators deal with soft skills, technical and organizational topics indifferently.

GREECE:

In Greece, there are many companies that provide e-learning services to companies. Most of the companies are focusing on digital software but the training offer is varied. The sample analysed mostly companies that are experienced in the field. This includes:

- GA E-Learning: E-learning courses for businesses mostly on digital software
- E-Courses Academy: Courses on Software for businesses and programming
- Datamed: Consulting and services in the provision of education addressing professionals and organisations in the field of health
- E-Learning IS: Provision of services to other companies that want to develop e-learning courses
- LRQA: E-Learning courses in the field of Quality Assurance
- Wide Services: Mostly related with coding and software development
- Semifind: A portal that facilitates the searching of e-learning courses offered from different organisations
- SQ Learn: Provision of Moodle-based e-learning courses in a variety of sectors

Some characteristics:

- The courses that target companies are usually focused on the provision of training on digital software which is specific for various professions. E-Learning is not very frequent for small companies but mainly for medium and large companies.
- The focus is given mostly to the technological approach and the different possibilities for learning that technology offers. Usually, for the courses that address companies, the focus is not given to the pedagogical aspects since the main know-how of the companies is technology
- The courses are either face to face or online. Blended approaches are very rare
- In relation with the technology, some companies develop their own systems while many others are based on LMS platforms such as Moodle. Videos are often used as a e-learning resource while gamification has started to be more popular. AI and VR are still at the beginning.

5. Custom e-learning – Survey and Interviews

To inform in in dept about the blended learning and customized eLearning initiatives in the different countries, in the project member carried out interviews with a chosen number of organizations from the Desk study. The purpose was to understand process, methodologies, design principles and digital tools that organizations use to design and implement customized blended learning practices.

The project members created an interview guide (see *Appendix 3* with the interview guide) based on the literature review and in the desk research.

The interview consisted of 11 open questions, and they were carried out using a videoconference tool; the questions concern the following methodological and operational topics:

1. Learning needs analysis
2. Setting learning Goals
3. Learning experience design
4. Content selection
5. Course setting and costs setting
6. E-learning delivery
7. Assessment

In total nine interviews were conducted, representing three different cases from each country.

Table 2 present a summary of the organizations interviewed.

COUNTRY	NAME OF THE COMPANY	TYPE OF ORGANIZATION
Denmark	Fabo IDA RegionMidtjylland	An NGO Private company Public Institution
Italy	Mosaico eLearning OC GROUP Open Consulting Media Engineering Srl	Private companies
Greece	E-Courses Academy SQ Learn E-Courses Academy	Private companies and education centres

Table 2: Organizations that were interviewed to get a deeper understanding of their eLearning practice

Summary of the Insights from each partner

TOPICS INVESTIGATED IN THE INTERVIEWS	INPUTS FROM DENMARK	INPUTS FROM ITALY	INPUTS FROM GREECE
Learning needs analysis (Identification of courses to offer and learning needs)	In general, the courses offer is coming from the specific needs of departments or customers. Two of the companies have used questionaries to identify training needs, however the common practice is that customers know what they need.	The analysis of training needs is a fundamental point of the process. Among the interviewed entities we note one of them (OC Open Consulting), which makes the preliminary analysis a strategic and fundamental point of the consultancy provided, while not unbalancing on their methodology	Most of the e-learning courses that are currently offered in Greece are already created courses which are offered to different target groups. Some customisatin elements are included in this offer (such as the possibility of selection only of some modules that are relevant or only some activities that are relevant)
Setting learning goals (how define learning goals and outcomes)	The three companies dedicate good time to define the learning goals. Two of the companies works with an approach to promote change through training. This means that they focused on defining learning goals that are addressing the wanted change in organizations. Therefore, the learning objectives are defined in	The definition of the setting goals is sequential to the needs analysis; in this regard, two lines of action are identified: 1) on the one hand the operators who receive the contents from their customers (companies), who know exactly what they want and therefore the	It is common to ask for the design of customised training pathways. The learning goals are set by the company which defines which skills it wants that the employers develop

TOPICS INVESTIGATED IN THE INTERVIEWS	INPUTS FROM DENMARK	INPUTS FROM ITALY	INPUTS FROM GREECE
	terms of actions, such as "at the end of the course, the learner is able to … " To define the learning goals, it is necessary to ask many questions to get a clear understanding of the target group, the need to solve and the internal environment that can support the implementation of the training activity.	objectives are defined by them upstream 2) for "content creators" operators, the definition of educational objectives represents a fundamental part of the educational planning of the course to be customized and delivered	
Learning experience design (learning pathways and types of blended learning)	All the companies have a clear set of steps to follow to develop e-learning courses. Those are not linear process, but iterative ones. These processes go from the learning goals identification to the implementation of the course in a learning management platform. Those process are inspired in the design thinking/innovation processes and they use tools such as Storyboard, brain storming, problem identification and Personas. Through those steps the customers learn from professionals how to design e-learning courses to solve contextual learning needs. It is possible to find different modalities of delivery: face to face, blended and totally online. The design of courses should be related with the learners' work context and needs.	About Learning pathways, eLearning operators have a specific process that start from the needs analysis. In case of "Content curation" of content provided by the client: the operators rework them, create the storyboard, study the type of delivery desired by the customer (infographics, gamification, videos, real recordings) followed by the creation of multimedia contents and develop the pathways according to the results of training analysis.	In all trainings, it is very important the monitoring of the training process from a tutor in order to keep a human contact. This tutor is keeping the contact with the trainees either through synchronous or through asynchronous methods Usually, group work, group assignments etc are not preferred. Each individual studies alone and completes the individual assignments.

TOPICS INVESTIGATED IN THE INTERVIEWS	INPUTS FROM DENMARK	INPUTS FROM ITALY	INPUTS FROM GREECE
Content (content creation, selection or a mix)	All the companies create their own content, because the available content does not fit exactly to their needs and also because copyright issues. To develop content, they work with subject experts. Many of facilitators already have content and they get help to convert that content into a e-learning format.	Most of the Italian operators offering custom e-learning are start-ups or IT companies that can count on the supply of content from their customers. They then re-elaborate the contents in graphic, digital and multimedia terms in line with the needs of the customers. Most of these operators offering custom e-learning are mainly aimed at structured companies and large companies, which have the skills and resources to devote to the creation of educational content. An element that must differentiate our project should be a model focused also at SMEs.	For many trainings there are requested short training units (training capsules), usually in the form of a video or other activities. This is also called as microlearning. In relation with the content, the most common courses are about the use of specific software that is needed for the development of the skills of the employees. Usually the organisations that offer e-learning courses are not experts in the content but in the technology. They work together with a person in the company in order to facilitate the use of technology for the training of their staff. Usually, this is for large companies and not for SMEs.
Course setting and costs (production costs)	In general companies have difficulties to say the cost of production as there are many factors that influence (the topic, the already existing content, the complexity, the type of animation, among others). In average, it is around 15.000 dollars to produce one-hour course (based on videos). Any of the companies has a specific process/practice to	Limited information about the cost. Produce material or create contents is very expensive to do. It is difficult to make an overall average of the costs incurred. The creation of content by operators has a lot of impact on the budget. Indicatively we are talking about € 10,000 for 2-day courses, with	The information about the costs is very limited but it depends on different factors. Usually, small and medium companies do not invest a lot in training.

TOPICS INVESTIGATED IN THE INTERVIEWS	INPUTS FROM DENMARK	INPUTS FROM ITALY	INPUTS FROM GREECE
	curate content available in internet.	simple multimedia devices.	
E-learning delivery (technologies, LMS platforms, eLearning or blended learning)	Moodle, FABO and Plan2learn as learning management systems. Videos, podcasts, VR, AR, 3D, gamification, infographics.	From a technological point of view, the open source LMN platforms are chosen. Many of them are technology partners (e.g. Articulate, Moodle, Docebo).	The platforms used are either open source (such as moodle) or platforms developed by the technology providers. Some companies develop and/or customise their own platforms. There is a focus from the companies in mobile learning and the need for the learning to be accessible through multiple devices. There is a general need for the creation of training content in a brief time that will be able to cover emerging needs of a company.
Assessment (type of assessments)	Quizzes, questionaries and participation in forums.	The assessment of learning is provided if requested by the client (quizzes, questionaries). The issue of the certificate is important, now included in most of the outputs of the main LMS platforms.	Quizzes and questionnaires. Usually the focus is given to multiple choice questions or questions that could be checked automatically.
Other remarks from the interviews	Customization is close related to effectiveness. Two of the organizations were well informed about learning theories and pedagogies. One organization uses a community approach, which means that many individual companies come together to help each other	There is an interest in fast formats of no more than 15-20 minutes of e-learning. OC focuses heavily on blended learning, for greater effectiveness of training.	The organisation of e-learning courses is also made by regional/ national authorities through the Centres of Vocational Education (KEK). These courses are usually aiming to the update of the knmowledge/ skills of companies in issues

TOPICS INVESTIGATED IN THE INTERVIEWS	INPUTS FROM DENMARK	INPUTS FROM ITALY	INPUTS FROM GREECE
	to develop customized e-learning courses. They use the same LMS and they create open resources (content) that can be used by the other members of the community.		related with legislation/ regulations etc.

6. Results and Discussion

The A2 research activity ultimately allows us to focus on some key points of custom eLearning and blended learning: *technology, customization, learning and methodological approaches, pedagogy, prices*. This phase of the project ends with the following METHODOLOGICAL RECOMMENDATIONS which represent the starting point for the subsequent activities of the CLIMB project.

- *Recommendations about technology*: choose a *Learning Management System- LMS* platform to view courses, assign and complete assigned courses, carry out individual assessment through tests and other assessment tools, track and measure your progress. In relation to the current trends, it will be necessary to take into consideration technological solutions that make it possible to build a didactic model that focuses on the interactivity and involvement of the learner, diversifying the times of fruition and the use of learning tools, such as for example: *micro-learning, mobile learning, videos, simulation.*
- *Recommendations about learning, pedagogical and methodological approaches:* some essential aspects to be taken into consideration for the effectiveness of an eLearning path are summarized:
  - ✓ The challenge of eLearning consists in designing an effective and engaging learning experience, taking into account the behavior and habits associated with being online. One obvious aspect is *fragmentation* or micro-learning; the participant must be free to explore different contents in a very short time and, often, the acquisition of information follows inorganic paths, jumping from one idea to another in continuous references.
  - ✓ Propose a combination of "on-line" and "in presence" methods through the adoption of an integrated *blended learning* approach.
  - ✓ Adopt one *user-centered design*, i.e. an approach that places needs at the center of the design of the student and his learning objectives, with the aim of increasing the “learning productivity”.
  - ✓ Adopt methodologies aimed at constantly increasing the level of engagement of the participants towards learning, such as: "*active learning*" (understood as experiential learning which involves the participants in first person who are called to identify concrete solutions to a real problem, to example connected to your company and work processes) or “*social learning*” (Collaborative training model and perfectly integrated into the workflow, which takes place in a social context such as that between colleagues in a work environment. Social learning represents the '20' of the 70:20:10 training model, according to which 70% of training takes place through work experiences, 20% through interactions with colleagues, and only 10% through a formal approach in the classroom. Social learning is supported by social networks but also by ad hoc software, such as the company intranet or other).

- ✓ Propose training courses as coherent as possible with real problems, contextual situations, concrete cases concerning the work team (problem-based learning, scenario-based learning, real problems and group work).

- *Recommendations about customization:* everything starts from the training needs of your target. Personalization is a way to tailor the training content and experience to these needs.
  To ensure effective customization, you don't need an infinite list of contents, but a few tricks are enough:
  - ✓ Divide the lesson content into small modules to allow the student to select the micro-topic to learn.
  - ✓ Make the sequence of lessons on the LMS flexible. In this way the student can skip the content he already knows and select what he wants to learn.
  - ✓ *Curate the content* by reporting examples, case studies and games in line with the students' interests.
  - ✓ Provide for different ways of using the same content: video, audio, text, presentations.
  - ✓ Use some techniques to present the content to be chosen based on the student's responses through adaptive learning.
- *Recommendations about prices:* How much does it cost to produce a custom eLearning course? It's a difficult question, we can make the following estimate: producing 15 minutes of an average quality e-learning course costs between €2,000.00 and €4,000.00, depending on the experience of the resources involved and therefore their hourly cost. These are high figures that make us reflect on the need - within the context of the CLIMB project - to identify creative solutions in the use of (open source) technologies, ways of identifying and caring for educational content, techniques for personalizing the educational path to find alternatives "economic" to offer to a market with limited spending power (e.g. PMIs).

FINAL DISCUSSION:

a. Customer e-learning the State of the Art

At the end of this research phase we can say that the theme of custom e-learning is still underdeveloped. Most e-learning providers operate with the traditional top down approach, where courses are conceived, designed and implemented at the provider and then made available to the market, who can simply choose to enroll or not. There has been some progress on custom e-learning in suppliers who carry out ad hoc projects for the customer. In this case, but it is always considered by large clients, there is a phase of personalization of the contents. They are, in general, large companies that have thousands of employees to train and therefore can amortize the costs of ad hoc development on a large mass of recipients. What is noted is that these cases of custom e-learning are almost always dedicated to training on specific business processes and only rarely on basic and transversal skills.

b. Approaches and strategies

The top down approach is not compatible with custom e-learning and therefore it is not to be considered a strategy to be chosen for the continuation of the C.L.I.M.B. project. In fact, to personalize e-learning it is essential to start from the specific skills gaps to be recovered in the group of learners.

c. Key Drivers for custom e-learning

The road that the C.L.I.M.B. project wants to open is innovative and, therefore, difficult and full of unknowns. But we believe that it can represent the right complement to the offer on the market. Taking into account the high costs of creating e-learning content, the right completion of the offer is the creation of a custom methodological e-learning that can start from existing content, used in

learning paths targeted on the specific needs of the learning target. In practice, it is a matter of identifying existing training content (perhaps already available on free platforms such as Youtube) to be included in learning paths aimed at recovering specific and punctual skills gaps. This form of custom e-learning will operate through a peculiar combination of multimedia content, in terms of administration with integration with other forms of learning such as synchronous e-learning or self-learning with teaching materials provided by the course provider.

Among other things, we believe that it is the right path to follow in particular for the SMEs market, which have objective difficulties in investing in custom eLearning courses, both from an economic and an organizational point of view regarding the presence of internal resources dedicated to the development of educational content. The SMEs represent the first target group of the project.

d. Key Challenges for custom e-learning

There are many unknowns that the continuation of the C.L.I.M.B. project will try to solve.

To guide future project activities, we can summarize them in four questions:

1. *How to precisely define the skills gaps to be recovered?*
2. *How to find training content, already available, in the infinite universe of the web and choose them for specific gaps?*
3. *How to design the learning path with the right learning tests?*
4. *How to choose a specific technology platform or to be focused on the method by making the courses usable on many platforms?*
5. *How can this be cheap and acceptable for a small company that needs to train fewer than 10 employees?*

Commentato [CO5]: I will say: how to design learning paths for different learners within the same course?

Commentato [AS6R5]: Individualised learning paths within the same course?

Commentato [CO7R5]: Yes!

Commentato [CO8]: I will say: How to create a design method that allow to implement successful custom elearning courses in different technological platforms?

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8. Appendix

- Appendix n°1, Literature review
- Appendix N°2, Desktop market analysis
- Appendix N°3, Interview Guide
- Appendix N°4, Interviews summary