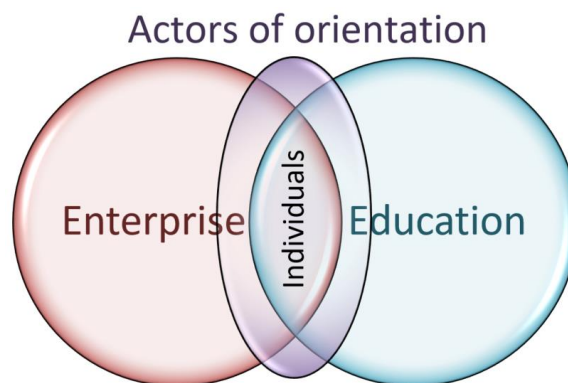




edenhub
Space of Collective Intelligence

A European platform and collaboration model for ED-EN HUB project



Co-funded by the
Erasmus+ Programme
of the European Union

TABLE

Introduction	3
How ED-EN Hub tools are presented	4
Phygital hubs – a model for education-enterprise collaboration	5
The model for ED-EN hubs	7
Description of the key elements of the model	7
Articulation of ED-EN hubs	9
ED-EN hubs genesis – a delicate balance to meet the challenges of mass collaboration on Transversal competences	10
Benchmarking of regional hubs – List of indicators	11
The digital platform	14
Platform Specification	14
A. Users and Members of the Platform	14
B. Services and Actions	15
How ED-EN Hub Model Works Over the Platform	17
Platform Demonstration	24
A. Access to the Platform from Individual Users’ Points of View	24
B. Access to the Platform from Administrative Users’ Points of View	30
<i>References</i>	32

INTRODUCTION

The ED-EN Hub project proposes a strategic approach to foster the use and development of transversal competences within the relationship between the world of education and training and the economical world. To this end, it offers resources, tools and methods, as well as technical resources (a digital platform) and organisational resources (local hubs) for learners, training organisations, enterprises and political decision-makers. It also reaches out to those responsible for providing guidance to individuals, whether they are professionals or people who actually support learners (trainers, associations, family, relatives etc.).

This document presents the ED-EN hubs model for facilitating the collaboration between education and enterprises through transversal competences. Both a physical space, where meetings, trainings, workshops and discussion are held and a digital space are proposed. This digital space is materialised with a platform, that has been designed and developed for use in the ED-EN Hub ecosystem. It uses new, fast, and frequently changing digital technologies including services and user interfaces to streamline the hub operation processes and create value for the community. The platform also by developing the networked learning community can facilitate the collaboration, interactions, and transactions between its stakeholders. In practical terms, the output consists of a collaboration platform and a supporting technology platform through which the model for the participatory development of collaboration infrastructures (the ED-EN hubs) is made available.

The developed platform is validated and tested by ED-EN Hub partners.

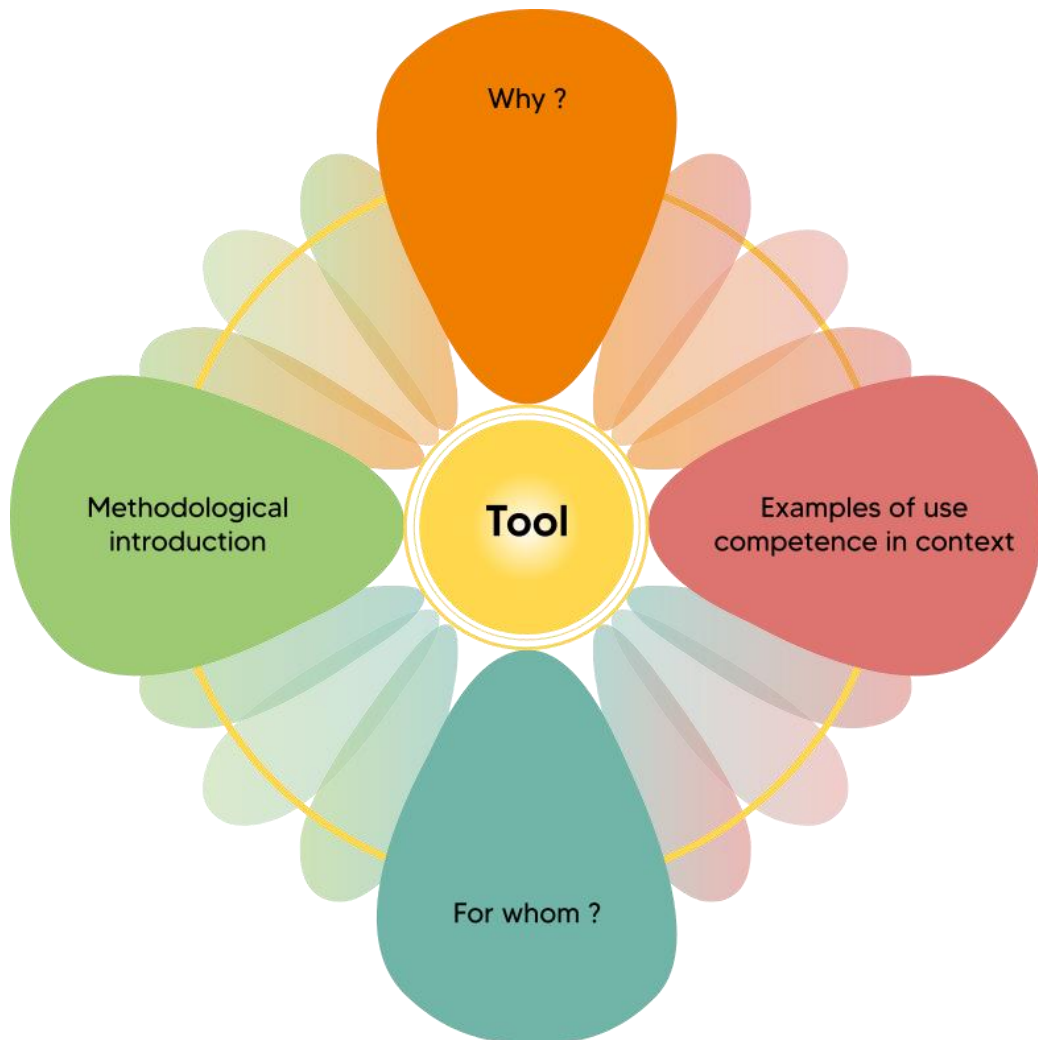
This deliverable summarise the model proposed by ED-EN Hub and its digital platform.

HOW ED-EN HUB TOOLS ARE PRESENTED

In the context of the ED-EN HUB project, the conception of Transversal Competences “in a process” has led us to define an important methodological point characterized in the figure below. Tools alone are not sufficient; they need to be used in conjunction with the competence approach developed in this project, and the experience engineering that this implies. We have called this figure the “tools daisy”. It allows us to contextualise the use of tools and therefore to take a step back from their use.

So each ED-EN hub tool is systematically analysed according to a fourfold questioning.

1. Why? What are the stakes of the tool? For what purpose?
2. For whom? What are the target audiences and their characteristics?
3. What are the methodological instructions?
4. Examples of the use of competences in context.



PHYGITAL HUBS – A MODEL FOR EDUCATION-ENTERPRISE COLLABORATION

A recent topic in Europe, transversal skills (basic and behavioral competences that are used in different professional contexts) are generating real enthusiasm. They respond to economic needs (investing in complex skills), social needs (developing individual capabilities, reducing inequalities), societal needs (acting in an uncertain world, responding to new aspirations) and technological needs (supporting current transformations). The purpose of ED-EN Hub is to contribute to the development of these skills through the strengthening of education-business cooperation. This approach allows us both to see cooperation from a new angle and to concretely contribute to the need for transversal skills, the latter requiring the development of a method that respects individuals and is concerned about their autonomy.

Why?

For whom?

At the center of our ED-EN hubs, we have the learner / the individuals. They can be at any stage of their training and professional experience, from secondary school to retiring people. Education institutions, enterprises and actors of orientation are targeted to act as stakeholders in the hubs.

Methodological introduction

The ED-EN hubs are composed of both the physical ED-EN hubs and the platform. They enable the delivery of various services, and facilitate international benchmarks and communication between hubs from different regions. Services are centered around learner's agency: analysis and self-assessment of Transversal Competences (TC), based on experiences and contextualization, pathways and action plans. It proposes a set of tools and methods built during this project or others.

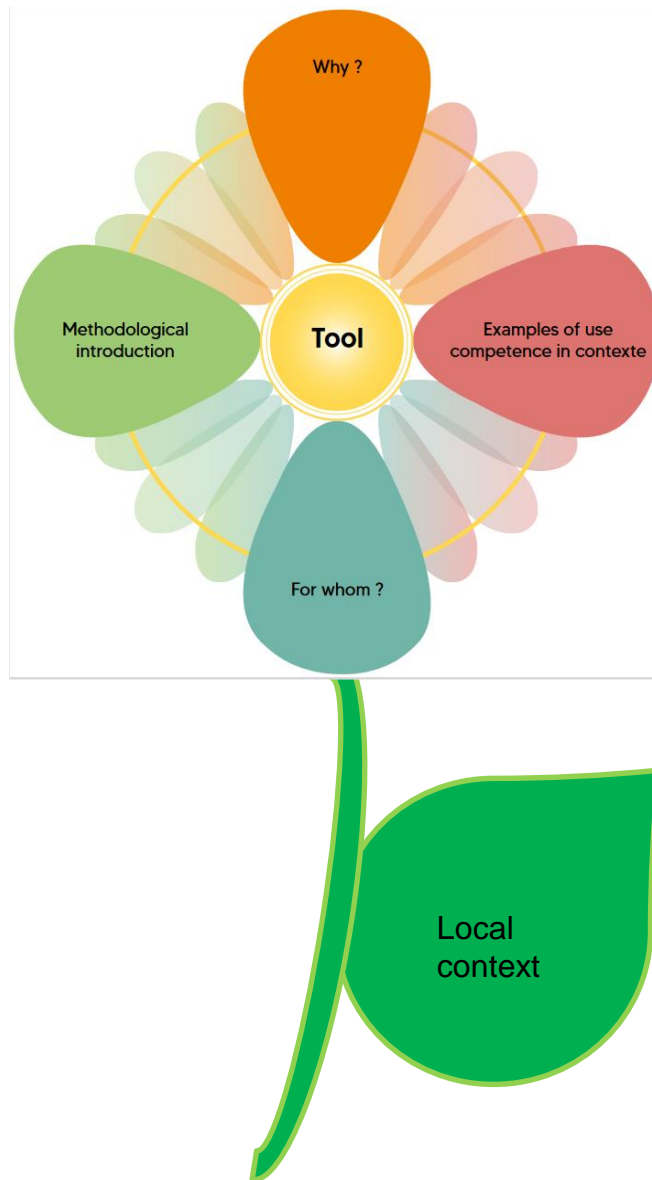
Example of use competences in context

Workshops, training sessions, meetings and roundtables are organized within the hubs to exchange on challenges, best practices, tools and methodologies to assist in the assessment, development and promotion of transversal competences. Different starting points have been chosen depending on the priorities of hubs' stakeholders.

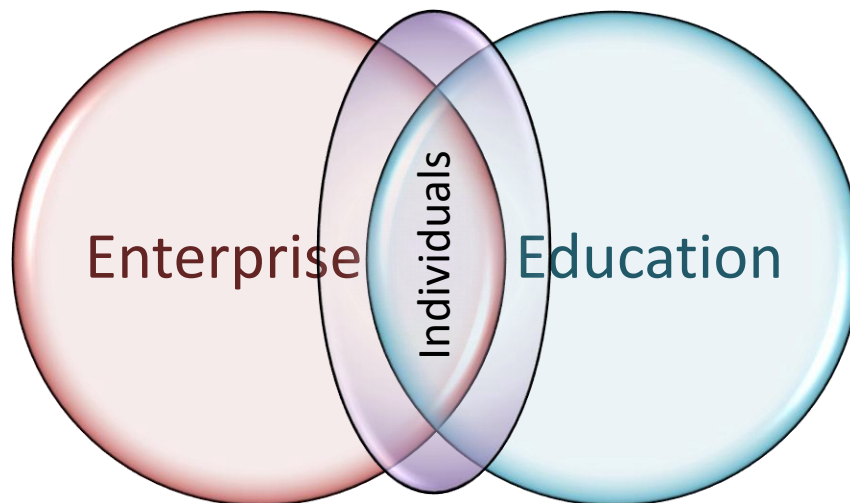
Local context

France: Industrialisation and industrial strategies. Skill mismatch, tackling the regional and national development strategies
Belgium: Work-based skills and labour shortage / jobs attractiveness
Portugal: Inclusivity with regards to academic accreditation, Higher education vs academic
England: Skill mismatch, Changes to the work force and demographics
Italy: Skill mismatch and Internal Mobility

All of these petals are constituting the model and platform described in this document.



Actors of orientation



Ed-En Hub “phygital” space (local hubs + portal) with services that are only physical, some only digital and some mixed

FIGURE 1 SIMPLIFIED REPRESENTATION OF ED-EN HUBS

DESCRIPTION OF THE KEY ELEMENTS OF THE MODEL

- Enterprises : include trainers, Human Resources, R&D Responsible
- Education : includes teachers and pedagogical engineers
- Individuals are trainees / learners and can be in enterprises and/or in schools or universities
- Actors of orientation: include professionals of guidance, families, counsellors
- The ED-EN hubs are physical spaces where stakeholders meet for training sessions, workshops, round tables, etc. and (2) a digital platform.
- The platform is the digital mean to facilitate collaboration between education and employment coming together to help people being successful in their journey. Individual is at the centre, collaboration is all around
- The “phygital” space is composed of both the physical ED-EN hubs and the platform. They enable the delivery of various services, and facilitate international benchmarks and communication between hubs from different regions. Services are centred around learner’s agency: analysis and self-assessment of transversal competences (TC), based on experiences and contextualization, pathways and action plans. It proposes a set of tools and methods built during this project or others. For each transversal competences, 3 or 4 possibilities are proposed to assess and develop the TC.

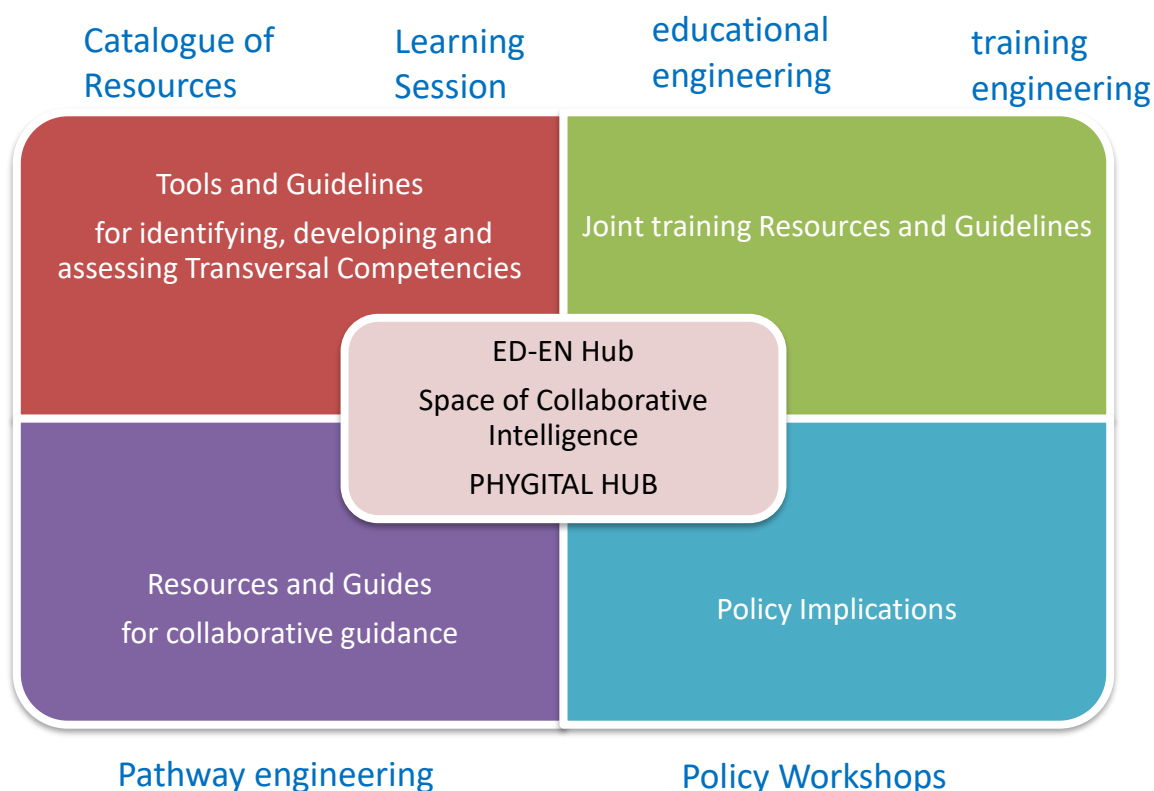


FIGURE 2 PLACE OF THE ED-EN HUBS WITHIN THE PROJECT AND LINK WITH OTHER DELIVERABLES*

The main impact is to develop new models to support European and regional collaboration between education and enterprises, to change professional routines, to develop and disseminate best practices.

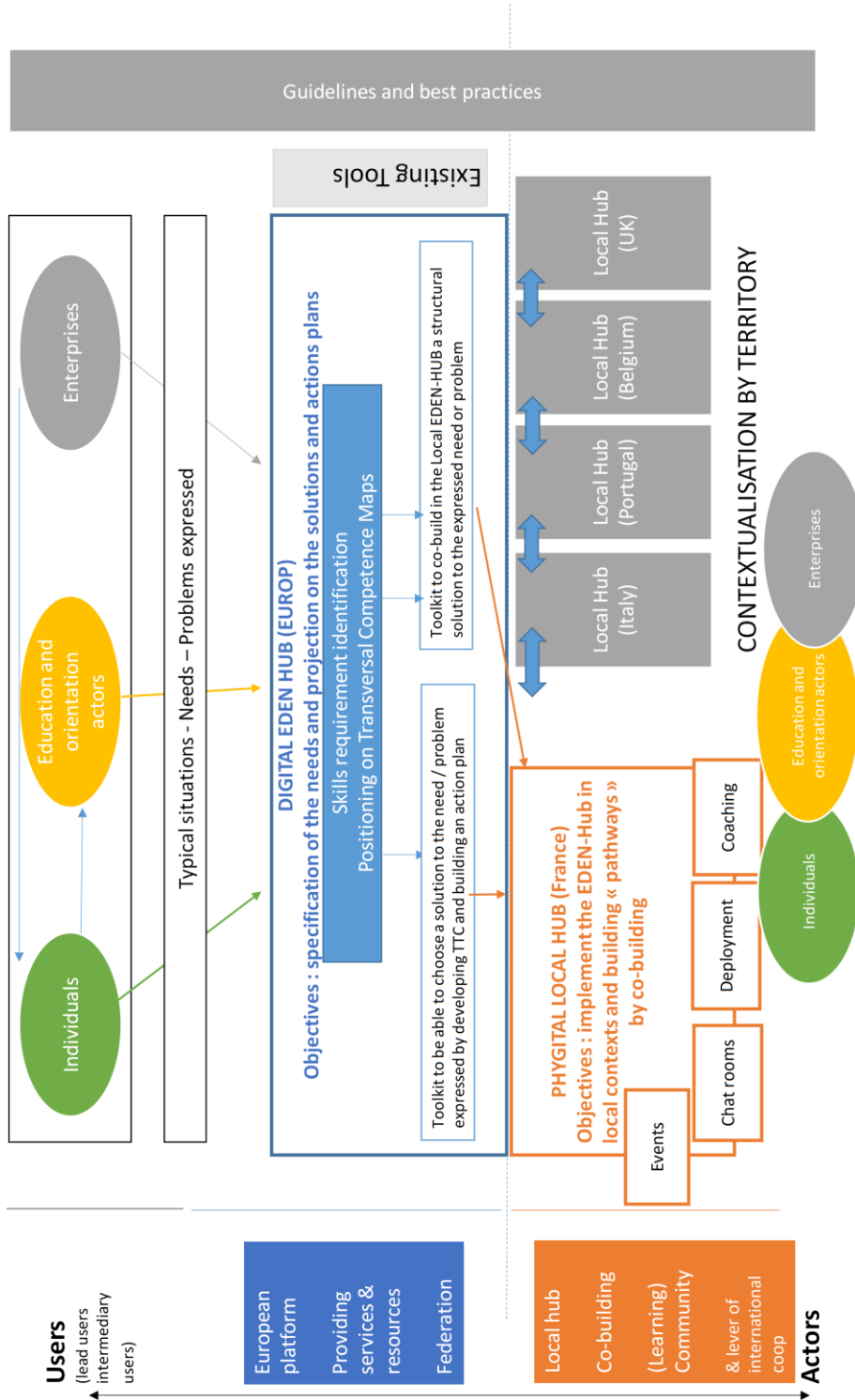
The description of each regional hub, its priorities, context and the policy implications are detailed in the IO5 deliverable. Si la plateforme digitale a une vocation universaliste, les hubs locaux ont vocation à se développer en tenant compte des caractéristiques et des besoins des territoires. Aussi le développement des hubs locaux dans les régions partenaires du projet ED-EN Hub est-il très différencié d'un contexte à l'autre comme mentionné dans les implications politiques d'ED-EN hub¹.

¹ "Toward a collaborative based approach to Transversal Competences: Policy Implications"

ARTICULATION OF ED-EN HUBS

Local hubs are designed to answer local challenges. Most of those challenges are shared across hubs. A space, where each stakeholder can exchange and develop their practices is proposed in our model. It is materialised by international online or hybrid meetings and a discussion forum proposed in the digital platform.

. FIGURE 3 DETAILED REPRESENTATION OF ED-EN HUBS



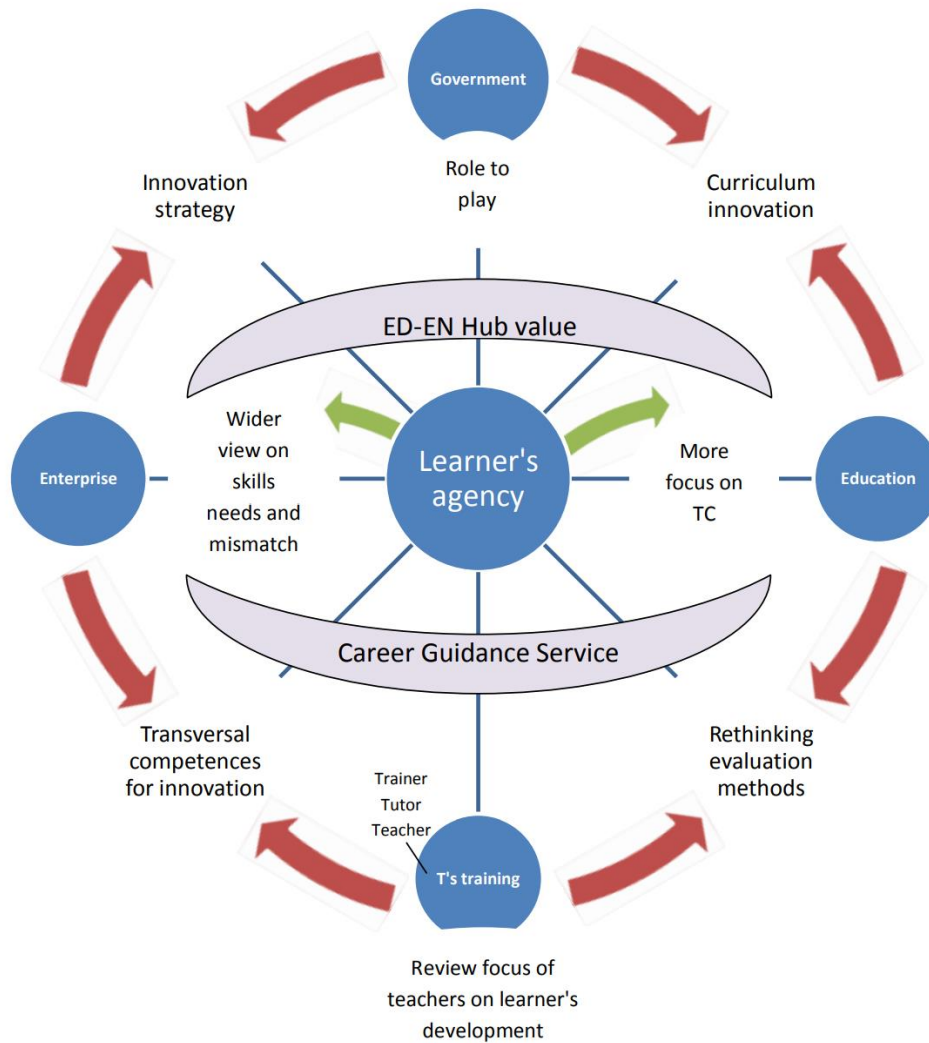


FIGURE 4 : LINK WITH IO5 POLICY RECOMMENDATIONS

ED-EN HUBS GENESIS – A DELICATE BALANCE TO MEET THE CHALLENGES OF MASS COLLABORATION ON TRANSVERSAL COMPETENCES

In order to refine the categories of stakeholders to be enrolled, particularly in local hubs, a map of the stakeholders to involve was produced in each partner region at the start of IO2. These stakeholders have been defined as "individuals or groups who are directly or exclusively affected by a project, as well as those who may have interests in a project and/or the ability to influence its outcome, whether in positive or negative. This approach makes it possible to identify four categories of stakeholders: training and education stakeholders, employers and professional organizations, public administrations and political decision-makers, and other community stakeholders. We have identified existing representatives in each region and evaluated their expectations, the engagement strategy and the links to be established with them.

Due to the covid situation during the first half of the project, we first developed the tools and methodologies, and worked on the barriers and enablers of mass collaboration. A conference paper and a research article on this question have been published during the second year of the project:

Zamiri, M., Sarraipa, J., Camarinha-Matos, L. M., & Jardim-Goncalves, R. (2022). An Organizational and Governance Model to Support Mass Collaborative Learning Initiatives. *Applied Sciences*, 12(16), 8356.

Zamiri, M., Camarinha-Matos, L. M., & Sarraipa, J. (2022). Meta-Governance Framework to Guide the Establishment of Mass Collaborative Learning Communities. *Computers*, 11(1), 12.

We came back to the list of stakeholders to launch the local ED-EN hubs in the last year of the project, once their priorities and availabilities enabled them to realise how well their needs were aligned with our proposal.

BENCHMARKING OF REGIONAL HUBS – LIST OF INDICATORS

Once the hubs are launched and operational on a local basis, IO2 provided a list of benchmarking indicators to enable each hub to reflect on its maturity level, and by extension, to position itself compared to other hubs. Here is the list of indicators used:

1. STRUCTURE AND STRATEGY

- Existence of collaboration strategy between Education and Enterprises
 1. Yes, fully consolidated and publicly available
 2. Yes, but still informally agreed
 3. Not really, collaboration exists but is not strategically structures
 4. Not, really, we are still in a preliminary phase

(If the answer to the previous question is 1 or 2)

- Presence of TC in collaboration strategy document
 1. Yes, it is one of the main points of the strategy document
 2. Yes, it is present in the strategy document, but other points are more in evidence
 3. No, TC are just understood to be part of the collaboration, but they are not mentioned in the strategic document
- Presence of both Education and -Enterprises representatives in the Hub governance structure
 1. Yes, both Education and Enterprises are well represented
 2. Yes, they are represented, but one of the two components is clearly better represented
 3. No, presently only one component is represented
- Public authority support/involvement
 1. Public authorities are committed to support the Regional Hub activities and have reserved resources for them
 2. Public authorities are supporting the goals of the Hub, but there is no long-term commitment of resources foreseen, it is case-by-case support to specific activities
 3. Public authorities are aware of the Hub activities and occasionally take part in its events, but a long term relationship has not yet been established
 4. The Hub is planning to work without an explicit support of regional public authorities, it is essentially between education organisations and industry that the collaboration should be managed, without too many external constraints
- Number of stakeholders in governance structure
 1. More than 20
 2. Between 10 and 20

3. Less than 10
 4. The governance structure is not yet established
- Physical Hub
 1. The Hub has a clear dedicated physical structure and is already used by industry and education
 2. The Hub has an address and share physical spaces with other related initiatives involving education and industry
 3. The Hub is still looking for a place where to develop its activities
 4. The Hub is hosted and embedded in the physical structure of an ED-EN Hub Partner
 - Digital Hub
 1. The Regional Hub has a dedicated digital “Home” of its own:
 2. The Hub has a dedicated space in the Partner’s website
 3. The Regional Hub has some space in the Project webpage
 - Transversal Competences experience available
 1. The Hub gathers a pool of experts in transversal competences and represents a regional excellence centre in this field
 2. The Hub has access to experts that can be activated on demand
 3. The Hub has a different focus, but can manage the issue of TC through ad-hoc consultancy, events and, if necessary, training, guidance and assessment activities
 - Students’ voice present in the governance body or through other foreseen channels
 1. Students are represented in the governance body
 2. Students are not formally represented, but their views are regularly collected through scheduled informal meetings and interviews with the management and teaching staff
 3. Students are filling satisfaction questionnaires on their learning experiences
 - Inclusion policy in place
 1. The Regional Hub has clearly stated its inclusion policy and performance indicators
 2. The Hub has some general priorities in the field of inclusion, but they are not very precisely defined
 3. The Hub has no inclusion policy, it follows other basic principles like improving productivity and adaptability of human resources. However, it takes care of social inclusion and non-discrimination principles as part of its code of practice

2. INPUTS

- Ratio Public/private funding
 1. Public and private funding are both very relevant to support the Hub activities (each cover a percentage between 34 and 65%)
 2. Public funding is dominant (more than 66%)
 3. Private funding is dominant (more than 66%)
- % of employees dedicated to collaboration ED-EN
 1. More than 66%
 2. Between 33 and 66%

3. Less than 33%
 4. Nobody is fully dedicated, but many participate when required
- % of staff having both education and enterprise professional experiences
 1. More than 66%
 2. Between 33 and 66%
 3. Less than 33%
 - Quality plan for collaboration activities (apprentissage, internship, joint training..)
 1. All collaboration activities are designed and implemented according to an existing quality plan
 2. Most collaboration activities are structured according to some consolidated methodological tools
 3. The Hub is still collecting tools and developing its procedures thank to the collaboration with its partners/members

3. CURRENT PRACTICE/PROCESSES

- **Joint** curricula development/learning needs identification
 1. It is a consolidated collaboration area
 2. It is a new collaboration area, developed in one or two cases only
 3. The Hub has not yet experienced this, but is planning to do so
 4. This activity is not in the plans of the Regional Hub
- Internships explicitly including TC as learning outcomes
 1. It is a consolidated collaboration area
 2. It is a new theme for internship development, which is a consolidated activity
 3. It is a new collaboration area
 4. The Hub has not experienced it yet, but is planning to do so
 5. This activity is not in the plans of the Regional Hub
- Number of **joint events** per year
 1. More than 10
 2. Between 5 and 10
 3. Less than 5
- Number of Teachers and Trainers **jointly** trained last 12 months
 1. More than 50
 2. Between 20 and 50
 3. Less than 20
- Number of students/workers **jointly** trained by hub members
 1. More than 500
 2. Between 200 and 500
 3. Less than 200
- **Joint** methodology development
 1. It is a consolidated collaboration activity
 2. It is a new activity, just activated in one or two occasions
 3. We are planning to start soon

4. It is not in the Hub plans

- **Joint** guidance including TC Focus
 1. It is a consolidated collaboration activity
 2. It is a new activity, just activated in one or two occasions
 3. We are planning to start soon
 4. It is not in the Hub plans

4. OUTPUT/OUTCOMES

- Recognition of TC on students/employees
 1. The Hub has a service to recognise TC for any person who is interested
 2. The Hub has a service that is available only for its member (education and training organisations with their students, enterprises with their employees)
 3. The Hub has a network of organisations and consultants who can provide this service
 4. This service is not provided by or through the Hub
- ED-EN HUB overall number of beneficiaries (among categories)
 - _____ Education and Training Providers
 - _____ Enterprises
 - _____ Students
 - _____ Employees
 - _____ Others (please specify) _____
- Approximate % of growth of activities compared to previous year
 1. More than 25%
 2. 10 to 25%
 3. 0 to 10%
 4. Slight decrease (up to -10%)
 5. Significant decrease (more than 10%)

THE DIGITAL PLATFORM

PLATFORM SPECIFICATION

This section explains the different parts, features, and capabilities of the platform developed to diffuse our approach and support the collaboration.

A. USERS AND MEMBERS OF THE PLATFORM

Individuals - who intend to develop their Transversal Competences. The main functions that the individuals can perform are:

- a) Self-competence assessment
- b) External Transversal Competence recognition or certification
- c) Transversal Competences improvement activities such as training courses, workshops, and materials
- d) Looking for job opportunities

Institutions – refers to enterprises, educational institutes, and/or organisations that may request, provide, and/or deliver the needed services (e.g., training) for developing Transversal Competences. The main specific functions that the institutions can perform are:

- a) Publishing job opportunities (or professionals seeking work) based on specific Transversal Competences
- b) Making personal Transversal Competences recognition or certification, and
- c) Collaboration with other institutes in performing tasks such as analysing training demands, and co-creation and participation as a supporter of Transversal Competences improvement activities and training programmes.

Professionals of guidance – refers to professional instructors who provide individual users with distinct types of support and guidance. They can find the right tools for a particular assessment, or the right way to make an analysis of learners' feedback. The main specific functions that the institutions can perform are:

- a) Defining guidance procedures and certifications of participation
- b) Defining general activities plus assessments for Transversal Competence improvement. It may include training courses, workshops, and materials.
- c) Analysing the performances (assessing the quality of training and activities through trainees' feedback).

Members – the platform provides administrative support to the users. The main duties and responsibilities of the administrative members typically include:

- Determine rules and long-term objectives for the platform and recommend enhancements to all content according to the guidelines
- Integrate new technology system into the platform and coordinate with web administrator
- Maintain status for all platform projects and assist in resolving any issues for new and existing channels and automate all processes
- Perform tests on all configuration and upgrade processes, achieve all IT objectives, and maintain knowledge of new technology for all portal environments,
- Maintain an efficient platform documentation system (e.g., for training materials, results of evaluations and assessments),
- Management of public information and other portal configurations,
- Analyse all system upgrades and applications, ensure compliance with all program requirements, design all solutions for the platform, and assist in resolving all production issues.
- Analysis of global ED-EN Hub activities performance
- Monitor and analyse all system metrics and maintain optimal performance for the platform.
- Coordinate with administrators and users to implement all operational activities and determine all web server configurations, and
- Manage and configure all custom platform applications, and
- Publish automatic services information.

B. SERVICES AND ACTIONS

The services and actions of the platform present how a user can navigate the website, get the information they are seeking, and/or use the services they want. The ED-EN Hub platform offers a wide range of services for all users and members as presented in the following paragraph.

INDIVIDUAL (POSSIBLE ACTIONS) – INDIVIDUALS AS MAIN USERS OF THE PLATFORM/WEBSITE CAN DO THE FOLLOWING 8 ACTIONS:

Individuals as main users of the platform/website can do the following eight actions:

1. **Create an account** – refers to a personal space created for an individual user to interact with and access various features of the website. It typically involves the user registering with the website by providing certain personal information, such as their name, email address, and password. Once registered, the user can then log in to the website, use their credentials, and gain access to various features.
2. **Update the account** – refers to the process of making changes to a registered user's profile or personal information. This can include updating their email address, password, username, and other details associated with their account.
3. **Create a profile** – the profile page represents information regarding a user's identity on a website. It contains personal data, a profile photo, a summary, interests, achievements, and more.
4. **Self-assessment** – refers to the process of reflecting on and evaluating an individual's own TRANSVERSAL COMPETENCES and the areas for improvement which will be performed through a questionnaire provided.
5. **Search job** – involves using the website's search function to find the advertised job that matches his TRANSVERSAL COMPETENCES, skills, experience, and job preferences.
6. **Pathways** – refers to several types of activity programmes (e.g., courses, workshops, events) that individuals can take. Individuals can take and try various pathways simultaneously.
7. **Recognition** – refers to the acknowledgment of an individual's existence, validity, and competence development.
8. **Performance** – refers to accessing and checking the number of Transversal Competences that an individual user has taken.

INSTITUTIONS (POSSIBLE ACTIONS)

Institutions as main service providers can do the following 10 actions over the platform:

1. **Create an account** – to access various features of the website, the institutions also need to create an account and provide the needed information.
2. **Update the account** – the information associated with an institution's account can be updated, modified, and edited.
3. **Create a profile** – to share relevant information (e.g., personal, and professional information, marketing, and promotional purposes) on the portal.
4. **Give recognition** – refers to acknowledgment and appreciation of an institution's accomplishments, contributions, qualities, and Transversal Competences.
5. **Provide certification** – refers to providing official documentation for individual users that recognises and validates their achievement or completion of a specific task, course, program, activity, workshop, event, skill, or Transversal Competence
6. **Create activities** – refers to providing structured exercises or actions undertaken to enhance knowledge, develop skills and Transversal Competence, improve performance, or promote learning in a specific area or field.
7. **Create events** – refers to providing practices and programs designed to enhance the skills and Transversal Competence, knowledge, and capabilities of individual users in a specific subject or field. These events are typically structured and organized to provide structured learning experiences and opportunities for participants to acquire latest information, develop practical skills, Transversal Competence and improve performance.

8. **Create job opportunities** – refers to the process of providing, informing, and connecting individual users with potential employment options. It involves providing individual users with information about available job openings, internships, or other career-related opportunities that align with their interests, skills, Transversal Competence, and academic pursuits.
9. **Create collaboration** – refers to providing opportunities and involving various users and members, who come together to create and facilitate effective learning and development.
10. **Share plans** – refers to the process of distributing or sharing training plans or programs with other users and members. refer to the process of distributing or sharing training plans, programs, and strategic and systematic approaches designed to enhance and optimize the learning experience for users and members. These plans outline the goals, objectives, strategies, and resources required to facilitate effective training and learning.

PROFESSIONALS OF GUIDANCE (POSSIBLE ACTIONS)

Professionals of careers and skills guidance as service providers and consulting groups can do the following four actions over the platform/website.

1. **Search requests** – refers to the act of looking for the messages sent from individual users, asking the professionals for guidance to perform a specific action or provide some information or services. Requests are a fundamental part of user-platform communication.
2. **Create custom made learning plans** – refers to designing a specific and tailored strategy, course of action, and/or guidance procedure to achieve a particular goal or objective. It involves considering the unique circumstances, resources, constraints, and requirements of a situation and developing a plan that aligns with those factors.
3. **Search collaboration** – refers to the process of working with other users and members to conduct research, gather information, and explore a specific topic or subject of interest. It also involves pooling resources, knowledge, and expertise to enhance the efficiency and effectiveness of the services provided.
4. **Create or share tools** – refers to the process of identifying, designing, and/or developing resources, materials, or software applications that facilitate the training of individual users in a specific area of knowledge or Transversal Competence. These tools are designed to enhance the learning experience and improve the effectiveness of training programmes.

ADMINISTRATIVE MEMBERS (POSSIBLE ACTIONS)

Administrative members can do the following three actions over the platform:

1. **Activity check** – refers to the actions or tasks involved in the process of reviewing or verifying the quality of activities provided by institution users.
2. **Job check** – refers to the process of reviewing and checking the job sources, job advertisements, job goals, job descriptions, job needs, Transversal Competences.
3. **Event check** – refers to the process of reviewing and checking the event's types, lists, schedules, details, registration, access, quality, Transversal Competences.

HOW ED-EN HUB MODEL WORKS OVER THE PLATFORM

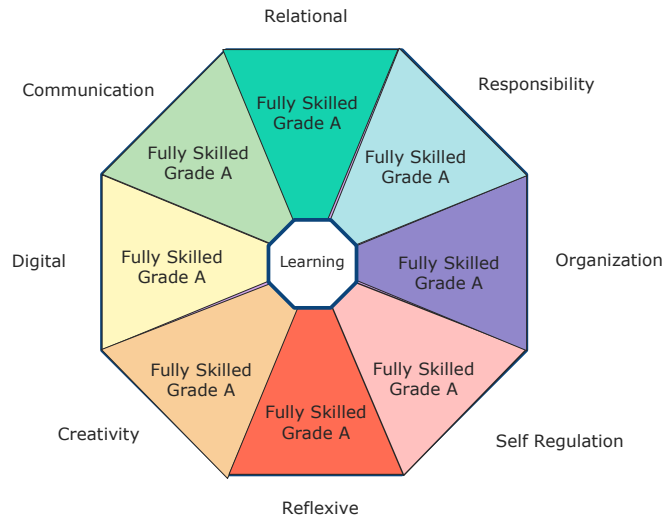


FIGURE 5 TTC MODEL CONSIDERED FOR A FULLY SKILLED PERSON.

In presenting the scenario, we considered the Transversal Competence model as a reference model and an accepted source for analysing and comparing the demanding Transversal Competence. Figure 5 illustrates the Transversal Competence model we considered for a fully skilled person who has all the considered Transversal Competence in all nine groups of Transversal Competence (Relational, Responsibility, Organization, Self-Regulation, Reflexive, Creativity, Digital, Communication, and Learning). This model is considered for assessing the scenarios. In this example the person has the full complement of Transversal Competences relevant to their level for experience and development and learning journey. In reality, a situation as shown in Figure 9 would be very unlikely to exist. Every job role has differing levels of required or desirable Transversal Competence and every person will have a unique and variable Transversal Competence profile. A more realistic model is presented in Figure 5. This figure compares the required Transversal Competences (at the group level) with the results of the self-assessment. The blue figure represents the required Transversal Competences, and the red figure represents the results of the self-assessment. Given that, the gaps, or the group of Transversal Competences that the applicant needs to fill/develop include Responsibility, Self-Regulation, Reflexive, and Digital. The current Transversal Competences of the applicant / individual user can meet the required level for the Relational, Organisation, and Creativity groups. His communication Transversal Competences exceeds the requirements.



FIGURE 6 COMPARING THE REQUIRED TC WITH THE RESULTS OF SELF-ASSESSMENT.

The analysis and comparison could be deeper and appraise the required Transversal Competences of every single group of Transversal Competences. As an example, Figure 7 makes an analysis and comparison for the 'group of Reflexive' competences. The required TC and grades from the Reflexive group include Self-assessment (grade A-), Personal questioning (grade B), Open mind (grade B-), Understanding problems (grade B), Judgment autonomy (grade C+), Critical thinking (grade B-), Mathematics (grade B-), and Capacity to analyze (grade B).

The current Transversal Competences and grades of the applicant for the Reflexive group are Self-assessment (grade C), Personal questioning (grade C-), Open mind (grade C-), Understanding problems (grade D+), Judgment autonomy (grade C+), Critical thinking (grade B), Mathematics (grade B-), and Capacity to analyse (grade D). The analysis and comparison show that five Transversal Competences should be developed namely, Self-assessment, Personal questioning, Open mind, Understanding problems, and Capacity to analyse which are highlighted in red colour in Figure 7. There are two Transversal Competences (Judgment autonomy and Mathematics) that have equal levels/grades which are highlighted in blue colour. The only competence that exceeds the requirement is Critical thinking which is highlighted in green colour.

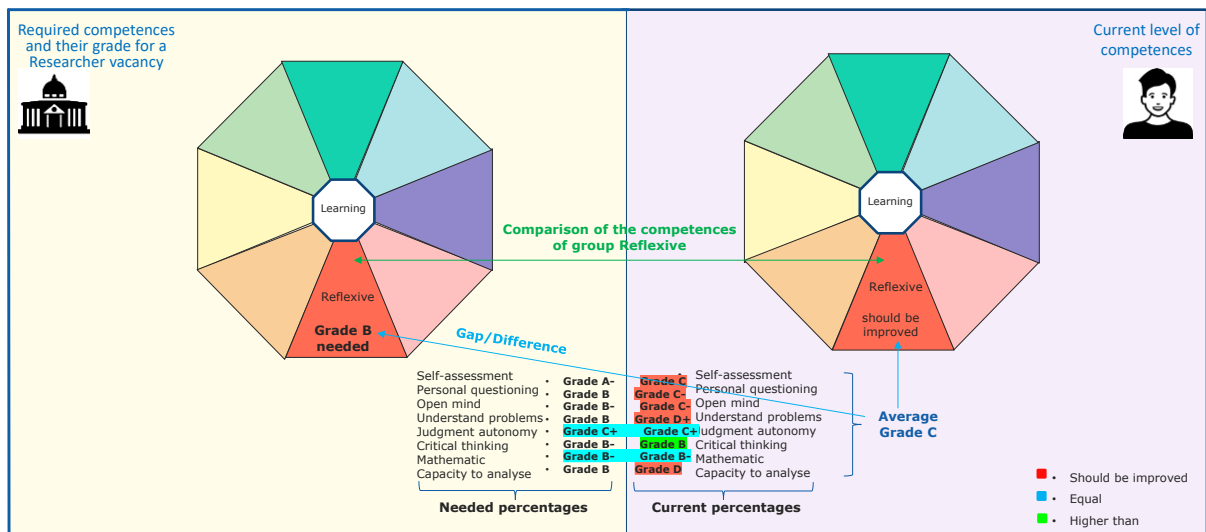


FIGURE 7 ANALYSIS AND COMPARISON OF THE GROUP OF REFLEXIVE COMPETENCES.

Figure 8 gives a more detailed view of the analysis and comparison shown in Figure 7. The blue part is the gap in Transversal Competences that needs to be filled/developed.

Specific competences in the group of Reflexive

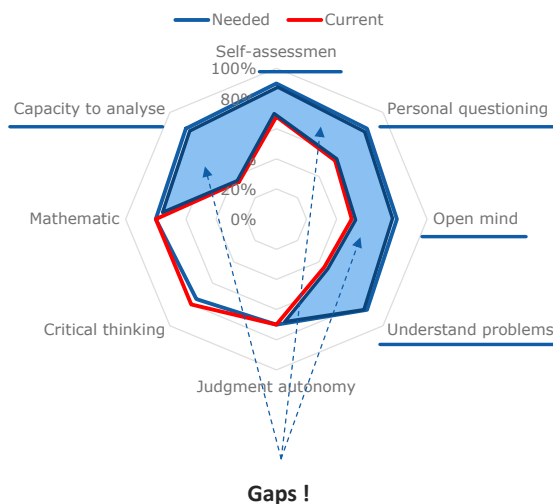


FIGURE 8 GAPS AND TC THAT NEED TO BE FILLED/DEVELOPED IN THE GROUP OF REFLEXIVE COMPETENCES.

Having identified the gaps and the Transversal Competences that need development, the applicant should then refer to the 'guidance programs' to identify and select the associated activities that should be performed by him. There are a variety of activities designed and developed to support individual users in developing their skills and Transversal Competences. To find the relevant associated activities, the users can request a consultation from the institutions or guidance professional. Figure 9 shows some samples of associated activities that the applicant / individual users can perform to develop their Transversal Competences.

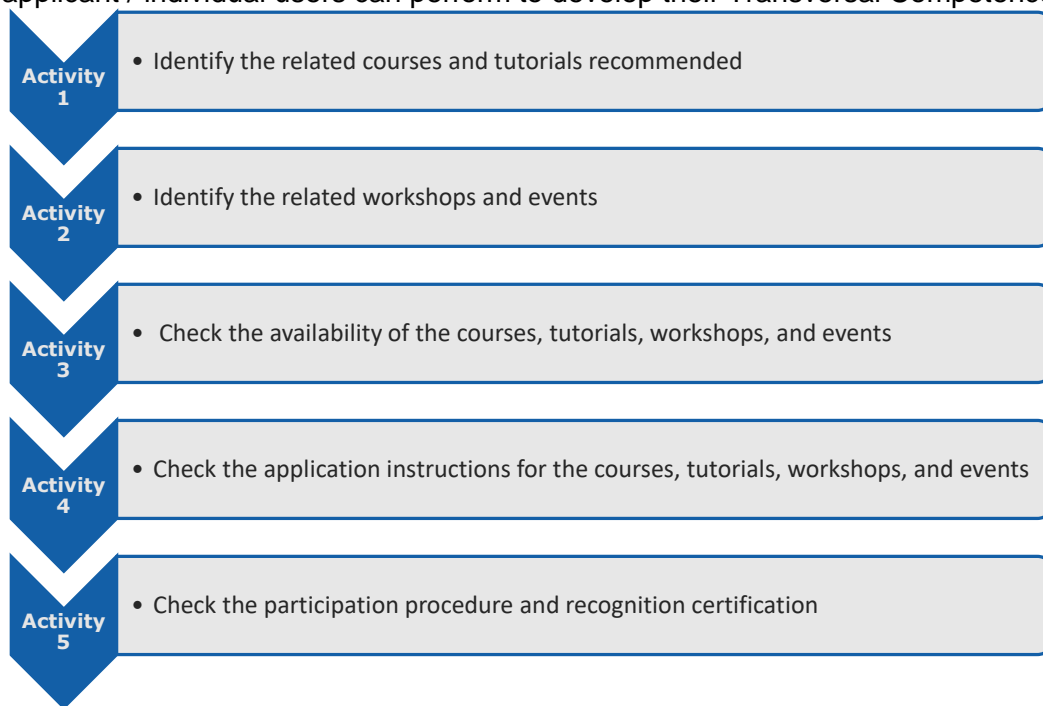


FIGURE 9 SAMPLES OF ASSOCIATED ACTIVITIES THAT THE APPLICANT/INDIVIDUAL USER CAN PERFORM TO DEVELOP HIS TC.

Figure 10 summarises the method which helps individual users to develop their Transversal Competences.

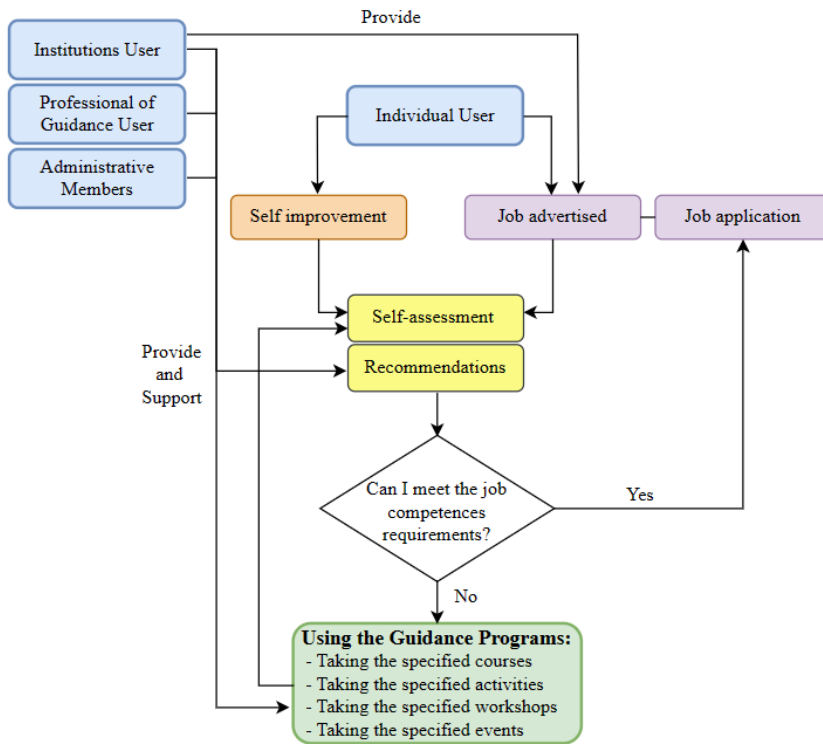


FIGURE 10 A METHODOLOGY FOR DEVELOPING INDIVIDUAL USERS' TC.

For each competence one or more related activities are developed for the users to take. The nine categories of Transversal Competences (Relational, Responsibility, Organization, Self-Regulation, Reflexive, Creativity, Digital, Communication, and Learning) are listed on the right side of Table 1 and the related activities are placed right in front of the competences. Thus, Table 1 and Table 2 enable to visualise the provided activities for developing Transversal Competences.

TABLE 1 RELATED ACTIVITIES TO THE CONSIDERED TCS.

Competences		Activities																														
	id	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	title																															
	acronym																															
Categories	level	B	I	B	B	I	B	E	I	B	I	B	I	E	I	E	B	I	B	E	I	B	I	E	I	I	I	B	E	I	E	
Reflexive	Self-assessment																															
	Personal questioning																															
	Open mind/cognitive flexibility																															
	Stepping Back for Problem Diagnosis and Understanding																															
	Judgment autonomy																															
	Critical thinking																															
	Developing Competence in Data Analysis and Interpretation																															
Creativity	Analysing Experience for Personal and Professional Development																															
	Creativity expression																															
	Curiosity																															
	Initiative and entrepreneurship																															
	modeling New Ideas: Innovating Creative Processes																															
	Ability to foster collective creativity																															
	Solution orientation																															
Digital	Innovative management																															
	Digital Application Fluency: Understanding and Utilizing Main Tools																															
	Capacity to search and process useful information																															
	Digital Transformation: Creating Innovative Models and Streamlining Processes																															
	Data and AI literacy																															
	Content creation adopted to a specific field																															
	Questioning automatic research																															
Communication	Multimodal Communication: Mastering Different Forms of Expression and Communication																															
	Use data to show evidence																															
	Adopt language and communication codes to target groups																															
	Communicate in foreign languages																															
	Reporting																															
	Listening, observing																															
	Empathy/humility																															
Relational	Negotiation																															
	Reconcile tensions and dilemmas																															
	Intercultural awareness																															
	Diversity management																															
	Active Listening and Observational Skills																															
	Relational management																															
	Team building/leadership																															
Responsibility	Ability to evolve in collective intelligence																															
	Ability to transmit and train																															
	Prioritising Personal Wellbeing																															
	Take into account colleagues and clients																															
	Take into account community wellbeing																															
	Understand and integrate sustainable development																															
	Understand and integrate economic matters																															
Organization	Ethics and human rights awareness																															
	Security and Risk Management in Responsible Practice																															
	Respecting organisational rules																															
	Respecting social																															
	Interaction codes																															
	Teamwork/team management																															
	Adaptability in Organisational Environments																															
Self-regulation	Seek advice and opinion																															
	Reliability on tasks and quality																															
	Timeliness																															
	Project management																															
	Adaptability to different contexts																															
	Capacity to mobilize own skills																															
	Time management																															
Learning	Self-organization/operational autonomy																															
	Management of uncertainty/risk management																															
	Management of time pressure and multiple tasks																															
	Learning to learn																															
	Learning to become																															
	Tension towards improvement																															
	Self-confidence and motivation																															

B= Beginner	I= Intermediate	E= Expert
-----------------------	---------------------------	---------------------

Table 2 lists the activities presented in Table 1.

TABLE 2 LIST OF ACTIVITIES.

No	Activities	Abbreviations	No	Activities	Abbreviations
1	Activity to Career Smart Skills	ACSS_B	16	Activity to explore creative techniques and approaches	AECT_B
2	Activity to sort candidates based on their language skills	ACLS_I	17	Activity to Critical Thinking Exercise	ACTE_I
3	Activity to analyze work strengths	AAWS_B	18	Activity to Introduction to common digital tools	AIDT_B
4	Activity to exploring Numerical Reasoning	AENR_I	19	Activity to Strengthen observation and active listening skills	ASOL_E
5	Activity to delivering high quality business training	ADBT_B	20	Activity to Language and cultural immersion activity	ALCI_I
6	Activity to Skill Scan Express	ASE_E	21	Activity to Audio-Visual	AAV_B
7	Activity to speed up Future Skills Tracker	AFST_I	22	Activity to Develop Intercultural Awareness	ADIA_I
8	Activity to accelerate Skills Audit	AASA_B	23	Activity to evaluate ethical dilemmas in engineering	AEDE_E
9	Activity related to assess individuals personality	AAIP_I	24	Activity to Analyze and evaluate the different types of knowledge	AAEK_I
10	Activity about Assuranc	AALT_B	25	Activity to Apply change	AAMP_I

	e of Learning techniques			managem ent principles	
11	Activity to Understand the importance of lifelong learning	AULL_B	26	Activity to Develop effective communication	ADEC_I
12	Activity to Develop an awareness of economic considerations	AAE_I	27	Activity to Develop problem-solving	ADPS_B
13	Activity to Learn techniques for managing timelines	ALMT_E	28	Activity to Case studies and examples of successful digital marketing	ACSDM_E
14	Activity to test making decisions under uncertainty	ADU_I	29	Activity to improve personal Life Skills	AILS_I
15	Activity to Participants to gain the skills and knowledge	APSK_E	30	Activity to apply sustainable and ethical practices	ASEP_E

PLATFORM DEMONSTRATION

Having designed and developed the platform, the users can then access it and perform the related functions and activities. In the following examples, the access to the platform from individual users' points of view and administrative users' points of view are presented.

A. ACCESS TO THE PLATFORM FROM INDIVIDUAL USERS' POINTS OF VIEW

Individual users can access the platform and perform their related functions and activities by taking the following steps:

Step 1 (Using URL) – The easiest and fastest way to access the platform/website is to write its address (<https://uninovaedenhub.dev10.javali.pt/>) into the address bar located in the browser that the individual users use. This address is known as a Uniform Resource Locator (URL). The front page of the Platform is shown in Figure 11.

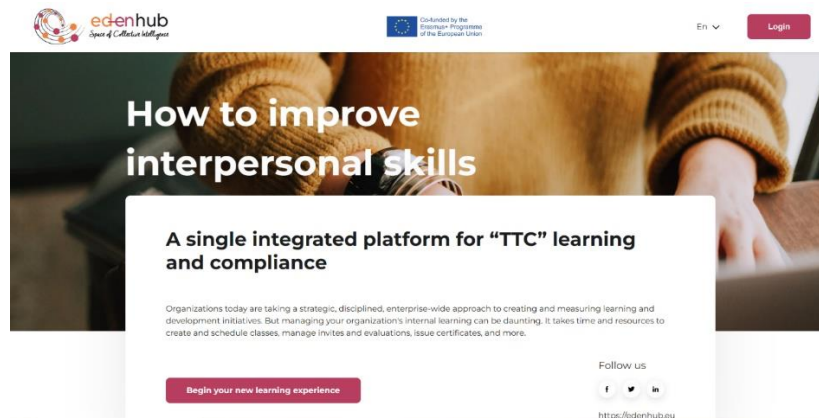


FIGURE 11 - FRONT PAGE OF THE PLATFORM.

Step 2 (login) – Logging in is usually used to enter the platform. Once the user is logged in (by adding his/her username and password), he/she can access the platform. The login token may be used to track what actions the user has taken while connected to the platform. The logging page of the Platform is shown in Figure 12.

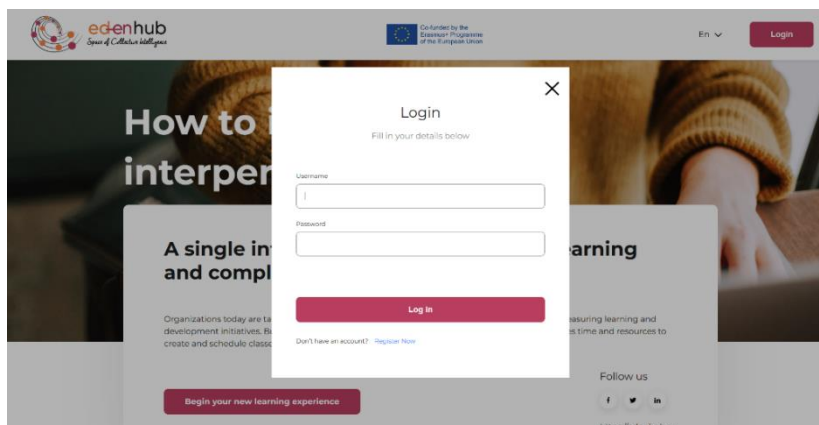


FIGURE 12 — LOGGING PAGE OF THE PLATFORM.

Step 3 (Creating a new account) – In this step, the platform is ready to create a new account. On a higher level, what the platform needs to do is store in the database the email and password of the user which will let him/her into his/her account. The page for creating a new account is shown in Figure 13.

Step 4 (Self-assessment) – In this step, the user can proceed with assessing their Transversal Competences. The self-assessment practice in the platform can help users reflect on their work or skills. The page for self-assessment is shown in Figure 14.

FIGURE 13 – PAGE FOR CREATING A NEW ACCOUNT.

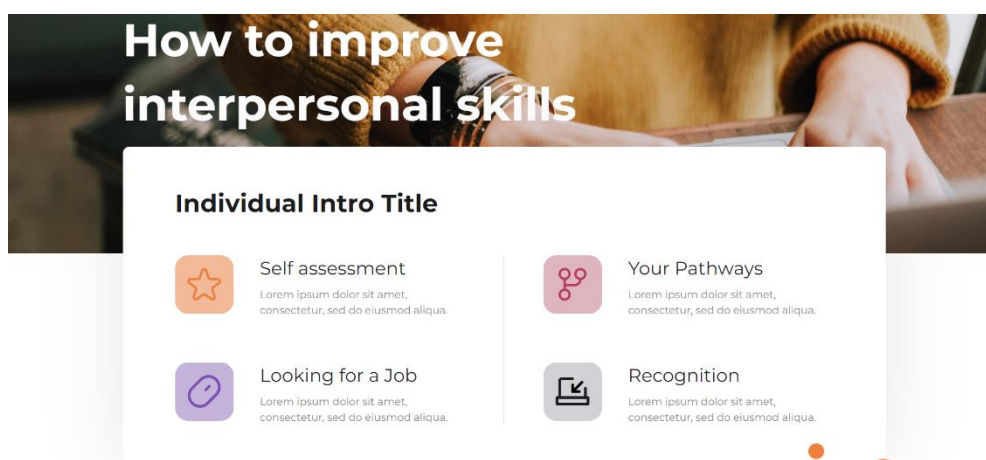


FIGURE 14 – PAGE FOR SELF-ASSESSMENT.

Step 5 (Choosing the category) – In this step, the user can choose one or some categories of the Transversal Competences that he/she wants to develop. As mentioned earlier and also shown in Figure 15 there are nine categories of Transversal Competences (Relational, Responsibility, Organisation, Self Regulation, Reflexive, Creativity, Digital, Communication, and Learning). Choosing the categories of Transversal Competences is directly related to the types of Transversal Competences that the target job requires. Therefore, it is important for users to choose the right categories. As depicted in Figure 15, in this example, the user has chosen the category of Reflexive.

In which category do you want to self-assess yourself (Path: Self)

Note: The ones in orange were already assessed by you – you may redo them. This radar graph represents the assessment results made by you so far.

Choose the category

- Communication
- Creativity
- Digital
- Learning
- Organisation
- Reflexive
- Relational
- Responsibility
- Self Regulation

Back

Next

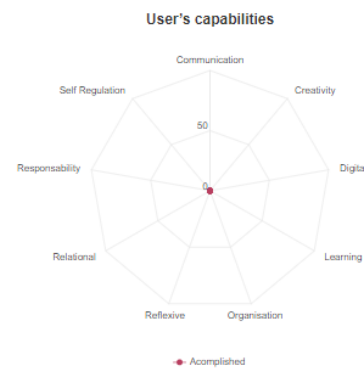


FIGURE 15 – PAGE FOR CHOOSING THE TCS CATEGORIES.

Step 6 (Choosing the competence) – In this step, the user can choose the TCs (that he/she likes to develop) related to the chosen category (Reflexive). As illustrated in Figure 16, the user chose the open mind/cognitive flexibility competence.

Please select the competences.

Choose the competences

- Open mind/cognitive flexibility
- Stepping Back for Problem Diagnosis and Understanding
- Developing Competence in Data Analysis and Interpretation

Back

Next

FIGURE 16 – PAGE FOR CHOOSING THE COMPETENCES.

Step 7 (Answering the questionnaire) – When the desired competences are chosen by the user, the platform will then suggest a questionnaire containing some related questions. The user has to answer the questions relying on his/her background knowledge and

experience. In this step, the related knowledge and experience of the users will be gauged. Figure 17 shows the answers given by the users.

edenhub
Space of Collective Intelligence

Co-funded by the Erasmus+ Programme of the European Union

En ▼ [logout](#)

Please answer the following questionnaire

1. What are some ways to develop the Open mind/cognitive flexibility competence in reflexivity?

- By sticking to one mental set, task, or strategy without considering other options
- By judging others based on their mental sets, tasks, or strategies
- By practicing curiosity, flexibility, and non-judgmental mindsets to switch between different mental sets, tasks, or strategies

2. How does an organization contribute to managing risk and uncertain situations?

- By creating rigid plans that eliminate uncertainty
- By providing a structure for prioritizing tasks and managing time effectively
- By avoiding uncertain situations altogether.

3. What are the benefits of becoming a self-directed learner?

- Limited personal and professional growth opportunities.
- Increased ability to adapt to new challenges and opportunities
- Dependence on others for learning.

[Back](#) [Next](#)

FIGURE 17 — PAGE FOR ANSWERING THE QUESTIONNAIRE.

Step 8 (Choosing activities) – In this step, the platform shows (a) the results of the questionnaire, and (b) the list of related activities that the user can take. As displayed in Figure 18, activity number 69 (activity to understand the importance of lifelong learning) is suggested to the user which is related to the competence of 'open mind/cognitive flexibility'.

edenhub
Space of Collective Intelligence

Co-funded by the Erasmus+ Programme of the European Union

En ▼ [logout](#)

Plan Element

Questionnaire Results ×

Open mind/cognitive flexibility: 33%

Activity 69
Activity to Understand the importance of lifelong learning
[View](#)

Activity 66
Activity to test making decisions under uncertainty
[View](#)

[Ask for PG](#) [Create Plan](#)

FIGURE 18 — PAGE FOR SUGGESTED ACTIVITIES TO BE TAKEN.

Step 9 (Viewing activities) – In this step, the user can open and view the suggested activity and then proceed with taking that. Figure 19 shows the view page of the activity to understand the importance of lifelong learning.

Activity to Understand the importance of lifelong learning



Acronym

AULL_B

Description

this activity intends to Understand the importance of lifelong learning and the benefits of becoming a self-directed learner.

Level

Beginner

Activity element

Learning to Learn: Building the Foundation for Lifelong Learning

Class requirements

→ [Notebook](#)

Keywords

[Engineering](#); [Nontechnical skills](#); [Transversal skills](#)

[Apply now](#)

MORE INFORMATION

Certification Info

edenHUB Certification

Total duration

4

Skill Level

[Beginners](#)

Assesment Method

→ [group project](#)

→ [Written assignments](#)

→ [Assessment rubric for teamwork](#)

FIGURE 19 — PAGE FOR VIEWING THE SUGGESTED ACTIVITY.

B. ACCESS TO THE PLATFORM FROM ADMINISTRATIVE USERS' POINTS OF VIEW

The following section presents some examples of the pages related to the functions and activities that the administrative users can access:

Example 1 (Page for activity checking) – As mentioned previously in step 8, when the activity is suggested by the platform, the administrator can access some related information such as the title (of the activity), level, acronym, description, activity question(s), activity element(s), and prerequisites. Figure 20 shows the related information to the activity of 'activity to understand the importance of lifelong learning' from an administrative point of view.

The screenshot displays the administrative interface for editing an activity. The main content area includes fields for Title, Level, Acronym, Description, and Text format. Below these are three Activity Question entries, each with an Edit button. The Activity element section shows a search bar with the text 'Learning to Learn: Building the Foundation for Lifelong Learning' and a search icon. The Image section shows a preview of 'Learning.jpg' with a close button and a message: 'The maximum number of media items have been selected.' The Prerequisites section has a search bar and an 'Add another item' button. The right sidebar contains 'Published' information (Last saved: 06/07/2023 - 21:51, Author: edenhubgestor), a 'Create new revision' toggle, a 'Revision log message' field, 'Current state: Published', a 'Change to:' dropdown, a 'Delete' button, 'URL alias' (Automatic alias), 'Generate automatic URL alias' (checked), 'URL alias' (activity/activity-understand-importa), 'Authoring information' (By edenhubgestor (25) on 2023-05-31), and 'Promotion options' (Not promoted).

FIGURE 20 — PAGE FOR ACTIVITY CHECKING.

Example 1 (Page for editing terms) – In this page, the administrators can edit the information (e.g., name, competence acronym, description, URL alias, and generic questions) related to the competences. Figure 21 shows the information related to the competence ‘Open mind/cognitive flexibility’ that can be edited by the administrators.

The screenshot shows a web interface for editing a term. At the top, there are navigation links: 'Back to site', 'Open mind/cognitive flexibility', and 'Edit Taxonomy term'. On the right, there are user-related links: 'Shortcuts', 'Devel', and 'edenhubgestor'. The main heading is 'Edit term'. Below this, there are tabs for 'View', 'Edit' (which is active), 'Delete', and 'Devel'. The form contains several fields: 'Name' with the value 'Open mind/cognitive flexibility', 'Competence Acronym' with 'RXOM', and 'Description' with a rich text editor containing the text: 'Open mind/cognitive flexibility in reflexivity is the ability to switch between different mental sets, tasks, or strategies using curious, flexible, and non-judgmental mindsets, which promotes personal growth and empathy toward others.' Below the description is a 'Text format' dropdown set to 'Basic HTML'. There is also a 'URL alias' field. A 'Published' toggle switch is turned on. At the bottom right, there is a 'Show row weights' link. The 'Generic questions' section contains three 'Competence quiz' entries, each with a 'Question' and an 'Edit' button. The questions are: 'What is the Open mind/cognitive flexibility competence in reflexivity?', 'Why is the Open mind/cognitive flexibility competence in reflexivity important?', and 'What are some ways to develop the Open mind/cognitive flexibility competence in reflexivity?'. Below this is an 'Add Competence quiz' button and a 'Relations' field. At the bottom, there are 'Save' and 'Delete' buttons.

FIGURE 21 — PAGE FOR EDITING TERM.

REFERENCES

1. Wikipedia, retrieved from: https://en.wikipedia.org/wiki/Search_engine
2. Majid Zamiri., Luis M. Camarinha-Matos.: Mass Collaboration and Learning: Opportunities, Challenges, and Influential Factors. *Appl. Sci.* 2019, 9(13), 2620; <https://doi.org/10.3390/app9132620>
3. Mike Wills.: Managing the Training Process: Putting the Principles into Practice. In: *Business & Economics* – pp: 321 pages, Gower Publishing, Ltd, 1998.
4. Ken Friedman.: Enhancing the Curricula: Exploring Effective Curricula Practices in Art, Design and Communication in Higher Education. The 1st International Conference of the Centre for Learning and Teaching in Art and Design (CLTAD), London, United Kingdom, 10-12 April 2002 / Allan Davies (ed.), no. 1, pp: 27-63.
5. Diogo Casanova., António Augusto de Freitas Gonçalves Moreira., Nilza Costa.: Key competencies to become an e-Learning successful instructor, 2009. DOI: 10.13140/2.1.4176.8326
6. Ruth Deakin Crick.: Key Competencies for Education in a European Context: narratives of accountability or care. *European Educational Research Journal*, 7(3), 2008.