



**Versatile and
Innovative open educational resources for collaborative
Virtual and mobile learning
Arrangements in HE**



VIVA R2 Report

2.1 Repository of Competences

2.2 Competence Framework

2.3 Catalogue of Assessment Tools



**Funded by
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.



This deliverable was created as part of the project VIVA, coordinated by Vilnius University (LT) in collaboration with University Novi Sad (RS), Aristotele University Thessaloniki (EL), University Duisburg-Essen (DE), ~~blinc eG, (DE), Smart Revolution (IT)~~



Index

Part 1: Repository of Competences.....	4
1. Introduction.....	4
2. Explanatory Approach.....	5
2.1. Digital Literacy.....	6
2.1.1. Introduction.....	6
2.1.2. Models of Learning.....	7
2.1.3. Theoretical Facets of the Digital Literacy Concept.....	7
2.1.4. Working definition & study overview.....	9
3. Repository of Competences.....	10
Part B: Competence Frameworks.....	13
4. Field Competences on Data and Digital Literacy.....	14
4.1. Competence descriptions & Reference Systems on Digital Literacy.....	14
4.1.1. REFERENCE SYSTEM – Digital Literacy.....	16
4.1.2. REFERENCE SYSTEM – Computer Literacy.....	17
4.1.3. REFERENCE SYSTEM – Internet Literacy.....	18
4.1.4. REFERENCE SYSTEM – Information Literacy.....	19
4.1.5. REFERENCE SYSTEM – Media Literacy.....	20
4.1.6. Reading and Creating Data Visualization.....	21
4.1.7. Digital content creation.....	24
5. Social, Personal and Organisational Competences.....	27
5.1. Client orientation.....	27
5.2. Entrepreneurship.....	29

5.3. Problem solving	32
5.4. Leadership	35
5.5. Project Management.....	38
5.6. Planning and Resource Management	41
5.7. Intercultural Communication	44
5.8. Communication	48
5.9. Teamworking.....	51
5.10. Flexibility/Adaptability	54
5.11. Critical Thinking.....	57
5.12. Networking.....	60
5.13. Creativity	63
5.14. Evaluating/Reflecting	65
6. Catalogue of Assessment Tools.....	67
6.1. Introduction.....	67
6.2. Methods and Data Collection.....	67
• Reflective Learning Diary	68
• Concept Map	68
• Group Discussion	69
• Personal (informal) Interview	69
• Method of data collection	70
• Questionnaire/	70
• Test/Exam	70
• Self assessment/	71
• Checklist	71



- **Observation.....**73
- **(E-)Portfolio.....**74
- **Games.....**75
- **Case study.....**75
- **Essay.....**76



Part 1: Repository of Competences

1. Introduction

A competence inventory is an open catalogue of competences that are relevant for education on data and digital literacy. The concept of an inventory implies that it is neither a closed repository nor a compulsory catalogue from which all items have to be selected.

As VIVA is a two years project we expect that more competences will be detected and described along our taxonomy which is based on the LEVEL5 system.

Content wise the Competence Inventory has been based on the results of a survey among stakeholders on the question of which competences are most relevant in the context of data and digital literacy at (technical) Universities.

Digital literacy was described as a concept which is not only aiming processing and management of digital information but also on the idea of a digitalisation “culture”.

Hence also the initial question of the survey was what the experts from different economical sectors, among them experts from science and practice consider as digital literacy and “digital literacy competences” and how they are to be acquired in modern (versatile) learning settings.

Based on this, LEVEL5 reference systems have been developed. These reference systems form the basis for the assessment and validation of the competences of students.

In order to ensure the connectivity of the results of the validation method to other European validation systems, in particular EQR, ECVET and EUROPASS, the VIVA competences are clustered according to the sub-competences in the sections domain specific “field” competences (related to digital literacy, data processing and management and “personal skills and competences” of the EUROPASS system, such as:

- Personal competences,
- Social competences,
- Organisational competences.

The Field competences are normally covered by the “traditional” teaching and learning programmes of the universities.

In VIVA this may refer to knowledge and skills related for instance of Computer Sciences but also to cross-cutting competences for other study domains like how to retrieve and process data and even more generally, how to deal with data in a critical way.

2. Explanatory Approach

Literacy is a wide concept...

- Viewed as a flexible set of knowledge, skills and attitudes that are closely linked to context and purpose¹

Competence Frameworks are...

- Sets of competences required to perform in a specific professional and/or life context, while
- Competences are described in taxonomies (e.g. the Bloom's Taxonomy, EQF, LEVEL5)

Key-Competence concepts (literacies) related to Digital literacy may refer to:

1. Handling digital information formats in professional Higher Education contexts in general

➔ Digital (Critical Thinking) Literacy (*main application field in VIVA*)

2. *Data collection and Interpretation in Information Technology related Research& Development in Higher Education**

➔ *Data Processing Competences (not in the focus of VIVA)*

3. Specialist Data processing in Information Technology study fields²

➔ *Data Management Competences (not in the focus of VIVA)*

Additionally, there are of course “generic” competences that are needed to “act out” these competences in situations where they are needed (so called “action fields”). These generic competences can be clustered in Social, Personal and Organisational Competences.

Eventually VIVA also takes on board teaching, training and supporting competences to acquire digital literacy.

In the following chapter we will refer to the first Literacy aspect to derive and illustrate the backing ideas of our competence-oriented learning and validation approach to Digital Literacy.

¹ Jimoyiannis A. (2015). Digital Literacy and Adult Learners. In M. J. Spector (ed.), The SAGE Encyclopedia of Educational Technology

² Framework Future Skills Data Literacy (2019)

2.1. Digital Literacy

2.1.1. Introduction

The ability to orientate oneself in the digital world is becoming increasingly relevant for all areas of life. The term “digital literacy” tries to encompass the area of education that enables people to obtain information and communicate through and with digital media. For a more precise definition of the term, the “literacy term” should first be described in more detail below. Then the term literacy is placed in the context of digitization and a working definition of “digital literacy” is formulated.

Literacy is defined more broadly in the English discourse than the concept of literacy in German. While in German the focus is more on the written culture, literacy refers to a general, normative basic competence that can be acquired and disseminated independently of culture. It is imposed on the individual as a precondition for social participation in developed societies organized in writing. In addition to reading and writing skills, an extended literacy concept includes, in particular, the ability to deal with knowledge - from access to integration and management to evaluation (Tröster & Schrader 2016, S. 51–52).

Belshaw (2014) criticizes the traditional literacy concept for neglecting social aspects of literacy and restricting itself to the cognitive aspect. Belshaw argues that literacy is an inherently social phenomenon and relies on Lemke (2002). Lemke describes that all human actions, even in complete isolation, take place in a social and cultural context.

„Even if we are lost in the woods, with no material tools, trying to find our way or just make sense of the plants or stars, we are still engaged in making meanings with cultural tools such as language (names of flowers or constellations) or learned genres of visual images (flower drawings or star maps). We extend forms of activity that we have learned by previous social participation to our present lonely situation (Lemke, 2002, 36-37).“

Belshaw (2014) differentiates literacy into two different types of knowledge: tool knowledge and content knowledge. Tool knowledge describes the knowledge to use certain aids (e.g. writing tools) in order to be able to carry out an action. Content knowledge describes the message from the sender to the recipient of the communication. The common link between the two types of knowledge forms the reason for communication: social activity.

For hundreds of years tool-knowledge has been static, centred around the printing press and the pen. Tool-knowledge has been taken for granted whilst we’ve come to accept that advances in content knowledge affect literacy. We represent new ideas using existing tools and methods of expression. Things, however, have changed with new electronic forms of communication and, in particular, the rise of the World Wide Web. With the emergence of new means of communication, e.g. email, social networks, video platforms such as You-

Tube, new forms of (micro) literacy have emerged. The definition of which is mostly limited to the tool of communication and content knowledge and without a social component. It is therefore more expedient to formulate a broader concept of literacy.

2.1.2. Models of Learning

Belshaw (2014) regards the traditional concept of learning as a linear process in formal education as problematic. Most models of learning assume that learning is linear and hierarchical. Belshaw (2014) argues that this is particularly not the case for digital skills, as these are mostly acquired in an informal context. The triggers are mostly specific situations that are asked of a person. In addition, an appropriate context is necessary for learning. The domain specificity of learning is also described by Greeno (1998). The learning of certain skills and abilities always takes place in a relevant context that enables pattern recognition. When presented with something for the first time it's almost impossible to learn the skill independently from the context in which it's performed. We learn in a concrete way first and can only abstract from this later as we become more proficient (see also Structure of Observed Learning Outcomes (SOLO) taxonomy). The SOLO taxonomy describes learning on the basis of the continuum of understanding from a pre-concept to an expanded abstract understanding that enables generalization and transfer to other contexts. Belshaw (2014) argues, using the SOLO taxonomy, that a literal person in general has the ability to decontextualize knowledge.

2.1.3. Theoretical Facets of the Digital Literacy Concept

In his model of digital literacy, Belshaw (2014) describes eight constituent elements that address both cognitive and social aspects of the concept of literacy. These core elements represent building blocks for the formulation of a working definition of digital literacy.

1. **Cultural:** The cultural aspect is closely related to the concept of context. There are many different contexts that an individual may experience, not only over the course of a lifetime, but simultaneously. The occurrence of simultaneous contexts requires a high level of adaptation from the individual. This is especially true for digital formats. For example, while a formal style predominates in an e-mail, a formless style usually applies to short message services. The seamless adequate transition from one digital environment to another is therefore a facet of digital literacy.

2. **Cognitive:** The cognitive aspect of the term literacy describes the underlying dimensions of knowledge and knowledge acquisition processes. In the Anglo-American language area, the term literacy is closely linked to cognitivist and (socio-) constructivist learning theories.

Depending on the chosen approach, the perceptions of knowledge, knowledge acquisition and transfer processes as well as motivational activation differ. A cognitivist approach to understanding literacy is chosen here, as this is also used in the tradition of the debate about the operationalization and measurement of competencies. However, it should be mentioned that the (socio-) constructivist approach is also relevant in principle in order to address the aforementioned duality of the literacy concept. It is essential to know how to participate in social interactions (e.g. political processes). Patterns of social coexistence inherent in groups represent an important component. The taxonomy of Marzano & Kendall (2006, 2008) can be used to operationalize the cognitive component of the literacy concept. The reason for this is that it records the knowledge dimensions in information-related, mental and psychomotor processing and action processes. The advantage here is that not only the cognitive access to the knowledge is recorded, but also metacognitive & motivational patterns of action, which are needed for certain requirement situations. With this model, the characteristics of learning and work situations can therefore be described more comprehensively.

3. **Constructive:** Lankshear & Knobel (2006) emphasize that literacy is always related to something. The construction process (e.g. in the form of knowledge or a thing) is in the foreground. Allan Martin (2005) expands upon this when he states that literacy in a digital world involves using digital tools appropriately to enable constructive social action. Construction in the digital world can differ significantly in quality from the analog world. In the digital world, existing work can be reproduced with minimal effort. The constructive aspect is therefore not the actual creation process, but the subsequent dissemination process in the form of parts on platforms, discussions about the content or the like. The *constructive* element of digital literacy therefore involves knowing how and for what purposes content can be appropriated reused and remixed.

4. **Communicate:** The literacy inherent is always a specific reason for communication. Therefore, the communicative element is closely related to the constructive element, as a form of communication takes place through the distribution of content. After all, communicating effectively using a particular digital technology involves knowing, understanding and applying certain norms and assumptions. These can vary subtly from (for example) social network to social network. Communication protocols are therefore important components for dealing with digital media and should be practiced, since the communicative element, due to the social aspect of the literacy concept, is always latent.

5. **Confident:** The confident aspect can best be compared with the concept of self-efficacy by Bandura. According to Belshaw (2014), self-confidence describes the ability to deal with the difference between the digital and the analogue world. Therefore, problem solving, and competent handling of the digital environment are relevant for the development of self-confidence in the digital context.

6. **Creative:** Creativity in general involves creating something new that has some value. The value of the new depends on the underlying context. In this context, creativity is not equated with originality. The creative element of digital literacies is about doing new things in new ways that somehow add value. The focus is on the use of digital instruments to create or achieve new things that could not previously be achieved with analog means. In addition to problem solving, problem finding should be in the foreground. The SAMR model by Puentedura (2010) in the context of teaching-learning research can be mentioned here as an example. The creation of value does not arise through the mere substitution of analog aids with digital aids, but rather through significant changes to existing tasks or the creation of new tasks that can only be created and solved using digital aids. Therefore, developing this creative element of digital literacy involves two elements, both of which follow from the SAMR diagram. Firstly, existing learning activities should be significantly redesigned to take account of the affordances of digital technology. Secondly, the ability of people to be creative (as defined above) requires a level of freedom and a change in the dynamic between teacher and learner. The learner also joins the dots in new, interesting and contextually relevant ways.

7. **Critical:** The Critical element is the closest digital literacies it comes to conception of 'Media Literacy. Every medium is constructed and itself constructs reality, so the information transported by the medium must be critically examined for implications, political ideologies and agendas, etc. (Aufderheide, 1993; Koltay, 2011). This includes, for example, checking the seriousness of the medium. Becoming more advanced in the Critical element of digital literacies involves thinking about your own literacy practices. It involves reflecting on how they have come about, what has influenced you, and how your actions affect others.

8. **Civic:** The civic aspect takes up the common good orientation of the literacy concept and represents a normative educational goal. The citizen should not only be able to deal competently with the digital media and be able to act in them, but also orient his actions towards the common good.

2.1.4. Working definition & study overview

The formulation of a working definition of digital literacy is difficult in that the term depends on the social practices, standards or times associated with it. A working definition is to be formulated here based on the eight core elements of digital literacy described above.

Digital literacy enables the individual to acquire context-specific knowledge about digital media and to use it competently and responsibly as well as to apply it in a targeted manner in context-varying situations. The individual uses the ability to identify problems in a digital context and to be able to solve them creatively. In addition, digital literacy is to be understood

as the ability to (self-) critically examine the search, selection, use and construction of information in a digital context.

Measuring digital literacy in all its breadth is challenging. The PIAAC study of the OECD, technology-based problem-solving skills were surveyed in adults. These were defined as the competence to use digital technologies, communication aids and networks successfully for the search, conveyance and interpretation of information and are aimed at the *tool knowledge* of individuals. The ICLIS study examined the computer and information-related competencies of school students. The underlying construct, ICT literacy, aims, in addition to program application, to critically select information using digital media and to use it effectively, but also to generate it, and shows a striking similarity to digital literacy. The difference is that ICT literacy can on the one hand be subsumed under the digital literacy concept and on the other hand the focus of the digital literacy concept is more on the use of digital tools to create values of all kinds and not just on the mere program application. Rheingold (2009) particularly emphasizes civic engagement in digital literacy and classifies digital literacy in the concept of 21st century skills (OECD, 2008). The ICILS study 2013, as well as the follow-up study 2018, that in Germany a significant proportion of each year group only have rudimentary skills and basic knowledge in the competent use of new technologies and digital information and can be described as "functional digital illiterates". The PIAAC study comes to similar results. More than half of the population has little or no computer experience and showed significantly poorer reading skills. It can be assumed that adults with only few digital skills and low literacy are facing significantly greater challenges on the labor market.

The increasing digitization of our society requires that digital literacy in schools, universities and further education areas become a more relevant subject of learning. More and more areas of knowledge are acquired through digital media, which is why digital literacy is a basic requirement for an individual's ability to connect to participate in social and economic life.

3. Repository of Competences

The VIVA competence repository is a derived four field cluster based on different competence theories (e.g. Erpenbeck, Sauter 2014, REVEAL group 2016/2019) and the domain specific field competences. The latter have been described thoroughly in the VIVA stocktaking phase. It consists of a set of the following sub-competences :

Competences related to Data Literacy

<p>Domain specific („Data“) Competences</p> <ol style="list-style-type: none"> 1. Digital literacy 2. Data Processing Literacy 3. Data Management Literacy • Dependent on the study field 	<p>Social Competences</p> <ol style="list-style-type: none"> 1. Teamwork (Intercultural) 2. Communication 3. Leadership: Conflict resolution, 4. Client orientation, Mobilising others
<p>Organisational Competences</p> <ol style="list-style-type: none"> 1. Project Development 2. Resource Planning; Mobilising resources 3. Evaluation 4. Networking 5. Entrepreneurial Competences <i>Creating ideas and opportunities</i> 	<p>Personal Competences</p> <ol style="list-style-type: none"> 1. Creativity 2. Problem Solving 3. Critical (Ethical and sustainable) thinking 4. Flexibility Coping with ambiguity, uncertainty and risk

Fig. 1: The VIVA Competence clusters

The derived VIVA competence repository is a four-field cluster³ with 16 competences which can be listed as follows:

1. Digital Literacy Competences
 - Digital Literacy (with additional sub-competences)
2. Social Competences
 - Intercultural Communication
 - Communication
 - (Intercultural) Teamwork
3. Personal Competences
 - Flexibility/Adaptability
 - Critical thinking
 - Creativity
 - Leadership
4. Organisational Competences
 - Project Management
 - Planning and Resource Management
 - Networking
 - Evaluating/Reflecting
 - Client Orientation
5. Competences related to mentoring and coaching
 - Planning COL for Digital Literacy (DL)
 - Delivering COL and Trainings for DL

³ based on different competence theories and models (e.g. Research voor Beleid (2006), Erpenbeck, Sauter 2014, REVEAL group 2016/2019).

- Validating DL Competences

Sub-Competences related to Data and Digital Literacy

Digital Literacy:

Computer literacy	It is determined by the basic operational skills regarding computers and software applications
Internet literacy	This dimension relates to the ability of individuals to successfully function in Internet resources and networked environments
Media literacy	It is the ability to access, understand, critically evaluate, participate and create media content and communications in a variety of forms and contexts
Information literacy	Information literacy reflects the ability to identify, access, evaluate, manipulate and create information
Digital content creation literacy	To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.
Data visualisation	To select data visualisation tools relevant to the audience expectations and abilities (i.e., academic, business, science, etc). To be able to deliver information using various graphic tools.

Part B: Competence Frameworks

As outlined before, “Field Competences” will be described in the first sections. The social, personal and organisational competences in the following chapters closed by the competences for the facilitators.

The competences will be thoroughly described by:

1. Descriptions consisting of a *competence summary* and aspects what a learner should *know, be able to do* and respective *attitudes* related to these competences.
2. A reference system which clusters knowledge/skills/attitudes along 5 levels.

It is of major importance to relate the competences to the contexts and the action fields – the professional context in which a person is supposed to perform certain tasks. If we look at “computer literacy” the necessary knowledge and skills are dependent on the devices and the apps that a person works with.

Hence all the reference systems presented below have to be substantiated in relation to their context – the area of intervention, the target group (users), purposes and resources in order to operationalise them in learning settings or validation.

1. Digital Literacy Competences
 - Digital Literacy (with additional sub-competences)
2. Social Competences
 - Intercultural Communication
 - Communication
 - (Intercultural) Teamwork
3. Personal Competences
 - Flexibility/Adaptability
 - Critical thinking
 - Creativity
 - Leadership
4. Organisational Competences
 - Project Management
 - Planning and Resource Management
 - Networking
 - Evaluating/Reflecting
 - Client Orientation
5. Teaching and Training Competences
 - Planning COL for Digital Literacy (DL)
 - Delivering COL and Trainings for DL
 - Validating DL Competences

4. Field Competences on Digital Literacy

4.1. Competence descriptions & Reference Systems on Digital Literacy

The formulation of a working definition of digital literacy is difficult in that the term depends on the social practices, standards or times associated with it. A working definition is to be formulated here based on the eight core elements of digital literacy described above.

Digital literacy enables the individual to acquire context-specific knowledge about digital media and to use it competently and responsibly as well as to apply it in a targeted manner in context-varying situations. The individual uses the ability to identify problems in a digital context and to be able to solve them creatively. In addition, digital literacy is to be understood as the ability to (self-) critically examine the search, selection, use and construction of information in a digital context.

Though we have created general competence model and reference system for Digital Literacy we consider it important to introduce at least 4 sub-competences of DL

- Computer literacy (ICT literacy): It is determined by the basic operational skills regarding computers and software applications
- Internet literacy: This competence relates to the ability of individuals to successfully function in Internet resources and networked environments
- Information literacy: Information literacy reflects the ability to identify, access, evaluate, manipulate and create information
- Media literacy: It is the ability to access, understand, critically evaluate, participate and create media content and communications in a variety of forms and contexts.

A competent person is pro-active and motivated to take the initiative and has a positive attitude towards the 4 different aspects of digital literacy.

Knowledge and skills: The learner knows

- How to operationalise IT based tools like computers, smartphones, tablets and the respective software applications,

- How to access, utilise and critical interpret Internet resources and networking environments
- How to identify, access, evaluate, manipulate and create information
- How to access, understand, critically evaluate, participate and create media content and communications in a variety of forms and contexts.

Skills: The learner is able to

- How to operationalise IT based tools like computers, smartphones, tablets and the respective software applications,
- How to access, utilise and critical interpret Internet resources and networking environments
- How to identify, access, evaluate, manipulate and create information
- How to access, understand, critically evaluate, participate and create media content and communications in a variety of forms and contexts.

Attitudes: The learner

- has a positive but nevertheless critical attitude towards Computer literacy, Internet, digitally provided information and media
- is pro-active and motivated to take the initiative in regard to these 4 aspects
- is willing to undertake risks to achieve his/her vision
- has a positive attitude towards innovation and development regarding these aspects
- appreciates collaboration in this field
- has an ethical consciousness towards digitalisation

4.1.1. REFERENCE SYSTEM – Digital Literacy

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to transfer digitalisation concepts into other contexts. Knowing how to help other people act successfully in different digitalisation structures in this respect.	Developing, constructing, transferring	Being able to transfer digitalisation strategies into new professional and personal contexts. Actively planning and creating new digitally based activities.	Incorporation	Having internalised digitalisation as a personal and professional key competence and the respective mindset. Being an inspiration for others in their digitalisation activities.
4	Knowing when (implicit understanding)	Knowing when (in which situation and to which extent) to apply suitable digital instruments and tools. To know how to analyse and evaluate digitalisation also critically	Discovering acting independently	Deliberately searching for and selecting appropriate digital techniques and instruments for the own professional and personal field. Discovering new digital tools and approaches for the own context and professional domain.	Self-regulation, Commitment	Being determined and pro-active in using and improving digital literacy in the own environment. Finding it important to be creative in this respect.
3	Knowing how	Theoretically knowing different approaches, techniques and instruments related to: <ul style="list-style-type: none"> • ICT literacy: • Internet literacy • Information literacy • Media literacy 	Deciding/ selecting	Taking part in relevant digital application activities as they are offered by others in safe (undisturbed) contexts. Choosing singular digital tools and activities from a given (known) portfolio	Motivation/ appreciation	Valuing digitalisation in general. Being motivated to develop own digital literacy.
2	Knowing why (distant understanding)	Having basic understanding on relevant aspects of digitalisation related to digital (ICT) devices, Internet, social and digital media and information technology	Using, imitating	Occasionally taking part in non structured activities related to digital tools, instruments and digitalisation. Operate computers and digital devices or to use general purpose software and Internet services.	Perspective taking	Being curious and interested in certain aspects related to digital tools and digitalisation
1	Knowing what	Knowing that digitalisation is based on ICT .	Perceiving	Perceiving and recognising digital tools without taking actions or reflecting on them	Self-orientation	Perceiving digital tools without relating it to oneself.

4.1.2. REFERENCE SYSTEM – Computer Literacy

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to transfer digital tools into other contexts. Knowing how to help other people act successfully in different digitalisation structures in this respect.	Developing, constructing, transferring	Being able to transfer digitalisation tools into new professional and personal contexts. Actively planning and creating new digitally based activities.	Incorporation	Having internalised digitalisation as a personal and professional key competence and the respective mindset. Being an inspiration for others in their digitalisation activities.
4	Knowing when (implicit understanding)	Knowing when (in which situation and to which extent) to apply suitable digital instruments and tools. To know how to analyse and evaluate digital tools also critically	Discovering acting independently	Deliberately searching for and selecting appropriate digital instruments for the own professional and personal field. Discovering new digital tools and approaches for the own context and professional domain.	Self-regulation, Commitment	Being determined and pro-active in using and improving digital tools and instruments in the own environment. Finding it important to be creative in this respect.
3	Knowing how	Theoretically knowing different approaches, techniques and instruments related to: <ul style="list-style-type: none"> ICT literacy: 	Deciding/ selecting	Taking part in relevant digital application activities as they are offered by others in safe (undisturbed) contexts. Choosing singular digital tools and activities from a given (known) portfolio	Motivation/ appreciation	Valuing digitalisation in general. Being motivated to develop own competences related to digital tools.
2	Knowing why (distant understanding)	Having basic understanding on relevant aspects of digitalisation related to digital (ICT) devices	Using, imitating	Occasionally taking part in non structured activities related to digital tools Operate computers and digital devices or to use general purpose software and Internet services.	Perspective taking	Being curious and interested in certain aspects related to digital tools
1	Knowing what	Knowing that digitalisation is based on computers and digital tools .	Perceiving	Perceiving and recognising digital tools without taking actions or reflecting on them	Self-orientation	Perceiving digital tools without relating it to oneself.

4.1.3. REFERENCE SYSTEM – Internet Literacy

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to transfer internet based concepts into other contexts. Knowing how to help other people act successfully in different digitalisation structures in this respect.	Developing, constructing, transferring	Being able to transfer internet based strategies into new professional and personal contexts. Actively planning and creating new digitally based activities.	Incorporation	Having internalised digitalisation as a personal and professional key competence and the respective mindset. Being an inspiration for others in their digitalisation activities.
4	Knowing when (implicit understanding)	Knowing when (in which situation and to which extent) to apply suitable internet based instruments and tools. To know how to analyse and evaluate digitalisation also critically	Discovering acting independently	Deliberately searching for and selecting appropriate internet based I techniques and instruments for the own professional and personal field. Discovering new digital tools and approaches for the own context and professional domain.	Self-regulation, Commitment	Being determined and pro-active in using and improving internet based activities in the own environment in different contexts. Finding it important to be creative in this respect.
3	Knowing how	Theoretically knowing different approaches, techniques and instruments related to: <ul style="list-style-type: none"> Internet literacy 	Deciding/ selecting	Taking part in relevant internet based application activities as they are offered by others in safe (undisturbed) contexts. Choosing singular internet based tools and activities from a given (known) portfolio	Motivation/ appreciation	Valuing the use of the internet in general. Being motivated to develop own competences in regard to internet use.
2	Knowing why (distant understanding)	Having basic understanding on relevant aspects of digitalisation related to digital (ICT) devices, Internet, social and digital media and information technology	Using, imitating	Occasionally taking part in non structured activities related to digital tools, instruments and digitalisation. Operate computers and digital devices or to use general purpose software and Internet services.	Perspective taking	Being curious and interested in certain aspects related to the use of the internet
1	Knowing what	Knowing that digitalisation is based on Internet.	Perceiving	Perceiving and using internet without reflecting on them	Self-orientation	Perceiving internet without reflection

4.1.4. REFERENCE SYSTEM – Information Literacy

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to transfer concepts to identify, access, evaluate, manipulate and create information into other contexts. Knowing how to help other people act successfully in different digitalisation structures in this respect.	Developing, constructing, transferring	Being able to transfer strategies to identify, access, evaluate, manipulate and create information into new professional and personal contexts. Actively planning and creating new digitally based activities.	Incorporation	Having internalised a critical relation to digital information as a personal and professional key competence and the respective mindset. Being an inspiration for others in their digitalisation activities.
4	Knowing when (implicit understanding)	Knowing when (in which situation and to which extent) to apply suitable instruments and tools to identify, access, evaluate, manipulate and create information. To know how to analyse and evaluate digitalisation also critically	Discovering acting independently	Discovering new approaches to identify, access, evaluate, manipulate and create information for the own context and professional domain.	Self-regulation, Commitment	Being determined and pro-active in using and improving critical information concepts in the own environment.
3	Knowing how	Theoretically knowing different approaches, techniques and instruments related to: <ul style="list-style-type: none"> Information literacy 	Deciding/ selecting	Taking part in activities as to identify, access, evaluate, manipulate and create information as they are offered by others in safe (undisturbed) contexts.	Motivation/ appreciation	Valuing information creation and processing in general. Being motivated to develop own competences on that.
2	Knowing why (distant understanding)	Having basic understanding on relevant aspects of digitalisation related to digital (ICT) devices, Internet, social and digital media and information technology	Using, imitating	Occasionally taking part in non structured activities related to digital tools, instruments and digitalisation. Operate computers and digital devices or to use general purpose software and Internet services.	Perspective taking	Being curious and interested in certain aspects related to the creation and utilisation of information
1	Knowing what	Knowing that digitalisation is based on digital information .	Perceiving	Perceiving and digesting information without reflecting on them	Self-orientation	Perceiving information without relating it to oneself.

4.1.5. REFERENCE SYSTEM – Media Literacy

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to transfer digital media concepts into other contexts. Knowing how to help other people act successfully in different digitalisation structures in this respect.	Developing, constructing, transferring	Being able to transfer digital media strategies into new professional and personal contexts. Actively planning and creating new activities with digital media.	Incorporation	Having internalised digital media as a personal and professional key competence and the respective mindset. Being an inspiration for others in their digital media activities.
4	Knowing when (implicit understanding)	Knowing when (in which situation and to which extent) to apply suitable digital media and tools. To know how to analyse and evaluate digital media also critically	Discovering acting independently	Deliberately searching for and selecting appropriate digital techniques and instruments for the own professional and personal field. Discovering new digital tools and approaches for the own context and professional domain.	Self-regulation, Commitment	Being determined and pro-active in using and improving digital media in the own environment. Finding it important to be creative in this respect.
3	Knowing how	Theoretically knowing different approaches, techniques and instruments related to: <ul style="list-style-type: none"> Media literacy 	Deciding/ selecting	Taking part in relevant digital application activities as they are offered by others in safe (undisturbed) contexts. Choosing singular digital tools and activities from a given (known) portfolio	Motivation/ appreciation	Valuing digital media in general. Being motivated to develop own digital media.
2	Knowing why (distant understanding)	Having basic understanding on relevant aspects of digitalisation related to digital media	Using, imitating	Occasionally taking part in non structured activities related to digital tools, instruments and digitalisation. Operate computers and digital devices or to use general purpose software and Internet services.	Perspective taking	Being curious and interested in certain aspects related to digital media and digitalisation
1	Knowing what	Knowing that digitalisation is based on different digital media.	Perceiving	Perceiving and recognising digital media without taking actions or reflecting on them	Self-orientation	Perceiving digital media without relating it to oneself.

4.1.6. Reading and Creating Data Visualization

This competence refers to the ability to define and create data visualization.

A competent person should be able to design and implement through common tools a visualization of data like charts or maps in a simple and effective way.

A competent person has developed a critical approach regarding data visualization in order to identify presentation of data which is misrepresented or misleading.

Knowledge: The learner...

- knows how to read and analyze data through spreadsheet software
- knows how to modify data along a cleaning process
- has the knowledge base of most common charts and mapping models in order to define the best option to visualize the available data
- knows how to use the most common data visualization softwares in order to select the better one for his/her needs and for the context where the data visualization will be disseminated once created
- knows the common rules of data visualization in terms of accessibility and communication

Skills: The learner...

- is able to apply a variety of analysis techniques to explore data such as filtering, grouping and sub-grouping
- is able to manage the data cleaning process thanks to data normalization and data reconciliation techniques
- is able to merge data with other data in a methodologically correct way and with the aim of enriching information that can be extracted from data

- is able to handle data visualization tools with the most common features to create the most effective visualization

Attitudes: The learner...

- has curiosity to test data visualization tools and to keep himself/herself up-to-date with the ongoing debate related to data visualization
- has a critical approach to data visualization in terms of clarity, methodology and communication effectiveness
- is open to give and receive feedback about his/her outputs in order to improve it in clearer way
 - is determined to promote transparent and responsible data visualization

REFERENCE SYSTEM – Reading and Creating Data Visualization

		KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description	
5	Knowing where else (strategic transfer)	Knowing how to transfer “Reading and Creating Data Visualization” concepts into other contexts. Knowing how to help other people to act successfully in different fields of work and life in this respect, including respective computer programmes.	Developing, constructing, transferring	Being able to transfer “Reading and Creating Data Visualization” strategies into new professional and personal contexts. Actively planning and creating new respective activities.	Incorporation	Having internalised data visualization as a personal and professional key competence and the respective mindset. Being an inspiration for others in their respective data visualization activities and promoting transparency and responsibility	
4	Knowing when (implicit understanding)	Knowing when (in which situation and to which extent) to apply suitable tools and methods and data visualization techniques (ways of visualizing data) including respective computer programmes. To know how to analyse and evaluate various aspects of “Reading and Creating Data Visualization” also critically.	Discovering acting independently	Deliberately searching for and selecting appropriate data visualization techniques and instruments for one's own professional field and personal use including: <ul style="list-style-type: none"> • be able to apply a variety of spreadsheet tools and techniques for different data sets • be able to develop own data visualization strategies 	Self-regulation, Commitment	Being determined and pro-active in using and improving data visualization competence in familiar environment. Finding it important to be creative in this respect.	



				<ul style="list-style-type: none"> • be able to process in a methodologically correct way the results of the data analysis for different purposes • be able to create and test different kinds of data visualization with the results of data analysis <p>Discovering new tools and approaches for data visualization.</p>		
3	Knowing how	<p>Knowing the theory of different approaches, techniques and instruments (including relevant computer programmes) related to:</p> <ul style="list-style-type: none"> • reading and analysing data and how to use them in practice • selecting the right subset of data to be visualised • key components of the main data visualization software, e.g. qGIS, Datawrapper, Tableau Public, Microsoft BI, Google Data Studio, etc. and how to use it to visualize data 	Deciding/ selecting	<p>Taking part in relevant data visualization activities/courses and public debates as they are offered by others in safe (undisturbed) contexts.</p> <p>Choosing singular tools and methods, evaluation strategies and data visualization models including respective software from a given (known) portfolio.</p>	Motivation/ appreciation	<p>Valuing data in general and:</p> <ul style="list-style-type: none"> • having curiosity to test information and to seek evidence, being open to new ideas of data visualization. • Being sceptical about data visualization not supported scientifically, with a clear methodology and the possibility to access raw data; • Being self-critical about one's own data visualization, especially when facing new information, experience or conflicting evidence. <p>Being motivated to develop one's own respective data visualization competencies.</p>
2	Knowing why (distant understanding)	Having a basic knowledge of existing relevant tools and methods of "Reading Creating Data Visualisation", including respective computer programmes. Having a basic understanding	Using, imitating	Occasionally applying non-structured activities related to data visualization (using / imitating specific tools and methods, evaluation strategies and data	Perspective taking	Being curious and interested in certain aspects and the potential of data visualization and the respective computer programmes.

		how different types of data representation have different properties.		visualization models) including respective computer programmes.		
1	Knowing what	Understanding the importance of data visualization not only as an information instrument but also as a way to better interpret data.	Perceiving	Recognising the meaning of data visualization without taking actions or reflecting on them.	Self-orientation	Perceiving data visualization content without relating it to one's own professional and personal context.

4.1.7. Digital content creation

This Competence requires knowledge on selecting/finding digital content, evaluating, using, and creating digital content in meaningful and responsible ways. A competent person is capable to find digital content that is meaningful, to look critically at information to determine its relevance, suitability and reliability, to be selective in what digital content to use for what purpose, and to create digital content in any number of formats, including video, audio, Powerpoint presentations, blogs, wikis and animations. A competent person should be able to respect copyright rules when using, modifying and sharing resources, and protect sensitive content and data.

Knowledge: The learner knows how to select a digital content, to develop digital content, integrate and re-elaborate digital content, understand how copyright and licences apply to data and develop a sequence of understandable instructions for a computing system and how to apply them in different contexts.

Skills: The learner is able to deal with:

- Internet literacy
- Digital Resources literacy

- Media literacy
- Copyright and Licences literacy

Attitudes: The learner...

- is pro-active and motivated to create and edit digital content in different formats, to express oneself through digital means
- is willing to look critically at information to determine its relevance, suitability and reliability

- values media literacy and the related competences
- has a positive attitude towards copyright and licences of digital content
- appreciates all digital content formats



REFERENCE SYSTEM – Digital content creation

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to manage, protect and share digital content any apply it into other contexts (e.g. education, healthcare). Knowing how to help other people to use digital content to advance their business activities.	Developing, constructing, transferring	Being able to develop new digital content strategies and transfer them into "unknown" professional fields. Actively planning and creating new digital content creation subject to copyright.	Incorporation	Have their own professional value in digital content creation. They are an inspiration for a new learner to improve their knowledge in digital content creation and protection of sensitive content and data.
4	Knowing when (implicit understanding)	Knowing when to create and edit digital content in different formats, to modify, refine, improve and integrate information and content into an existing body of knowledge to create new, original and relevant content and knowledge. To know how to critically analyse and evaluate digital content.	Discovering acting independently	Independently discovering new tools for digital content creation for professional and personal use with respect to possible copyright restrictions to using, re-using and modifying digital content.	Self-regulation, Commitment	Has a determined and pro-active attitude to create and edit digital content in their own environment. Finding it important to be creative in this field.
3	Knowing how	Theoretically knowing different approaches, techniques and instruments related to: <ul style="list-style-type: none"> • Internet literacy • Media literacy • Copyright literacy 	Deciding/ selecting	Taking part in official digital content creation with digital tools. Selecting different tools for creating different digital formats.	Motivation/ appreciation	Understand the significance of digital content creation. Being motivated to develop your own digital content and to protect it.
2	Knowing why (distant understanding)	Having a basic understanding of digital content creation related to writing, editing, publishing, and copyrighting.	Using, imitating	Occasionally taking part in activities related to digital content creation. Using Internet and other digital tools.	Perspective taking	Have a curious and interesting approach in according to the certain tools related to the creation of digital content.
1	Knowing what	Knowing that digital technologies can be used for finding content.	Perceiving	Perceiving and recognizing tools for digital content creation without taking action on them.	Self-orientation	Observing digital content creation without relating it to oneself.

5. Social, Personal and Organisational Competences

5.1. Client orientation

The learner is competent in interacting with clients, taking into account their specific needs. He/she knows how to identify different client profiles, backgrounds, desires and necessities. The learner is able to react accordingly, adapt and develop strategies to support clients. He/she is aware of the benefits of focusing on the clients' needs and requests and is determined to reach the clients' satisfaction.

Knowledge: The learner...

- has knowledge of different clients' behaviours and needs
- has knowledge of strategies and techniques to deal with clients
- has knowledge of communication techniques

Skills: The learner...

- is able to apply strategies and techniques to reach clients' satisfaction
- is able to adapt his/her own behaviour to better support clients
- is able to balance the interests of the client against those of the enterprise
- is able to adequately communicate with clients

Attitudes: The learner...

- prioritizes clients' satisfaction to other tasks and obligations as well as own affects
- appreciates good quality in interaction
- is emphatic and has a positive attitude towards clients and his/her enterprise

REFERENCE SYSTEM – Client orientation

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Intuitively knowing (or being able to acquire knowledge on) how to deal with any client in any context. Knowing how to transfer knowledge about clients into other fields of life.	Developing, constructing, transferring	Actively planning and developing own/new client oriented strategies that are part of a larger approach, e.g. a (company's) vision or marketing strategy.	Incorporation	Having internalised to act for the benefit of the client, intuitively responding to different clients needs in adequate ways and inspiring others to value client orientation.
4	Knowing when (implicit understanding)	Knowing which actions are needed to help clients with specific demands for a large variety of situations and different types of clients.	Discovering acting independently	Actively researching and expanding own competence to adequately respond to clients in regard to the client's need and the specific situation.	Commitment	Being determined to improve own competence to serve clients and to adequately respond to their needs.
3	Knowing how	Knowing about the specific needs of clients and how the own behaviour and approach can be adapted to the needs of those clients in general.	Deciding/ selecting	Being able to select and apply the appropriate behaviour towards a customer in regard to his/her needs from a set of basic strategies.	Motivation/ appreciation	Valuing client orientation. Being motivated to develop own competence to respond to clients according to their needs.
2	Knowing why (distant understanding)	Knowing that there are different ways to deal with clients and that clients have different backgrounds and needs.	Using, imitating	Adapting the own behaviour towards the client when instructed to or by imitating others.	Perspective taking	Being curious and interested in the theme of supporting clients according to their specific needs.
1	Knowing what	Knowing that clients behave differently and that client orientation is a suitable concept to deal with this.	Perceiving	Seeing and recognising different client behaviours without acting.	Self-orientation	Not relating the theme of client orientation to oneself and the own working life.

5.2. Entrepreneurship

Entrepreneurship refers to a learner's competence to turn ideas into action. It includes a number of sub-competences such as creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve the objectives. The learner is competent to apply different entrepreneurial skills and strategies in order to develop, organize, and manage an encounter he/she wants to achieve, be it private, professional or a contribution to civic society. The learner is able to discover opportunities, to realize innovation, to exploit and use resources and to identify and bear risks. He/she knows to judge and plan entrepreneurial activities in regard to the given economic conditions, and how to act and react in different professional/ business situations. The learner is able to assess and evaluate risks, to convince others of his/her vision and to work both individually and in a team. He/she is able to communicate in a goal oriented way and to delegate tasks to others. The learner is ready to take over risks and responsibility and appreciates development and innovation. He/she values pro-active behaviour, collaboration and independence and complies to ethical standards for doing business. He/she is determined to take the necessary steps to achieve his/her vision.

Knowledge: The learner...

- knows different entrepreneurial instruments and strategies, e.g. project management, controlling, marketing, etc. and how to apply them in different situations
- has knowledge about entrepreneurial competences (such as e.g. leadership, creativity, project management) and can apply them
- knows the principles of economics and the working of the contemporary economy
- knows how to identify opportunities for professional, personal or business activities
- knows how to select and involve collaboration partners

Skills: The learner...

- is able to apply different entrepreneurial instruments and strategies according to the situation and objectives to be met

- is able to identify or create new entrepreneurial activities and to promote his/her ideas towards others
- is able to assess and analyse chances and risks
- is able to lead others and to take over responsibilities
- is able to transfer knowledge and strategies into other contexts

Attitudes: The learner...

- is pro-active and motivated to take the initiative in order to reach a goal
- is willing to undertake risks to achieve his/her vision
- values autonomy and accepts the risk to fail
- has a positive attitude towards innovation and development
- appreciates collaboration and respects others
- has an ethical consciousness



REFERENCE SYSTEM – Entrepreneurship

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to transfer entrepreneurial skills and concepts into other contexts. Knowing how to help other people act successfully in different entrepreneurial structures.	Developing, constructing, transferring	Being able to transfer business strategies into new contexts. Actively planning and creating new entrepreneurial activities.	Incorporation	Having internalised entrepreneurship as a fundamental personal mindset. Being an inspiration for others in their entrepreneurial activities.
4	Knowing when (implicit understanding)	Knowing when to apply the right instrument from the portfolio of different entrepreneurial approaches and instruments. Knowing when to use certain entrepreneurial strategies.	Discovering acting independently	Deliberately seeking entrepreneurial opportunities. Searching for and selecting appropriate entrepreneurial techniques and instruments for the own business. Creating and executing an entrepreneurial strategy for the own context and professional domain.	Commitment	Being determined and pro-active in using and improving own entrepreneurial competences. Finding it important to be creative in this respect.
3	Knowing how	Knowing different entrepreneurial approaches, techniques and instruments to develop business and value. Theoretically knowing how to act along an entrepreneurial concept.	Deciding/ selecting	Taking part in entrepreneurial activities as they are offered by others in known and undisturbed contexts. Choosing singular entrepreneurial tools from a known portfolio	Motivation/ appreciation	Valuing entrepreneurship in general. Being motivated to develop own entrepreneurial competences and visions.
2	Knowing why (distant understanding)	Knowing that through entrepreneurship one can develop an own business and become self-sustainable. Knowing that entrepreneurship includes social responsibility.	Using, imitating	Occasionally taking part in non structured entrepreneurial activities. Carrying out entrepreneurial actions when being instructed to.	Perspective taking	Being curious and interested in entrepreneurship and related concepts and opportunities.
1	Knowing what	Knowing that entrepreneurship is an essential concept that aims at developing a business.	Perceiving	Perceiving and recognising the concept of entrepreneurship without taking further steps.	Self-orientation	Perceiving the concept of entrepreneurship without relating it to oneself.

5.3. Problem solving

Problem solving is the identification of a problem and its facets, anticipating possible solutions and assessing their potential impact and consequences, and putting solutions into action. It involves applying logic, knowledge and reasons towards understanding the actual problem, and being able to plan and use different techniques/methods, experiences. Problem solving is comprised of actions, attitudes and knowledge, which are goal-directed in complex situations. Even if the final aim is clearly defined (but sometimes it is not), the problem solver might not be aware of all steps towards its achievement. The problems might vary in complexity and might require different resources or tools. Therefore, the process requires the knowledge of several problem solving techniques (or the skills to invent new ones) and the ability to apply them accordingly in the appropriate situation. The process of problem solving is comprised of complex actions like planning and reasoning and in order to be completed successfully the problem solver needs to be motivated, curious and eager.

Knowledge: The learner...

- knows different problem solving techniques
- knows ways to modify and combine different problem solving techniques according to the specific problem
- knows how to transfer problem-solving knowledge to other situations and challenges
- knows which resources can be used to come to a solution

Skills: The learner...

- is able to recognise when a problem has no immediate solution
- is able to define the concrete problem and its background
- is able to apply problem solving techniques
- is able to analyse the problem situation
- is able to plan and reason towards problem solution
- is able to combine and modify different problem solving techniques

- is able to discover new, complex solutions by him/herself
- is able to engage others to support the solution of a problem

Attitudes: The learner...

- feels that problem solving competences are valuable
- is eager to find good solutions
- is curious
- is intrinsically motivated (to solve problems)
- is autonomous
- feels the need to help other people (in applying problem solving techniques)



REFERENCE SYSTEM – Problem solving

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Having a large portfolio of problem solving strategies to solve problems constructively and sustainably in different areas of life	Developing, constructing, transferring	Developing and inventing new creative strategies to solve problems.	Incorporation	Having internalised to strive for good, sustainable solutions in a compromise oriented way, and inspiring others to become better problem solvers.
4	Knowing when (implicit understanding)	Knowing variations and modifications to solving problems in different contexts and how to actively use available resources. Knowing different ways to tackle problems.	Discovering acting independently	Actively expanding own strategies and experiences, through trial and consultation. Applying complex solutions to solve a problem.	Commitment	Being determined to find objectively good solutions for problems and to expand own competence in this regard. Openness towards innovative approaches.
3	Knowing how	Knowing how to solve a problem based on prior experiences. Recalling previous problems and comparing similar problems and strategies for solutions.	Deciding/ selecting	Applying known problem solving strategies. Choosing between different (given) possibilities to solve the problem based on prior experience.	Motivation/ appreciation	Being motivated to further develop own competence to solve problems. Valuing good solutions for problems.
2	Knowing why (distant understanding)	Knowing why the problem exists and where it's originating from	Using, imitating	Approaching a problem as being instructed to or by imitating strategies of others.	Perspective taking	Taking interest in finding solutions for problems.
1	Knowing what	Knowing there is a problem that needs to be solved to reach a goal.	Perceiving	Perceiving the problem without taking action.	Self-orientation	Only being interested in solving problems that relate to oneself.

5.4. Leadership

The learner is competent in taking initiative, guiding and influencing others to help them achieve certain goals. He/she can demonstrate decision making skills and is capable to transfer these decisions into a team and to delegate tasks to efficiently reach the given goal. This involves e.g. being a good communicator, creating trust and relationships in the project team, identifying specific skills of team members and delegating tasks accordingly, facilitating team work, fostering collaboration, being open to new and different ideas. The learner is assertive and able to address and solve conflicts that hinder the work process. The learner has an attitude of respect and appreciation for diversity, is able to communicate in an assertive way based on self-confidence and to take responsibility for own actions or failures.

Knowledge: The learner...

- knows different types of leadership interventions adequate for specific situations
- knows, why leadership is important to reach collaborative goals in a group or a team
- knows how to help other people in implementing leadership interventions
- knows how to motivate others to reach a goal
- knows how to organise work processes in different ways

Skills: The learner...

- is able to develop his own leadership style and techniques as a leader and
- can apply it in different situations
- is capable to create and execute leadership strategies
- is able to take over responsibility
- is able to motivate others to reach a goal
- is able to take decisions
- is able to coordinate work processes and to communicate in an assertive way

- is able to delegate responsibility

Attitudes: The learner...

- has a positive attitude towards leadership and is aware of its importance in specific situations
- finds it important that the other members of the group value leadership
- is motivated to develop own leadership competences
- values and respects others and appreciates teamwork
- feels responsible for the team, organisation and for accomplishing a goal
- is assertive about how to organize work
- is open to dialogue and to find common solutions for problems



REFERENCE SYSTEM – Leadership

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing which types of leadership interventions are adequate in specific situations. Knowing how to transfer leadership approaches to other areas of life.	Developing, constructing, transferring	Developing an individual leadership style and techniques as a leader and applying it adequately in different situations.	Incorporation	Having internalised to lead when needed, respecting others needs in team work and to encourage open dialogue. Inspiring others to become better leaders.
4	Knowing when (implicit understanding)	Knowing how and when certain actions/behaviours as leader will affect the group and its results. Knowing when and how to apply appropriate leadership measures to solve problems or take opportunities.	Discovering acting independently	Acting as a leader and trying out a range of different leadership styles. Applying them according to the situation and the objectives of the activity. Being able to coordinate work processes successfully.	Commitment	Feeling the need to be a good leader. Being determined to improve own leadership competences.
3	Knowing how	Knowing different leadership styles and techniques and how they are related to specific performances of a group and outcomes of a project. Knowing how to organise a process in a group to reach a goal	Deciding/ selecting	Taking the lead and applying specific leadership techniques which seem to be appropriate according to the perception of the situation based on own experiences.	Motivation/ appreciation	Valuing leadership and being motivated to develop own leadership competence.
2	Knowing why (distant understanding)	Knowing why leadership is important to reach a goal in a group/team. Knowing that different leadership styles exist and that different leadership approaches can affect the work of/in the group.	Using, imitating	Occasionally applying leadership concepts & actions (like taking responsibility, taking decision, delegating work...) as copied from a role model or as being instructed to.	Perspective taking	Being interested in leadership and its potentials. Anticipating which role leadership has in own life.
1	Knowing what	Knowing what leadership is, what competences and tasks leadership includes.	Perceiving	Recognising situations where leadership is either executed or needed.	Self-orientation	Only being interested in leadership when one is affected by it.

5.5. Project Management

The learner is competent in executing projects in an efficient and successful way by structuring necessary project activities and applying a constant plan-do-check approach until the end of the project. The learner knows about project management theory and how to execute project activities and monitor their level of success and quality. He/she is able to act accordingly and adapt and develop strategies work in project teams or even lead them. He/she is aware of the advantages and disadvantages of turning a task or a venture into a project and to apply project management approaches respectively.

Knowledge: The learner...

- knows about the core project processes and project phases
- knows about crosscutting tasks like dissemination, evaluation, monitoring and exploitation
- has knowledge of at least one project management approach and of variations in regard to other approaches
- has knowledge on how to plan project activities according to the objectives
- knows how to monitor the accomplishment and quality of sub-tasks
- knows when to assign more resources to open tasks
- knows how to structure a project
- knows how to transform a theoretical project plan into reality
- has the knowledge to develop projects along a strategic approach in the own professional environment

Skills: The learner...

- is able to apply strategies and techniques to fulfil the tasks assigned to him/her by the project management
- is able to select certain project tasks according to the own abilities
- is able to plan and attribute project tasks to other (capable) team members
- is able to apply a plan-do-check procedure to monitor the project
- is versatile to connect other approaches like team building or diversity management to the own project team

Attitudes: The learner...

- is open towards applying project management approaches and techniques
- has a positive attitude towards project management
- is aware of the strengths and the weaknesses of project management
- integrates the concept into his/here professional values



REFERENCE SYSTEM – Project Management

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to assess which PM tools are adequate in any situation. Knowing how to plan new ventures with a strategic project management approach.	Developing, constructing, transferring	Strategically adapting and applying PM tools for new contexts. Discussing and sharing information about PM with other colleagues and experts.	Incorporation	Having internalised what to anticipate in steering projects. Inspiring others to improve their PM competences.
4	Knowing when (implicit understanding)	Knowing how different PM tools can be used in different phases of the life cycle of a project. Knowing how to apply them in project situations.	Discovering acting independently	Adapting certain project management tools to the specific context. Seeking for more specific information and applying other PM tools.	Commitment	Being determined to improve own PM competences and to prioritise it to other activities for this purpose.
3	Knowing how	Knowing different PM tools and instruments.	Deciding/ selecting	Actively applying specific tools for PM in project planning and implementation	Motivation/ appreciation	Valuing project management abilities and being motivated to develop and apply them.
2	Knowing why (distant understanding)	Knowing that PM techniques are needed in order to successfully complete project work.	Using, imitating	Occasionally applying a few PM tools – offered by others – in parts the own project work.	Perspective taking	Being curious about different PM approaches and tools and their potential for the own work.
1	Knowing what	Knowing that PM exists as a methodology.	Perceiving	Recognising situations in which certain PM techniques and tools are used.	Self-orientation	Feeling the impulse to learn more on PM methodologies in a specific work situation.

5.6. Planning and Resource Management

The learner is competent in planning activities and resources related to his/her own projects or the projects that he/she is associated to. Learners knows about project planning theory, how to set up the project structure, activity planning, timing and connect this to available and required resources. He/she is able to act accordingly and adapt and develop strategies to set up plans in different projects contexts. He/she is aware of the advantages and disadvantages and has a positive but also critical attitude towards applying planning methodology in different professional and private life contexts.

Knowledge: The learner...

- knows about the core project processes and project phases
- has knowledge of at least one project management approach and of variations in regard to other approaches
- knows how to brainstorm on a project idea
- knows how to combine project idea and project context (e.g. funding programme)
- knows how to structure a project according to the main work packages and ideas
- has knowledge on how to plan project activities according to the objectives
- knows which resources are necessary to accomplish the project
- knows how to assign the resources to the activities
- has the knowledge to develop projects along a strategic approach in the own professional environment

Skills: The learner...

- is able to describe the plans in a realistic and understandable way
- is able to calculate and assign project activities and resources accordingly
- is able to execute planning tasks when being instructed by a planning team leader
- is able to adapt the design (if needed) to new context
- uses planning and resource management approaches comprehensively in the professional practice

- is able to connect PRM to other approaches (e.g. project management, teamwork etc.) in a versatile way

Attitudes: The learner...

- is open towards applying planning and resource management techniques
- has a positive attitude towards it
- is aware of the strengths and the weaknesses of resource management techniques
- integrates the concept into his/her professional values



REFERENCE SYSTEM – Planning and Resource Management

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Profound knowledge on how to transfer planning and resource management methodologies into other contexts.	Developing, constructing, transferring	Adapting and further developing planning and resource management methodologies in the own (professional) context.	Incorporation	Having internalised to plan and manage resources in an effective and sustainable way. Inspiring others to apply resource management techniques.
4	Knowing when (implicit understanding)	Practical knowledge on different planning and resource management methodologies and in which situations which tool is appropriate.	Discovering acting independently	Seeking for more specific information on planning and resource management methodologies and enlarging the own portfolio of tools.	Commitment	Feeling the need for implementing planning and resource management methodologies in the own context. Being determined to improve own competences regarding planning and resource management methodologies.
3	Knowing how	Theoretical know-how on different planning and resource management methodologies. Knowing how to apply them in project situations.	Deciding/ selecting	Actively applying specific tools in planning and implementation and resource controlling and optimisation.	Motivation/ appreciation	Appreciating the value of planning and resource management methodologies and being motivated to apply them.
2	Knowing why (distant understanding)	Understanding the reasons why appropriate planning is crucial for success.	Using, imitating	Occasionally planning actions and consciously allocating resources when being instructed to or following the example of others.	Perspective taking	Being curious about different approaches to manage resources and their potential for own work.
1	Knowing what	Knowing that Planning and Resource Management is needed in projects.	Perceiving	Recognising situations where planning is needed without acting.	Self-orientation	Relating planning and resource management only to own resources.

5.7. Intercultural Communication

Intercultural communication is the competence to respectfully, effectively and constructively communicate with people from different cultural backgrounds. The learner has knowledge about cultural diversity and how this is reflected in communication. He/she is competent in interacting with others and to establish a relation of trust and respect. He/she is able and to adapt to different communication needs that result from different cultural backgrounds. He/she has a positive attitude towards diversity and interacting with people from other cultures and is determined to avoid misunderstandings and resulting frustration. The learner is aware of his own cultural identity and knows how it affects his/her communication.

Knowledge: The learner...

- has knowledge of ways to establish a relationship of trust and respect with others from different cultural backgrounds
- has knowledge of relevant intercultural communication techniques
- knows the benefits of diversity
- has knowledge of variations of certain cultures and how cultural imprints may influence communication styles, including the own cultural background
- has knowledge how to address culture related conflicts/misunderstandings

Skills: The learner...

- is able to communicate in a clear fashion with others from different cultural background
- is able to integrate with colleagues and learners of different cultures
- is able to reflect own cultural imprints in his/her communication
- is able to exchange knowledge and experiences with persons with different cultural backgrounds
- is able to give and receive feedback to and from learners, staff organisations of different cultural background
- is able to tolerate and overcome difficulty, stress and frustration, because of intercultural misunderstandings
- is able to make him/herself understood

- is able to recognise culture based problems and misunderstandings and to adapt the own communication style accordingly

Attitudes: The learner...

- values integrity and diversity
- respects others and their different cultural backgrounds
- has a positive attitude towards interacting with people from different cultures
- wants to avoid culture based miscommunication
- wants to support others



REFERENCE SYSTEM – Intercultural Communication

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing own cultural frames of reference and various patterns of cultural differences. Knowing strategies to communicate successfully with people from a variety of other cultures.	Developing, constructing, transferring	Being able to put oneself in the shoes of others and being able to apply a variety of intercultural approaches. Developing own approaches to communicate with people from other cultures and supporting others to improve.	Incorporation	Having internalised how to overcome culture based obstacles in communication. Being aware that one's own culture shapes own reactions and being able to transcend that. Inspiring others to improve their intercultural communication.
4	Knowing when (implicit understanding)	Knowing about other cultures and understanding how cultural aspects can influence communication. Knowing pitfalls of culture based misunderstandings and how to avoid them. Applying specific exemplary theory in practice (during the exchange)	Discovering acting independently	Actively collecting information about communication features of other cultures and enriching one's own communication competence by transferring diverse elements to one's own context. -> essay in the disturbed system	Commitment	Respecting and valuing expressions of cultural differences and being determined (committed) to overcome communication based obstacles between people from different cultural backgrounds.
3	Knowing how	Knowing how to anticipate certain cultural backgrounds and differences and how to adapt own communication accordingly. - list of theory	Deciding/ selecting	Being able to apply basic strategies in intercultural communication, e.g. active listening, mirroring, perceiving non-verbal signs. - List of practical learning actions, e.g. in prep scenarios	Motivation/ appreciation	Being aware that we have cultural values or assumptions that are different from others. Respecting and valuing different communication styles and being motivated to improve own competence.
2	Knowing why (distant understanding)	Knowing that one's own culture is central to what we see, how we make sense of what we see, and how we express ourselves and that others are influenced in the same way by their own culture.	Using, imitating	Communicating in a conscious way being aware of cultural backgrounds of other people. Reacting to diversity following the example of others.	Perspective taking	Being curious towards cultural diversity and different communication styles. Accepting different ways of communication and considering learning more about it.

1	Knowing what	Knowing that different cultures have different ways of communicating.	Perceiving	Recognising different styles of communication based on cultural backgrounds.	Self-orientation	Considering the benefits of culture sensible communication but feeling no need to become active in this respect.
---	--------------	---	------------	--	------------------	--



5.8. Communication

The learner is competent in communicating with others in a target oriented way, is able to establish a relation of trust and shows integrity through his/her way to communicate. In the communication with others the learner is aware of different communication styles and techniques and that different situations and interlocutors require different styles and techniques of communication. Communication is used by the learner as a means for interaction and through appropriate communication the learner can identify problems, can discuss them and find and implement solutions.

Knowledge: The learner...

- has knowledge of the specific rules to communicate with his/her colleagues or other learners and beneficiaries
- has knowledge of relevant communication techniques
- has knowledge of the own role and context he/she acts in and knows which communication style is appropriate

Skills: The learner...

- is able to communicate in a clear fashion with colleagues, beneficiaries and stakeholders
- is able to communicate in a target oriented way
- is able to identify problems and find solutions together by using direct communication
- is able to give and receive feedback to and from beneficiaries, colleagues and stakeholders
- is able to use feedback in the improvement of his/her practice
- is able to distinguish between different communication styles
- is able to select appropriate communication styles according to goal and context

Attitudes: The learner...

- respects others and their different communication styles
- has a positive attitude towards communicating
- values open and reflective communication



REFERENCE SYSTEM – Communication

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Having a strategic knowledge of communication. Understanding unfamiliar communication styles and knowing how to guide other people to react and communicate appropriately in unknown situations.	Developing, constructing, transferring	Being able to communicate successfully in an unfamiliar situation. Being able to blend different communication styles and to adapt and transfer them into new contexts. Supporting others to develop their communication competence.	Incorporation	Having internalised virtues of good communication and motivating/inspiring others to reflect about communication and to comprehend other persons' communication in order to create a respectful relationship
4	Knowing when (implicit understanding)	Knowing different communication styles and techniques and how to apply them knowledge in known practice situations.	Discovering acting independently	Being able to apply and understand different communication styles and codes suitable for context and situation. Actively expanding own communication competence by observing, researching and reflecting.	Commitment	Being determined to improve and to self-regulate for the sake of the communication and for the respect of others. Staying emotionally balanced in communication and in giving/receiving feedback.
3	Knowing how	Knowing that different people have different communication styles, dependent on their culture, personal background, etc. Understanding other ways of communication and expression, e.g. non-verbal communication.	Deciding/ selecting	Being able to communicate in a clear fashion with different groups according to their capabilities of understanding. Choosing the right code to react according to the situation. Being able to give and receive feedback to and from others.	Motivation/ appreciation	Being motivated to improve own communication competence. Appreciating the virtues of good communication and being open towards other communication styles.
2	Knowing why (distant understanding)	Understanding that the efficiency of communication depends on c-skills Knowing why conscious communication is relevant.	Using, imitating	Applying communication codes of peers (e.g. in language and behaviour, using rites), imitating communication styles of others.	Perspective taking	Being curious to improve own communication competence. Being open towards other/new communication styles.
1	Knowing what	Knowing basic ways of communication in order to understand others and to make oneself understood.	Perceiving	Sending and receiving information without special awareness.	Self-orientation	Talking and listening without feeling the need to reflect on communication.

5.9. Teamworking

The learner is competent in interacting with others involved in the activities of the organisation and to collaborate to reach a common goal. The learner respects specific backgrounds, competences and skills of team/group members and has the ability to act as a team member. This involves communication skills like assertiveness, clarity and active listening, awareness of diversity in teams and potentials of teamwork. He/she has an attitude of appreciation for teamwork as efficient way of collaborating and source of creativity and is determined to contribute to the success of the entire team. He/she is aware of the roles and capabilities in the team and acts accordingly. He/she put any kind of action that turns ideas into facts, taking risks, organising activities.

Knowledge: The learner...

- has knowledge of ways to establish a team and make use of the different abilities of team members in order to reach a common goal
- has knowledge how to enhance team processes in different teams
- has knowledge about the rules of communication
- has knowledge about what to avoid to not disturb the atmosphere and workflow in a team

Skills: The learner...

- is able to differentiate whether teamwork is the best way to accomplish a task
- is able to work in teams and act in teams according to his/her role
- is able to understand that specific tasks and roles of team members are based on their strengths and weaknesses
- has the ability to judge and identify one's strengths and weaknesses, and to assess and take risks as and when warranted, is essential
- is able to reflect the own role in a team

Attitudes: The learner

- has a positive attitude towards working together in a team

- inspires others to contribute to the team
- appreciates collaboration and diversity
- respects and supports team members



REFERENCE SYSTEM – Teamworking

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to enhance team processes in different teams. Knowing how to help other people act successfully in teams and to assign specific responsibilities to people keeping in mind their relevant skills.	Developing, constructing, transferring	Leading a team in a way that members are able to contribute to the best of their abilities, supporting them to do so. Being able to strategically develop a team.	Incorporation	Having internalised the “culture” of constructive team work and to accomplish goals through mutual support. Inspiring others to improve their teamwork skills.
4	Knowing when (implicit understanding)	Having substantial knowledge on how and when to join/form a team. Understanding strength and weaknesses of team members. Knowing the importance of communication and how to coordinate workflows.	Discovering acting independently	Being able to assign and coordinate specific tasks and roles to team members on the basis of their strengths and weaknesses. Monitoring team processes. Trying out new roles for one-self.	Commitment	Feeling the importance to refrain from own preferences (e.g. in regard to procedures, own solution strategies, methods etc.) for the sake of the team and the teamwork. Being determined to be a good team worker.
3	Knowing how	Knowing the basic dynamics and demands of teamwork. Knowing how to engage in a coordinated work flow where the skills, qualities and limits of each member are taken into account in order to work efficiently.	Deciding/ selecting	Actively reaching out to join a team or help create a team. Contributing to the team process according to own strengths and needs for reaching the shared goal.	Motivation/ appreciation	Having a positive attitude towards working together in a team and to appreciate team diversity. Finding it important to have a ‘team spirit’. Being motivated to develop own competence to successfully work in a team.
2	Knowing why (distant understanding)	Knowing that teamwork is a more effective way to achieve results. Knowing it demands from individuals to coordinate their work considering individual competences and abilities.	Using, imitating	Contributing to team work when being invited or instructed to. Fulfilling assigned tasks in a team by following the example of others.	Perspective taking	Being interested in the potentials of team work and to learn more about it.
1	Knowing what	Knowing that teamwork is collaborating with others to reach a shared goal.	Perceiving	Recognising situations in which teamwork is feasible to reach goals.	Self-orientation	Seeing teamwork as something positive, but without considering developing own team work competence.

5.10. Flexibility/Adaptability

Flexibility is a competence that describes the ability to adapt to changing situations and demands in order to cope with variable circumstances. This involves knowledge of the fluidity of facts and the moving nature of life itself, about different contexts and environments as well as of own capabilities and a repertoire of behavioural strategies. Being open minded and trustful in own strengths, are attitudes that support the adaptability to changing situations and reduce stress that results from change.

Flexibility is also necessary to cope with ambiguity, uncertainty and risk, which is stated as an important element of entrepreneurial mindset in the EntreComp conceptual model.

Knowledge: The learner...

- knows about requirements of different contexts and environments
- knows the benefits of being flexible
- knows the burdens of flexibility
- knows that things are dynamic and change is inherent in all areas of life
- knows adequate forms of behaviour for certain contexts
- knows how to adapt own strategies according to available or missing resources
- ...

Skills: The learner...

- is able to transfer knowledge, skills and abilities to other contexts and environments
- is able to reflect observations and experiences and to draw conclusions in terms of how to adapt
- is able to adapt to changing (work) environments or changing constraints on (work) resources
- is able to operate in multicultural environments and to adapt new locations

- is able to anticipate new perspectives
- is able to select from a repertoire of different behaviours
- is able to accept and adapt to restrictions
- is able to allow others to be their way
-

Attitudes: The learner...

- is open to new perspectives, things, behaviours, situations,...
- is curious about learning, discovering new things
- is willing to change approaches or to try different approaches
- is willing to learn to adapt
- is motivated to benefit from flexibility, e.g. to fit in/be more comfortable/successful
- is resilient to the stress that might result from the pressure to adapt or changing situations and environments
- ...

REFERENCE SYSTEM – Flexibility/Adaptability

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing multiple adaptation strategies and knowing how to adapt to changing requirements in various contexts. Analyzing the impact of changing ones behaviour.	Developing, constructing, transferring	Developing and applying tailored adaption strategies for any situation that lead to the best possible result. Being able to perform adequately in unknown situations	Incorporation	Having incorporated to adapt to changing conditions and to let go of initial plans and procedures. Inspiring others to become more flexible.
4	Knowing when (implicit understanding)	Knowing when and how to adapt the own behaviour, attitudes and thinking to changing conditions in order to cope with a situation.	Discovering acting independently	Developing own behavioural strategies and methods to adapt to changes and working on becoming more flexible. Analysing situations and acting accordingly.	Commitment	Being determined to adapt to changing conditions for the sake of a good result.
3	Knowing how	Knowing how to be flexible. Knowing how to adapt the own behaviour, perception and thinking to changing circumstances.	Deciding/ selecting	Deciding how to adapt to changes based on familiar behaviours. Adapting own behaviour to changing conditions in known situations.	Motivation/ appreciation	Valuing flexibility and adaptability. Being motivated to improve own capability to adapt to changing conditions and to show flexibility.
2	Knowing why (distant understanding)	Knowing why one should be flexible and that there are benefits and disadvantages of being flexible.	Using, imitating	Adapting to changing conditions when being asked to or as instructed or by imitating the behaviour of others.	Perspective taking	Being interested in how others behave in different situations. Being interested to learn how to become more flexible.
1	Knowing what	Knowing what it means to be flexible and that flexibility is expected in many working areas.	Perceiving	Perceiving situations that require being flexible (without acting).	Self-orientation	Not being interested in adapting to changing conditions. Only considering adapting for personal benefit.

5.11. Critical Thinking

Critical thinking describes the competence to question an issue or a situation, an idea, assumption without accepting anything given at a face value. Critical thinking will identify and analyse the given issue/situation in a systematic way without automatically jumping to conclusions. The learner is curious to assess the given issue/situation and analyse the underlying arguments/ideas and is able to argue the considerations in an understandable way, to identify inconsistencies and errors when reasoning and reaching to a conclusion in a systematic way by applying experience and evaluating available information. It is the ability to go beyond the memorization, information recall and facts description, to analyse, evaluate, interpret, or synthesize information or experience in order to form or criticize an idea or argument and don't simply accept all the given information without questioning

Knowledge: The learner...

- has knowledge about the value of critical thinking
- has knowledge about different critical thinking methods
- has knowledge about the appropriate use of critical thinking
- has knowledge how to evaluate and respond to counterarguments

Skills: The learner...

- is able to analyse, evaluate, interpret, or synthesize information or experience
 - is able to examine ideas, concepts or situations from multiple perspectives, including different cultural perspectives
 - is able to develop well-reasoned, persuasive questions and arguments
 - is able to respond to counterarguments
-
- is able to identifying themes or patterns and making abstract connections across subjects

- is able to accept criticism and submit his/her findings to repeat tests

Attitudes: The learner...

- has curiosity to test information and to seek evidence, being open to new ideas
- has scepticism about non proven information, not believing every information he/she is confronted with
- has the humility to admit that his/her ideas may be wrong when facing new information, experience or evidence that states otherwise
- is willing to submit his/her ideas and experiments to peer review



REFERENCE SYSTEM – Critical thinking

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to apply critical thinking strategies in both in known and unknown situations. Knowing how to strategically use critical arguments in various contexts.	Developing, constructing, transferring	Being able to recompose arguments or information after a critical assessment process, including new aspects that provide constructive insight to an unknown problem or a situation. Thinking in coherent way to recognise critical aspects and to act accordingly.	Incorporation	Having internalised to assess issues in a critical way in order to identify and to process conclusions according to context and objectives before taking decisions.
4	Knowing when (implicit understanding)	Analysing more thoroughly, broadly and frequently, including validating source information in order to come to a holistic solution. Knowing when critical thinking is adequate.	Discovering acting independently	Researching for additional information and arguments on a given issue to include it into the analysis. Being able to explain the line of thought/results of the critical evaluation of an information or solution to others in an understandable way.	Commitment	Being determined to reach adequate and constructive conclusions through analysis and critical thinking. Being confident to engage with complex and/or unfamiliar problems and concepts.
3	Knowing how	Knowing how to look through different lenses and how to analyse diverse information in order to come to a constructive conclusion.	Deciding/ selecting	Applying different known strategies to look at an issue from different angles and questioning the given information.	Motivation/ appreciation	Being motivated to test and question own and others' judgements, opinions and ideas. Valuing critical thinking and being motivated to expand own competence to do so.
2	Knowing why (distant understanding)	Knowing why it is important to anticipate different views on an issue.	Using, imitating	Taking different views on an issue only when instructed to or following the example of others.	Perspective taking	Having the openness to look at an issue from different perspectives. Being interested in seeing issues through different lenses.
1	Knowing what	Knowing that there may be different ideas or expressions on the same issue.	Perceiving	Perceiving that there are different possible ways of looking at issues.	Self-orientation	Being aware that there are different ideas but not necessarily willing to explore them.

5.12. Networking

The learner is competent in interacting with others involved in professional practice, is able to establish relationships and to build up a network of relevant contacts in his professional setting. In collaborating with colleagues and stakeholders, the learner has the ability to exchange knowledge and experience as well as to establish new contacts in a target oriented way. The learner is aware of his/her role in different context and knows feasible approaches to establish new contacts, taking into consideration the working contexts and roles of other stakeholders. He/she has internalised his/her own goals and recognises opportunities to promote these towards others.

Knowledge: The learner...

- has knowledge of ways to integrate networking into training activities
- has knowledge of relevant professional networks
- has knowledge of different networking instruments and techniques

Skills: The learner...

- is able to collaborate closely with colleagues
- is able to exchange knowledge and experiences
- is able to use relevant networking tools
- is able to actively use and create new networking techniques to improve professional knowledge

Attitudes: The learner...

- has a positive attitude towards collaborating with colleagues and stakeholders
- is interested in the exchange of knowledge and experiences
- is open towards different forms and opportunities of networking



REFERENCE SYSTEM – Networking

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to integrate networking into various activities and in the collaboration with colleagues and stakeholders. Knowing how to help other people act successfully in different networking structures.	Developing, constructing, transferring	Actively planning and creating networking opportunities to improve knowledge and to establish new ways of collaboration others. Being able to transfer networking approaches to other areas of life.	Incorporation	Having internalised to network at any occasion. Enjoying networking and inspiring others to improve their networking competence.
4	Knowing when (implicit understanding)	Knowing how and when to apply different networking techniques for concrete tasks or goals. Knowing how to act in different networking structures.	Discovering acting independently	Deliberately seeking networking opportunities and researching for new networking techniques. Choosing adequate networking techniques according to goals and interlocutors and to act appropriately.	Commitment	Feeling the need to be pro-active and creative in networking. Being determined to improve networking competence.
3	Knowing how	Knowing different networking techniques and practices for sharing, learning, promoting ideas and building contacts.	Deciding/ selecting	Taking part in networking activities and applying basic networking techniques in a correct way to contribute to reaching a goal.	Motivation/ appreciation	Valuing networking in general. Being motivated to improve own networking competence.
2	Knowing why (distant understanding)	Knowing that through networking one can learn, build useful contacts and spread info to different target groups.	Using, imitating	Talking to others, trying to learn from them and building contacts following the example of others or when being instructed to.	Perspective taking	Being interested in the benefits of networking and considering learning more about it.
1	Knowing what	Knowing the concept of networking.	Perceiving	Seeing and recognising values and opportunities of networking for collaboration.	Self-orientation	Relating to networking in own life and for own benefits.

5.13. Creativity

The learner is able to approach new situations and challenges with open mind and flexibility. He/she is competent in actively joining creative processes (such as brainstorming) and applying different creative thinking techniques (e.g. lateral thinking, visual explorations, metaphors, analogies, drawing, etc.) to generate new solutions and approaches. He has a strong ability in identifying unique connections between different ideas.

Knowledge: The learner...

- has knowledge of different creative thinking techniques
- has knowledge of how to guide others through creative processes

Skills: The learner...

- is able to see things from more than one perspective and is able to question the existing patterns
- is able to play an active role in collective creative processes
- is able to generate innovative solutions to unknown problems

Attitudes: The learner...

- has a positive attitude towards thinking out of the box
- inspire and motivate others to express and develop their own creativity in many different situations

Personal competence

REFERENCE SYSTEM – Creativity

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing intuitively where and how creative thinking techniques can help solve a situation or problem. Knowing how to guide other people through the creative process.	Developing, constructing, transferring	Being able to extend creative strategies, developing own techniques to analyse things in different ways and coming up with new approaches to problems.	Incorporation	Having internalised to develop own creative approaches and solutions. Inspiring others to express and develop their creativity.
4	Knowing when (implicit understanding)	Knowing how to apply different creative thinking techniques in concrete situations. Knowing strategies to overcome attitudes and situations that can hamper creativity.	Discovering acting independently	Being able to play an active role in a creative process, such as brainstorming session, taking inspiration from others and finding new solutions and ideas by identifying unique connections between different ideas.	Commitment	Being determined to approach life in a creative way. Fostering flexibility and divergent thinking as supportive skills.
3	Knowing how	Knowing different creative thinking techniques (e.g. lateral thinking, visual explorations, metaphors, analogies, drawing, etc.), knowing in which situations creative thinking is crucial.	Deciding/ selecting	Choosing autonomously different creative techniques according to the situation and showing the capacity to look at problems from different perspectives and figuring out alternative scenarios	Motivation/ appreciation	Feeling the need of perceiving things in different ways and being determined to exercise creativity in different contexts.
2	Knowing why (distant understanding)	Knowing about the role and benefits of creativity in daily activities. Knowing why creative thinking is important in the process of solving problems and generating new ideas.	Using, imitating	Applying some creative thinking techniques when being instructed to, being able to play an active role in brainstorming sessions.	Perspective taking	Being interested in expressing own creativity in problem solving situations without knowing how to do it.
1	Knowing what	Knowing what creativity means and that creativity is not only an inborn ability expressed by a few talented people but a skill that can be learnt and wielded by everyone.	Perceiving	Recognising the usefulness of applying creative thinking in many daily activities	Self-orientation	Feeling that creativity can be useful when wanting to find innovative solutions or cope with unknown problems.

5.14. Evaluating/Reflecting

The learner is competent in reflecting and (self-)evaluating strategies as an interactive learning process on the job. He/she is able to identify the appropriate evaluation methodologies to apply, according to the objectives and type of activities of the organization, and he/she can plan the different phases of the process (information gathering, processing, analysis, reporting) within an appropriate timing for the work plan of the organisation.

Knowledge: The learner...

- has knowledge of a variety of evaluation tools and methods
- knows how and when to efficiently and effectively apply evaluation as a tool for stimulating reflection and learning processes
- knows how to use the results of the reflection and evaluation processes in a large perspective (e.g. for identifying further learning needs)

Skills: The learner...

- is able to apply a variety of evaluation tools and methods
- is able to develop own evaluation strategies
- is able to process in a methodologically correct way the results of the evaluation for different purposes
- is able to promote a participatory culture of evaluation in the organisation processes

Attitudes: The learner...

- recognizes the importance of evaluation and reflection for individual and organizational learning and inspires team members to improve their own evaluation competence

REFERENCE SYSTEM – Evaluating/Reflecting

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDES/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing how to strategically integrate evaluation outcomes into the organisational and/or individual practice in order to achieve the collaborative goals.	Developing, constructing, transferring	Developing own evaluation and adaptation strategies and an on-going participatory culture of evaluation within the organisation, promoting (self-) evaluation to achieve envisaged goals.	Incorporation	Inspiring others to value evaluation, reflection and individual and organisational learning. Inspiring others to develop their evaluation competences.
4	Knowing when (implicit understanding)	Knowing when (time schedule) to organize different phases of the evaluation (information gathering, processing, analysis, reporting) appropriate to the work plan of the organisation in coordination with organisation leaders.	Discovering acting independently	Searching for evaluation techniques and independently applying the (self-)evaluation with appropriate techniques and methods, within the given purpose of the evaluation.	Commitment	Being determined to improve reflection and evaluation competences with respect to individual and organisational learning.
3	Knowing how	Knowing how to organise (self-) evaluation as a reflective and interactive learning process. Knowing pertinent methods and techniques that can be introduced as an evaluation.	Deciding/ selecting	Making conscious choices on objectives, issues to evaluate; the methods and instruments of evaluation that seem more pertinent for the given case.	Motivation/ appreciation	Finding it important that team members/ colleagues value evaluation and reflection. Being motivated to improve own evaluations and reflection competence.
2	Knowing why (distant understanding)	Knowing why reflection and (self-)evaluation are important to facilitate individual and collective learning/ performance via evidence-based decision-making.	Using, imitating	Occasionally evaluating processes and products using existing models and techniques.	Perspective taking	Generally feeling that reflection and evaluation make sense in order to best achieve collaborative goals.
1	Knowing what	Knowing that evaluation is an important process to improve quality.	Perceiving	Recognising evaluation and reflection processes.	Self-orientation	Passive approach to evaluation and reflection, unless it refers to issues of personal relevance.

6. Catalogue of Assessment Tools

6.1. Introduction

This catalogue gives an overview of possible methods applicable to assess the development of core competences for students and other learners.

The catalogue doesn't claim to be a complete list, but is designed to be a growing compilation of approaches to support professionals in applying the VIVA competence framework and to validate competence developments. The catalogue presents a sample of methods that can be used in individual or group work, the examples shown should reflect a good balance of productive and responsive assessment methods. The annex provides materials that can be applied in certain assessment situations.

The assessment of competences on different competence levels acquires a good overview of suitable assessment methods. Not every method of data collection fits to each learning situation. We would like to provide a catalogue of methods which can be used for individual projects and settings.

Every method is presented with a short description, recommendations and instructions, and advantages as well as disadvantages of the method.

6.2. Methods and Data Collection

In many cases it is feasible to apply a set of methods to receive more and complementing data as basis for a rating on a competence level. In the design of the assessment setting you should consider the following aspects:

- Which target group do you work with and how many learners and assessors are involved?
- Which competences are to be assessed?
- How much time and interaction with the learners is available?
- For which purpose do you assess and evidence the competence developments? This determines the depth of the assessment, e.g. is it to show learners that they made any progress or is it to document achievements that shall benefit the learner in job-applications?

On the following pages you find the descriptions of different methods and approaches for data collection in different contexts.

Method of Data Collection	Short Description of the Method	Recommendation, Instructions	Advantages and Disadvantages
<p>Reflective Learning Diary</p>	<p>A reflective diary is an instrument for learner’s self-evaluation. It enables learners to document and reflect upon their learning experiences with regard to a certain topic.</p> <p>As a learning activity reflective diaries facilitate learner’s self-reflection.</p> <p>As an assessment method reflective diaries provide insight in learner’s understanding, content knowledge, knowledge application but also critical self-reflection and awareness.</p> <p>For this method it is also possible to use a blog or other digital tools, offline or online.</p>	<p>Give regularly time (about 15 min. each day) for the learners to write down their learning experiences in a booklet.</p> <p>Explain that a reflective diary should focus on some basic elements:</p> <ul style="list-style-type: none"> • A description of what happened • Personal feelings about what happened • A personal interpretation / evaluation of what happened • A conclusion from the experience • Take care that learners do not only report what happened! <p>Let them focus on an issue related to the topic. .</p>	<p>Advantages:</p> <p>Gives a deep insight in the learning process</p> <p>Facilitates reflective learning.</p> <p>Digital documentation can be shared with others more quickly and more easily.</p> <p>Disadvantages/Difficulties:</p> <p>Takes time and discipline to keep the diary regularly</p> <p>Requires ability for self-reflection</p> <p>Sharing personal feelings with others might be a sensitive issue.</p> <p>Digital documentation may require certain IT skills.</p>
<p>Concept Map</p>	<p>A concept map is a diagram intended to illustrate the understanding of the relationships between concepts involved with a particular area of study. A list of words describing important aspects of a topic is assembled. The words are sorted into a hierarchy from most general to specific. They are arranged so that similar terms are near each other. Links are then drawn between the concept words, and statements written to describe or explain the links. The concept map can be created in the form of a mind map.</p>	<p>Use a concept map at the beginning and at the end of a learning activity to identify the progress the learners made.</p> <p>Identify basic concepts and ask the learners to come up with related concepts and skills.</p>	<p>Advantages:</p> <p>It helps individuals to establish logical connection among ideas seemingly related.</p> <p>Disadvantages/Difficulties:</p> <p>For individuals who are not used to thinking along a clear structure, it might be difficult to reflect themselves.</p>

Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
Group Discussion	<p>In group discussions for the purpose of assessing competence developments a learning group is interviewed by a moderator.</p> <p>A specific format of such a discussion are focus groups, which are in particular useful for exploring norms, beliefs, attitudes, practices and languages.</p>	<p>The optimal size group consists of six to twelve individuals.</p> <p>Choose a topic for the discussion and prepare a list of open ended questions that are arranged in a natural and logical sequence.</p> <p>The discussion should be audio recorded for transcription, or even filmed. An alternative is to take careful notes during the discussion.</p> <p>Write a summary for each group discussion.</p> <p>Focus groups require trained moderators.</p>	<p>Advantages:</p> <p>Is very close to daily communication forms. Can be used to “explore the field”, to get an insight on a particular subject. The information gained can be used to generate ideas and to prepare more structured methods (e.g. questionnaire)</p> <p>Disadvantages/Difficulties:</p> <p>Group discussions give information about a group not about individuals; and they do also not provide any information about the frequency or the distribution of beliefs in the target population.</p> <p>Much effort and time is needed.</p>
Personal (informal) Interview	<p>A purposeful exchange between two individuals to uncover perspectives, experiences, feelings and insights on a phenomenon.</p> <p>A powerful method of collecting in-depth and detailed qualitative data.</p> <p>Data can be analyzed through content analysis with narrations and quotations.</p>	<p>Prepare an interview form with questions in line with the evaluation focus.</p> <p>Use open ended, clear questions with follow up prompts.</p> <p>Do not test knowledge but explore it through experience and description questions.</p> <p>Do not mislead respondents with biased, assumption loaded questions.</p>	<p>Advantages:</p> <p>Uses the basic methods of communication and eliminates limitations & artificiality of writing/ filling in a questionnaire.</p> <p>Helps gather in-depth and detailed data. Flexible, open to follow up.</p> <p>Disadvantages/Difficulties:</p> <p>Much effort and time is needed.</p>

		Record conversation with permission (if audio recording is not possible, take shorthand notes)	Small samples, generalization from sample to population cannot be done.
Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
Questionnaire/ Test/Exam	<p>Questionnaires or tests can be used as a measurement tool for knowledge, skills and attitudes as well as experience gained through a training/programme.</p> <p>It could be used to assess initial knowledge, attitude and behaviour, improvement in these respects in the training process and outcomes reached at the end of training.</p> <p>Questions to test or measure learning can be in verbal or written formats: verbal questioning, e.g. a question and answer session at the start and end of a session; written format e.g. tests or exams.</p> <p>Questionnaires can be formal as in an examination, or informal as in a quiz.</p>	<p>Questionnaires or tests can be used in the 3 stages of assessment:</p> <p>Stage 1. Initial assessment to identify prior learning, experience or achievement. This allows the assessor to develop a baseline for learning and achievement.</p> <p>Stage 2. Formative assessment—to identify where the learner is, what progress is being made and how to “Fill Gaps” in knowledge, skills and understanding. Learners consider where they want to be and plan how to get there.</p> <p>Stage 3. Summative assessment-This is carried out to make judgements about the learner performance at the end of a training/ programme or activity.</p> <p>Examples of questions:</p> <ul style="list-style-type: none"> • “Closed” questions which restrict the learner to answering YES or NO, TRUE or FALSE • “Open” questions which allow the learner to express an opinion or knowledge in sentences 	<p>Advantages:</p> <p>Provides written evidence of learning.</p> <p>Provides assessor with a quick way to test that learning has taken place.</p> <p>Can be used for both formative and summative assessment.</p> <p>Helps to identify the strengths and weaknesses of learners and provides feedback to both learners and trainers.</p> <p>Fits well into formal learning situations.</p> <p>Disadvantages/Difficulties:</p> <p>Questions can be misunderstood, results are determined by the interpretation of the reader.</p> <p>Formal style does not meet needs of learners with other learning styles.</p> <p>Can formalise the curriculum and suppress creativity.</p> <p>Does not fit easily with informal learning situations.</p>

		<ul style="list-style-type: none"> Multiple choice questions which provide a range of answers for the learner to select the right one 	Could cover only a limited extend of the set CPD goals and processes.
Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
Self assessment/ Checklist	<p>Self Assessment involves learners in the process of assessment and allows them to reflect upon their learning and to review and record their achievements. Self Assessment can be both formative and summative:</p> <p>In formative assessments the learner reflects on where they are and where they need to go next. In summative assessment the learner reflects on the knowledge that has been gained and the skills they have acquired, at the end of an activity. Self assessment enables learners to manage their own learning and plan their progression while they gather evidence for portfolios and qualifications.</p>	<p>It is important that learners have the opportunity to reflect on their own contribution to activities as well as the skills and knowledge they have gained. Self assessment can be used as a stimulus to provoke discussion and to encourage learners to develop their own techniques for reviewing their learning. The self assessment process is a cycle of planning, reviewing and evaluating.</p> <p>It is useful for learners to undertake some form of initial self assessment at the beginning of a learning activity, to identify existing knowledge or skills. The learner can then use this information as a base-line to monitor their progress and to recognise achievement.</p> <p>It is useful for the learner to develop a <i>logbook</i> as part of the planning process, which will help to identify what aim to achieve and how objectives will be achieved. Later, a comparison can be made to review progress. This is part of formative self assessment.</p> <p>An <i>evidence chart</i> helps the learner to keep a record of the activities done and the skills used. This is used when reflecting on what has been learned. This is part of formative self assessment</p>	<p>Advantages:</p> <p>Gives ownership of learning. Builds confidence. Motivates learners to progress. Develops planning and reflective skills. Provides evidence of knowledge and competence. Improves decision making and communication skills. LEVEL5 offers an interface to e-learning platforms that enable learners to autonomously carry out their self-assessment and receive a respective certificate.</p> <p>Disadvantages/Difficulties</p> <p>Requires a disciplined and honest self-reflection</p>

		<p>An <i>assessment matrix</i> enables the learner to review their learning against pre-determined criteria by giving scores for each criterion. This gives a visual record of progress and enables to identify strengths and weaknesses. This can be used for formative and summative assessment.</p> <p><i>Evaluation sheets</i> act as a reflective diary and conclude the self assessment process. The learner brings together the log, the evidence of achievements and assessment matrix to reflect on what was achieved and the progress made. This is summative self assessment.</p> <p>Especially for target groups with little experience in self-reflection, it is recommended that a mentor is at hand to support the reflection.</p> <p>When applying LEVEL5 the learner should be familiar with the structure and underlying idea of the reference system.</p>	
--	--	--	--



Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
<p>Observation</p>	<p>The purpose of direct and indirect observation is to collect evidence of achievement by watching learners' performances while they take part in an activity, but without interfering in their work. The activity can be a real situation or a simulated situation e.g. role-plays. Observation allows you to see the knowledge being put into practice and is better used when assessing and evidencing competence based learning. Direct observation is undertaken in person, either by an assessor, peer or workplace supervisor. Indirect observation takes place when using appropriate technology such as video recording.</p> <p>Analysis of documents is also a kind of observation. Here documents rather than behaviour are scrutinised.</p>	<p>Direct Observation by an assessor: Assessor fills in a prepared observation report form during the learner is undertaking the activity – he makes a judgement against pre-determined criteria.. The assessor records what the learner does, how the learner behaves and interacts with others. Peer Assessment: This can be in the form of a discussion, a question and answer session or by recording information on a pro-forma. The peer can be another learner who has taken part in the activity alongside the learner who is being assessed. The peer assessor will either record or provide verbal feedback what the learner has done during the activity. Witness Testimony: This is a statement from a “third party” who has witnessed the learner take part in the activity in verbal or written form. The witness could be a work supervisor or colleague.</p> <p>Indirect Observation: This can be a video or film of the learner taking part in an activity. The assessor can recognise competence or achievement by observing the activity on the video. This can be supplemented by asking the learner questions about what is taking place on the film.</p> <p>360° Feedback: this is a deliberate confrontation of observations and views on the learner's performance from different perspectives – e.g. of trainer, supervisor and colleagues.</p>	<p>Advantages:</p> <ul style="list-style-type: none"> Provides the learner with the opportunity to demonstrate competence and skills Allows learner to put knowledge into practice Provides creative and innovative method of assessment Contributes to the development of an activity based curriculum Provides a range of evidence for Portfolios <p>Disadvantages/Difficulties:</p> <ul style="list-style-type: none"> Can be time consuming for assessor Can be difficult to observe and assess individuals within a group

Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
(E-)Portfolio	<p>Portfolios are personal collections of information describing and documenting a person's achievements and learning.</p> <p>An electronic portfolio, is a collection of electronic evidence (artifacts, including inputted text, electronic files such as Word and PDF files, images, multimedia, blog entries and Web links etc.) assembled and managed by a user, usually online.</p> <p>(E-) Portfolios are both demonstrations of the user's abilities and platforms for self-expression, and, if they are online, they can be maintained dynamically over time.</p>	<p>Ask your learners/ learners to create their own portfolio/e-portfolio, e.g. on the REBUS Platform.</p> <p>Encourage them to include all kinds of activities.</p> <p>Review during your project how competence levels are changing.</p>	<p>Advantages:</p> <p>Enables the individual to be evaluated on various levels.</p> <p>Highlights all of an individual's skill sets.</p> <p>Extra curricular activities can also be highlighted.</p> <p>Allows the reader to understand the different dimensions of the individual.</p> <p>Empowers individuals to connect their formal education, work experience and extra curricular activities.</p> <p>Disadvantages/Difficulties: Learners might need individual help.</p> <p>E-portfolios require some technical skills as well as available soft- and hardware.</p>

Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
Games	A tool to assess knowledge, skills or attitudes in a non formal way. Learners of a group get questions or task in a playful surrounding.	<p>Not all people like games or are open to participate. Consider this when you select games.</p> <p>Make a good balance between knowledge questions and creative tasks.</p> <p>The atmosphere must be friendly enough to protect “losers”.</p> <p>The group must not be too big.</p> <p>Invent tasks, which are also nice or useful to the other participants that are not directly involved in the task.</p> <p>Play the game yourself first before using it in the group to see the traps and to make a time-table.</p> <p>Every game needs a games-master.</p> <p>The games-master makes notes about the answers and assesses the orders.</p>	<p>Advantage:</p> <p>Creates a nice atmosphere.</p> <p>The learner can demonstrate skills or knowledge in a creative way.</p> <p>Improves communication skills.</p> <p>Disadvantages/Difficulties:</p> <p>Not every group appreciate “just games”.</p> <p>Because of the gamble part it is a roughly assessment.</p> <p>It takes time, to prepare it and to play it.</p>
Case study	A strategy to describe events and processes within a framework through various data collection methods such as observation, interview, document analysis in order to understand and evaluate the case.	<p>Use the case study strategy to evaluate the implementation and the effects of an event or process on individuals/groups, e.g. the REBUS learning project.</p> <p>Case studies focusing on implementation help the evaluator to make decision whether the implementation responds to the initial intent.</p> <p>Case studies focusing on program outcomes assess the impact of the program and help identify reasons for success and failure.</p> <p>Plans should be made to obtain longitudinal data in depth and in detail.</p>	<p>Advantages:</p> <p>It helps to assess a complex activity or process through longitudinal, in depth and detailed description and contextual analysis.</p> <p>Both qualitative and quantitative data could be collected and analysed for triangulation.</p> <p>Disadvantages/Difficulties:</p> <p>Time consuming. Only small samples can be included in the study.</p>

Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
<p>Essay</p>	<p>An essay is, generally, a piece of writing that gives the author's own argument — but the definition is vague, overlapping with those of a paper, an article, a pamphlet, and a short story. Essays have traditionally been sub-classified as formal and informal.</p> <p>An Essay is an assessment question that requires an answer in a sentence, paragraph, or short composition. Essay assessments are usually classified as subjective assessments as there are normally a variety of responses.</p>	<p>An essay (depending on the types of essays) is usually expected to consist of an</p> <ol style="list-style-type: none"> 1. Introduction/Aims/Objectives 2. Major points and ideas explained and summarized 3. Results/Related points/Issues/or others depending on the topic 4. Conclusion – future work <p>In regard to the taxonomy essays can be used as project reports thus tackling higher competence levels or key competences of higher complexity like related to Entrepreneurship projects.</p> <p>An essay (depending on the types of essays) is usually expected to consist of an</p> <ol style="list-style-type: none"> 1. Introduction/Aims/Objectives 2. Major points and ideas explained and summarized 3. Results/Related points/Issues/or others depending on the topic 4. Conclusion – future work <p>Recommendations:</p> <ul style="list-style-type: none"> - Let students know the assessment criteria and marking scheme, including grammar, spellings and other issues. 	<p>Advantages:</p> <ul style="list-style-type: none"> • Essays have the ability to assess all levels of learning objectives. • It encourages original and creative thinking. <p>Disadvantages/Difficulties:</p> <ul style="list-style-type: none"> • Due to the subjective nature of essay assessments, grading is very unreliable even for the same assessor at different periods. • Grading may be influenced by other factors such as handwriting and length of response. • As essays are very time-consuming to answer and to correct, they are not recommended if only low-level of learning outcomes are assessed which can be assessed by multiple choices or short answer questions. • Although guessing is not possible in essay

Method of data collection	Short description of the method	Recommendation, instructions	Advantages and disadvantages
		<ul style="list-style-type: none"> - Try to reduce ambiguity in the essay questions, clearly define the expected response such as compare, evaluate, summarize, critique etc. - Do not use essays to measure knowledge or understanding that can be assessed using less time consuming assessment methods. 	<p>assessments, but “bluffing” is.</p> <ul style="list-style-type: none"> • It is also not advisable to give the topic of the essay to the students at an early date. This may give rise to superficial learning where students concentrate all their efforts in completing the essay only.

