



*SMEs – Raising Awareness and Learning on Digital data,
data analysis and artificial intelligence*

Competence Framework

Prepared by

blinc eG



dataninja



**SMART
REVOLUTION**

EUROTRAINING

CATRO



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Introduction

Small and medium-sized enterprises (SMEs) are increasingly faced with the need to integrate digital data, data analytics and artificial intelligence (AI) skills into their operations in today's rapidly evolving digital landscape. The SMERALD project responds to this challenge by developing a robust competence framework aimed at equipping SMEs with the necessary skills to succeed in a digital economy. This introduction provides a comprehensive overview of the theoretical underpinnings of the framework as well as the practical implications for trainers, teachers and facilitators.

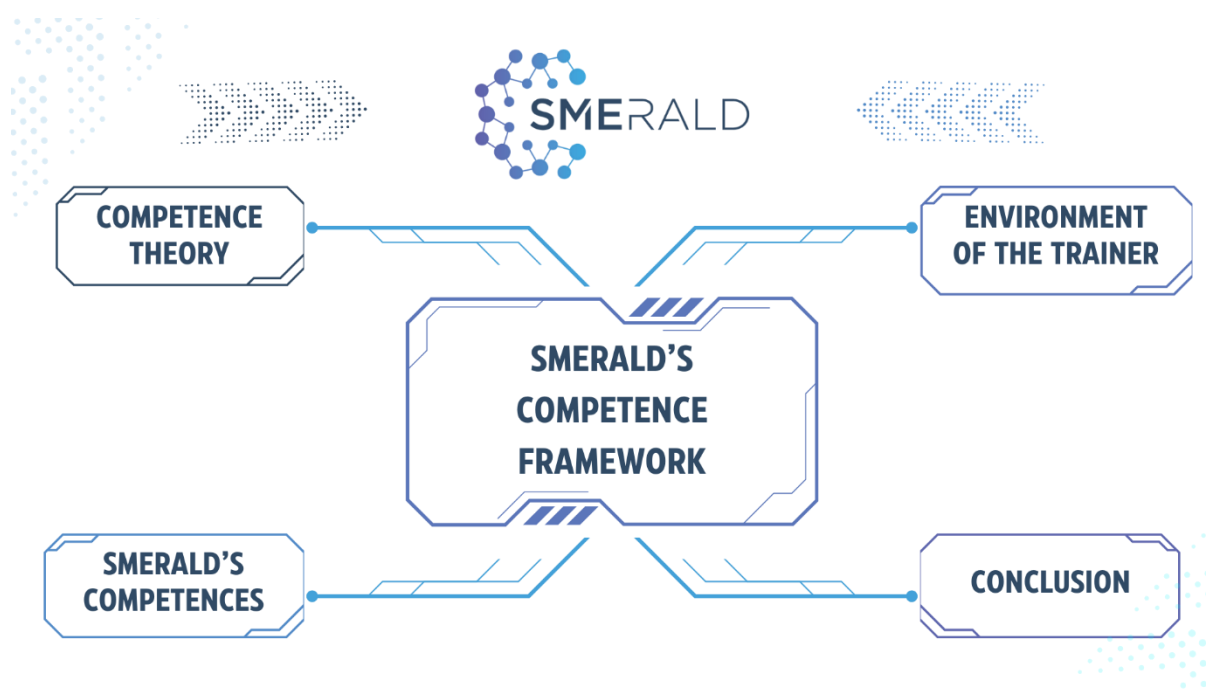


Figure 1: SMERALD's CF

Chapter 1: Competence Theory

The foundation of the SMERALD project lies in the integration of two influential competence frameworks: LEVEL5 and EntreComp. These frameworks provide a structured approach to defining and cultivating the skills that are essential for SMEs in the areas of digital data, data analytics and AI. LEVEL5 provides a systematic methodology for assessing and developing skills, ensuring that they meet real business needs. EntreComp, on the other hand, focuses on fostering entrepreneurial mindsets and skills that are essential for innovation and adaptation in dynamic market environments. Chapter 1 explains how these frameworks work together to provide a comprehensive theoretical foundation that leads to practical application in the following chapters.

Chapter 2: The trainer's environment - planning, delivery, assessment

Effective training programmes depend on careful planning, dynamic delivery and rigorous evaluation. Chapter 2 explores how trainers can use the SMERALD Competence Framework to design effective learning experiences. Strategies for assessing learner needs, designing tailored learning programmes and using different pedagogical methods to promote competency-based learning are presented. Focusing on the integration of design thinking, this chapter provides educators with tools to create adaptive and engaging learning environments. It also addresses the crucial role of assessment in validating the acquisition of skills and ensuring quality assurance through robust evaluation methods.

Chapter 3: Teaching the specific SMERALD competences

At the heart of the SMERALD framework is the delineation of four core competences: technical, social, personal and organisational. Chapter 3 looks at each cluster and explains the specific skills and knowledge that are essential for SMEs to manage digital transformation. From facilitating effective teamwork and communication (social skills) to fostering resilience and adaptability (personal skills) and optimising organisational processes (organisational skills), this chapter offers practical insights for trainers and educators. It emphasises the importance of cultivating these skills not only in formal business contexts, but also in informal civic projects, to foster well-rounded skills that are critical for sustainable growth and innovation.

This comprehensive introduction sets the stage for a detailed examination of how the SMERALD project addresses the multi-faceted challenges and opportunities presented by digital skills in SMEs. Each chapter builds on this foundation, offering theoretical insights and practical strategies tailored to enable trainers and educators to improve the skills of the workforce.

Chapter 1: Competence Theory

The SMERALD competence framework aims to provide small and medium-sized enterprises (SMEs) with the necessary competences in digital data, data analytics, and artificial intelligence (AI). To achieve this, we have adopted two robust frameworks: LEVEL5 and EntreComp. These frameworks help define and structure the competences needed, ensuring they are comprehensive, flexible, and applicable to real-world contexts.

By combining LEVEL5 and EntreComp, the SMERALD competence framework ensures a comprehensive and practical approach to developing essential competences in digital data, data analytics, and AI for SMEs.

LEVEL5 Approach

The LEVEL5 approach is designed to simplify and operationalize competence development. It aligns with various European competence models, ensuring feasibility, flexibility, and connectivity to other European instruments. LEVEL5 defines competences as an integration of knowledge, skills, and Attitude, forming a holistic synthesis necessary for effective performance in real-world tasks.



Figure 2: LEVEL5 logo

Components of Competence:

- Knowledge (Cognition): Understanding content, theories, principles, and functionalities.
- Skills (Capabilities): The ability to perform tasks and activities.
- Attitude (Affective Elements): Emotions, motivations, volition, and values.

Internal and External Perspectives of Competence:

- Internal (Potential): The innate ability of a person to tackle tasks.
- External (Demonstration): The observable behaviour in specific contexts and at adequate quality levels.

Context and Quality:

Context plays a crucial role in determining the environment where individuals perform, whether in exercises, role-plays, or real-life challenges. This contextualization also influences the quality of performance.

The Bow-Tie Model:

The bow-tie model visualizes the interdependencies of competence components:

- Performance Lens: The intersection where knowledge, skills, and Attitude are demonstrated through activities and behaviours.
- Competence Levels: Represented as circles, indicating that higher competence covers larger areas and balances all aspects equally.

This model highlights that competences are not just about knowledge retention but also about practical application and continuous development of abilities.

Implementation in SMERALD Framework:

Trainers will develop tasks and activities tailored to their participants' needs, incorporating real-world scenarios. For example, in an AI-focused training, participants will learn about prompting by rewriting statements using ChatGPT in specific environments or as specific characters (e.g., Darwin defining digital tools or digital analysis). This approach aligns with LEVEL5 dimensions:

- Attitude Dimension: Engaging with ChatGPT fosters a positive attitude towards AI tools.
- Skill Dimension: Participants develop basic skills in prompting and utilizing AI effectively.
- Knowledge Dimension: Understanding the theoretical aspects of AI and its applications.

These tasks can be mapped to LEVEL5's beginner level 1, providing a structured pathway for progression.

EntreComp Concept

EntreComp, short for Entrepreneurship Competence, is a comprehensive framework developed by the European Commission to define and assess entrepreneurial competences. It provides a common language and reference point for understanding what it means to be entrepreneurial across various contexts, whether starting a business, working in a team, or contributing to social innovation.

At its core, EntreComp identifies three areas of entrepreneurial competence:

- **Ideas and Opportunities:** This dimension focuses on creativity, innovation, and the ability to spot opportunities. It involves generating ideas, critically evaluating them, and turning them into actionable opportunities.
- **Resources:** Here, the emphasis is on the ability to mobilize resources effectively to bring ideas to fruition. This includes financial resources, but also human, intellectual, and social capital necessary to implement entrepreneurial ideas.
- **Into Action:** The third dimension revolves around the capability to take initiative and manage risks. It includes skills in planning and management, as well as resilience and adaptability to navigate uncertainties and setbacks.

EntreComp is not just about starting businesses; it encompasses a broader spectrum of entrepreneurial behaviours and mindsets relevant to personal development, employability, and societal contribution. It serves as a guide for educators, policymakers, and individuals seeking to foster and assess entrepreneurial competences across different sectors and stages of life.

The framework encourages a holistic view of entrepreneurship that values creativity, initiative, and resilience as essential skills for thriving in today's dynamic and uncertain world. By promoting these competences, EntreComp aims to cultivate a more entrepreneurial mindset and culture, thereby fostering innovation, economic growth, and social progress.

Key EntreComp Competences:

- Creativity: Develop creative and purposeful ideas.
- Ethical and Sustainable Thinking: Assess the consequences and impact of ideas, opportunities, and actions.
- Self-awareness and Self-efficacy: Believe in yourself and continuously develop.
- Mobilizing Others: Inspire, enthuse, and get others on board.
- Taking the Initiative: Proactively undertake tasks and challenges.
- Coping with Uncertainty, Ambiguity, and Risk: Make decisions amidst uncertainty and risk.

ECI's Role:

The European Commission's initiative (ECI) operationalizes EntreComp by developing tools and training content for European VET systems. ECI's methodology includes:

- Setting a unified methodological approach.
- Defining criteria for selecting target groups.
- Identifying literature and sources for assessment.

Implementation in SMERALD Framework:

EntreComp competences fit seamlessly with Design Thinking, enhancing the innovative and creative approach. For example, during a training event on SMERALD core competences, EntreComp can be integrated to emphasize the importance of an entrepreneurial mindset. This combination ensures that participants not only acquire technical skills but also develop a creative, proactive, and resilient approach to problem-solving.

The four competence clusters

Clustering competencies into social, personal, organisational and domain competencies provide a strategic approach to training and development. This breakdown provides clear, focused areas for development, making it easier for trainers and participants to identify and target specific skills.

Below you'll find out why clustering is beneficial:

1. Holistic Development:

- By addressing different dimensions of competence, the framework ensures comprehensive personal and professional growth.
- Participants develop a well-rounded skill set that includes technical abilities, interpersonal skills, and strategic thinking.

2. Targeted Training:

- Trainers can design tailored training programs that focus on specific clusters, aligning with the unique needs and goals of their participants.
- This targeted approach enhances the effectiveness of training by concentrating efforts on areas that require development.

3. Interconnected Skills:

- The clustering recognizes the interconnectedness of various competences. For example, personal competences such as problem-solving and initiative-taking support organizational competences like project development and risk management.
- This interconnected approach ensures that participants can see the relevance and application of their skills across different contexts.

4. Contextual Relevance:

- Competences are grouped in a way that aligns with real-world applications, making it easier for participants to relate their learning to their work environment.
- The context-specific clustering helps in bridging the gap between theory and practice.

Allocation of Competences

The 23 competences of the SMERALD project can be grouped into the following four clusters. This approach made it easier to present and use the competences.

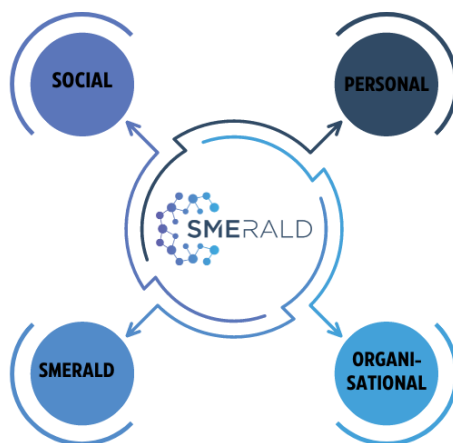


Figure 3: SMERALD 4 clusters

A. Social Competences:



Figure 4: Social competences

These competences focus on interpersonal skills essential for collaboration, leadership, and effective communication in diverse and multicultural environments.

- Teamwork (Intercultural)
- Communication
- Leadership

- Conflict Management
- Empathy in Collaboration

B. Personal Competences:

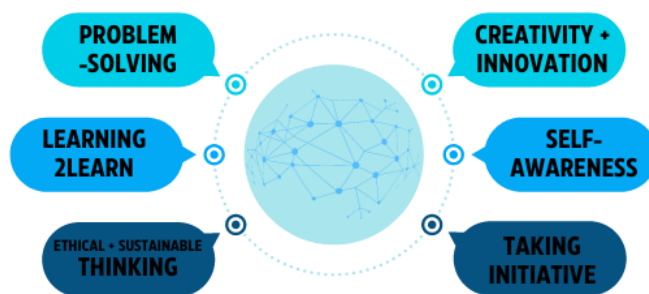


Figure 5: Personal competences

These competences enhance individual capabilities such as creativity, problem-solving, and ethical thinking, contributing to personal growth and self-awareness.

- Enhanced Problem-Solving
- Increased Creativity and Innovation
- Greater Self-Awareness
- Taking Initiative
- Ethical and Sustainable Thinking
- Learning2learn

C. Organizational Competences:

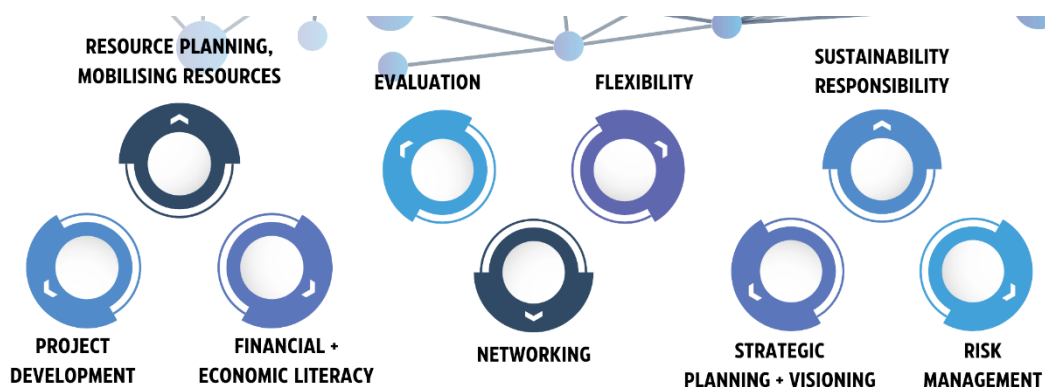


Figure 6: Organisational competences

These competences equip individuals with the skills to effectively manage projects, resources, and strategic planning within an organizational context.

- Project Development
- Resource Planning; Mobilizing Resources
- Financial and Economic Literacy
- Evaluation (Valuing Ideas)
- Networking
- Flexibility (Coping with Ambiguity, Uncertainty, and Risk)
- Strategic Planning and Visioning
- Sustainability and Environmental Responsibility
- Risk Management

D. Field (SMERALD Core) Competences:

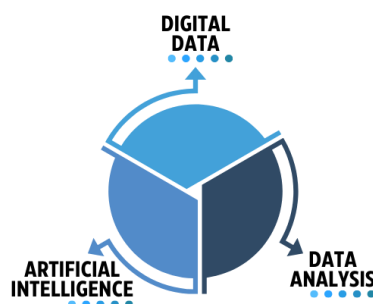


Figure 7: Field (core) competences

These competences are specific to the core technical areas of the SMERALD framework, focusing on digital data, data analytics, and artificial intelligence.

- Digital Data
- Data Analytics
- Artificial Intelligence

By organizing competences into these four clusters, the SMERALD framework provides a clear, structured, and effective approach to developing the diverse skills necessary for thriving in today's complex and dynamic business environments.

Chapter 2: Environment of the Trainer - Plan, Deliver, Assess

Introduction

Effective planning is the cornerstone of successful training programs. It involves a deep understanding of learners' needs, careful design of learning activities, and clear goal setting. In the context of the SMERALD framework, which focuses on competences in digital data, data analytics, and artificial intelligence, planning becomes even more crucial. This chapter explores how trainers can plan impactful learning activities by integrating the core competences of SMERALD with the innovative Design Thinking approach.

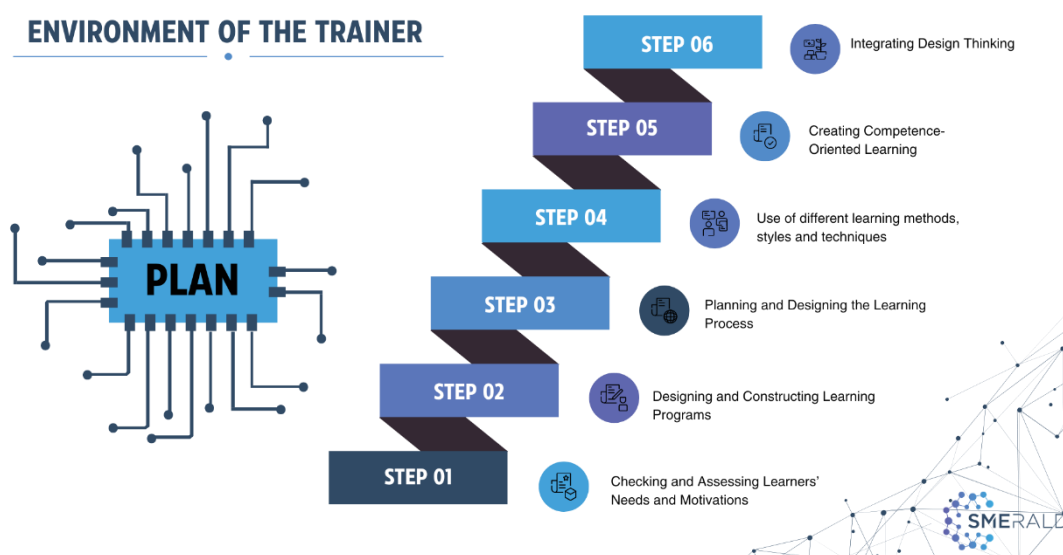


Figure 8: Planning

Planning

Reviewing and assessing learner needs and motivations

To develop effective learning programmes, trainers must first understand learners' backgrounds, experiences and motivations. This includes assessing intrinsic and extrinsic motivations, understanding societal learning needs and identifying the key competences required for lifelong learning. Trainers should use techniques such as active listening, interviewing and interpreting body language to gather this information. The aim is to respond

to these needs with different teaching strategies and to consider learners' existing knowledge as a valuable resource.

Design and structure of learning programmes

Once the needs of learners are known, trainers can begin to design and create comprehensive learning programmes. These programmes should be embedded in relevant contexts and based on sound learning theories. They must be tailored to the needs and requirements of learners and incorporate group dynamics and blended learning approaches where appropriate. Trainers should develop teaching and assessment tools that are consistent with the objectives and based on relevant learning theories. It is important that these programmes are structured in such a way that other professionals can also deliver them effectively.

Planning and designing the learning process

Trainers need to design learning processes that are tailored to the different target groups and take into account the needs, deficits and level of the learners. To do this, they need to be aware of different learning phases, processes, styles, methods and programme designs that facilitate learning. Whether the programme is designed for individual learners or for groups, trainers should use their expertise and knowledge of relevant resources to create effective learning processes. Clear communication of learning objectives is essential to provide learners with a comprehensive understanding of the learning process.

Utilising different learning methods, styles and techniques

Competent trainers should confidently use a variety of learning methods, styles and techniques, including new media and ICT. This includes traditional teaching, facilitation, coaching and supporting learners throughout their learning process. Trainers should keep abreast of the latest developments in learning methods and technologies and critically evaluate their value and applicability to learners. This will ensure that learning activities are engaging, relevant and effective.

Designing competence-orientated learning

Planning competence-oriented learning involves the systematic organisation and development of learning experiences that are geared towards competence-oriented goals. Trainers should be familiar with the principles of self-directed and contextualised learning and

know which activities support the development of specific competences. They need to create open learning environments that promote motivating, rich and reflective learning conditions and ensure the availability of the necessary resources and ICT infrastructure. This approach encourages learners to develop their competences in a mutually beneficial way and promotes lifelong learning and adaptability.

Integration of design thinking

The design thinking approach complements the planning of learning activities by fostering creativity and innovation. Trainers start with the empathy phase, where they understand learners' perspectives, experiences and challenges through interviews and observations. In the Define phase, the learning objectives are clearly formulated and the key problems to be addressed are identified. In the ideate phase, trainers develop different ideas and solutions for learning activities, encouraging creativity and engagement. In the Prototype phase, preliminary versions of learning activities and materials are developed to be trialled and refined. Finally, in the test phase, trainers implement these prototypes with learners and gather feedback to make necessary adjustments and improvements.

Conclusion

By combining the SMERALD core competences with the Design Thinking approach, trainers can plan structured, learner-centred learning activities that promote effective competence development. This comprehensive planning phase lays the foundation for the delivery and evaluation of effective training programmes and ensures that learners are well equipped with the skills and knowledge needed to succeed in the digital age.

Delivery

Implementing Engaging Training Sessions to Foster Competence Development

Implementing effective training sessions requires a deep understanding of how to engage participants and promote the development of key competences. Using the Design Thinking approach, trainers can enhance problem-solving skills and encourage teamwork among learners. This section outlines strategies for facilitating ICT-based learning environments and open learning processes, emphasizing the importance of adaptive and learner-centered methodologies.

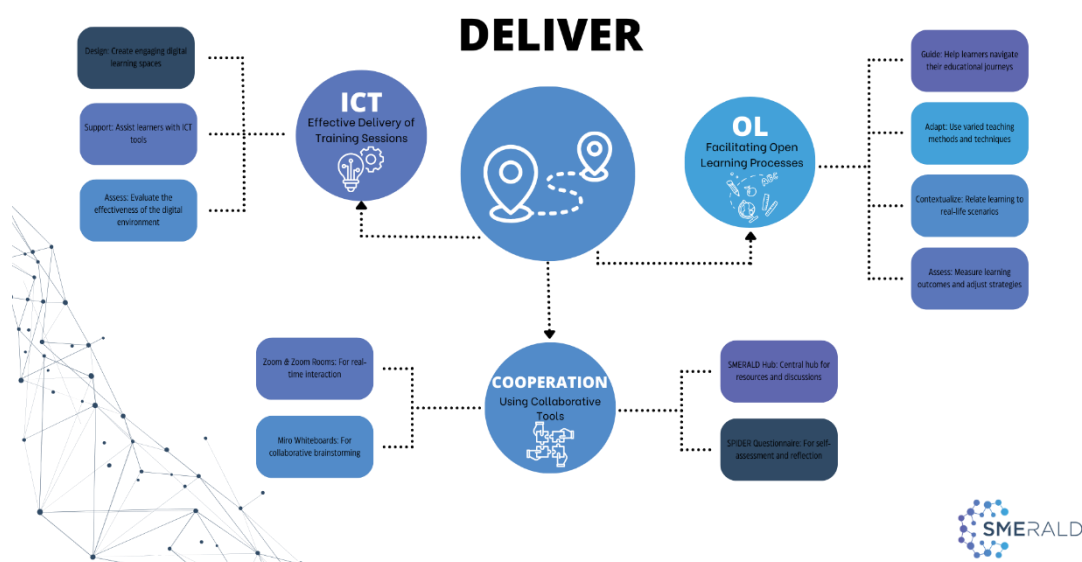


Figure 9: Delivering

Facilitating ICT-Based Learning Environments for Badging

Competence in facilitating and supporting ICT-based learning environments is crucial for modern trainers. Badging, a method of recognizing and validating learning achievements, is one aspect of this competence. However, it extends to general media competences and the effective use of ICT in learning settings.

Trainers should be able to design, develop, implement, and manage ICT-based learning environments. This includes providing support to learners and other educators who are working within these digital contexts. An effective facilitator can assess the ICT environment's effectiveness, ensuring it meets the learners' needs and supports their development.

Key capabilities include:

- Designing ICT-Based Learning Spaces: Crafting digital environments that support interactive and engaging learning experiences.
- Supporting Learners in ICT Contexts: Offering guidance and assistance to learners navigating digital tools and resources.
- Assessing ICT Effectiveness: Evaluating the success of ICT-based learning activities and making necessary adjustments to improve outcomes.

To enhance these learning environments, trainers can leverage platforms like Zoom and Zoom Rooms for real-time interaction and collaboration. Combining these with tools such as digital whiteboards (e.g., Miro) and the SMERALD Hub provides a rich space for exchange, collaboration, and open discussions. These tools help simulate a classroom environment, fostering engagement and active participation.

Facilitating (Open) Learning Processes

A facilitator's role extends beyond just delivering content; it involves guiding learners through their educational journeys and helping them become autonomous, lifelong learners. This requires a flexible approach that adapts to the learners' needs and the specific context of the training.

Trainers should support learners in achieving their learning objectives and adhering to the defined learning strategies. This involves using a variety of teaching methods, styles, and techniques, including the integration of new media and ICT. Relating learning activities to real-life contexts and ensuring they are relevant and engaging is critical for maintaining learner motivation.

Key capabilities include:

- Guiding Learning Processes: Helping learners navigate their educational paths, fostering autonomy and lifelong learning skills.
- Adapting Teaching Methods: Using diverse methods and techniques to meet the varied needs of learners, including new media and ICT.
- Contextualizing Learning: Ensuring that learning activities are relevant to the learners' everyday lives and cultural contexts.

- **Assessing Learning Outcomes:** Evaluating learners' progress and making necessary adjustments to the teaching strategy.

The SMERALD Hub plays a crucial role here by offering learning modules designed to delve into personal needs. The provided materials can be adapted to suit individual learning preferences, making the learning process more relevant and effective. This personalized approach ensures that learners can engage with content that is directly applicable to their personal and professional contexts.

Assessment

Assessment is a critical component of the learning process, serving multiple purposes such as measuring learners' progress, providing feedback, and motivating continued learning. It encompasses both formative and summative assessments, which help in evaluating the acquisition of competences. Formative assessments offer continuous feedback during the learning process, while summative assessments evaluate learning at the end of an instructional period. The integration of digital tools enhances the tracking and documentation of learners' progress, ensuring a comprehensive and dynamic approach to assessment.

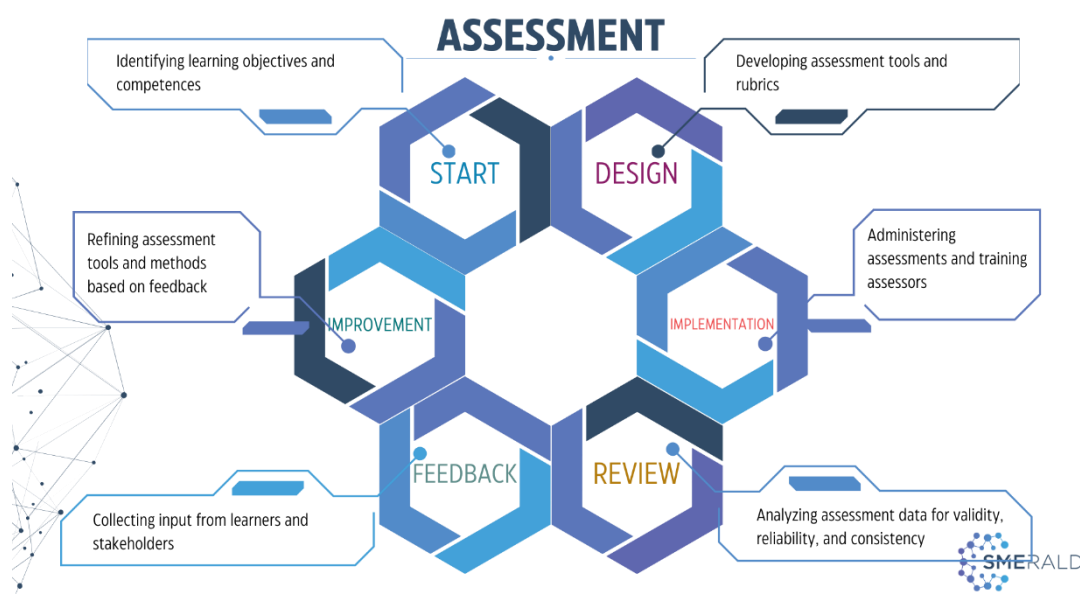


Figure 10: Assessment

Assessing competences and competence developments

The facilitator is competent in assessing competence developments and is aware of the importance of this task for learners, educators, and staff who interact with learners in various learning contexts. The context may vary depending on the learners' groups, the setting, and the level of formalization, and it is determined by the purpose of validation (internally to prove the efficiency of the learning or externally to illustrate the potential of the learner).

Assessment can serve to measure the performance of learners or be used as motivation to continue learning (summative assessment vs. formative assessment). Hence, the assessment settings and methods must be chosen according to the context, purpose, and available resources. Ideally, assessment is integrated into the learning process to achieve a holistic learning design.

Evidencing Competence Developments

The facilitator is capable of rating and evidencing learners' competences and competence developments, providing evidence, and documenting learning outcomes. This requires knowledge of theories about competence development, the concept of learning outcomes, and the skills to describe them correctly and meaningfully. It also requires knowledge and skills in quality assurance and criteria (validity, objectivity, reliability, level consistency). This process involves educators and staff who interact with learners in various learning contexts. While the context may vary with learners' groups, settings, and levels of formalization, in the heritage context, it is likely to be rather informal.

Methods for Evaluating the Acquisition of Competences

Formative and Summative Assessments

Assessment methods should be selected based on the context, purpose, and available resources. Formative assessments provide ongoing feedback to help learners identify their strengths and areas for improvement, while summative assessments evaluate learning at the end of an instructional unit by comparing it against a standard or benchmark.

Feedback Mechanisms

Effective feedback mechanisms are essential for both formative and summative assessments. They should be constructive, timely, and specific to guide learners in their competence development journey.

Digital Tools for Tracking Progress

Digital tools can facilitate the tracking of learners' progress. Tools such as learning management systems (LMS), e-portfolios, and digital badges can help document and visualize the development of competences over time.

Assessment Methods and Data Collection

Reflective Learning Diary

A reflective diary is a self-evaluation tool enabling learners to document and reflect upon their learning experiences. It facilitates self-reflection and provides insight into learners' understanding, content knowledge, and critical self-awareness.

Concept Map

Concept maps illustrate the understanding of relationships between concepts in a particular area of study. They can be used at the beginning and end of a learning activity to identify learners' progress.

Group Discussion

Group discussions, particularly focus groups, explore norms, beliefs, Attitude, practices, and languages within a learning group. They provide qualitative data and insights into group dynamics and learning processes.

Personal (Informal) Interview

Interviews uncover perspectives, experiences, feelings, and insights. They are powerful methods for collecting in-depth qualitative data, which can be analyzed through content analysis.

Questionnaire/Test/Exam

Questionnaires or tests measure knowledge, skills, and Attitude. They can be used for initial, formative, and summative assessments, providing a structured way to evaluate learning outcomes.

Self-Assessment/Checklist

Self-assessment involves learners in the assessment process, allowing them to reflect upon their learning and record their achievements. It fosters ownership of learning and can be both formative and summative.

Observation

Observation collects evidence of achievement by watching learners' performances. It can be direct or indirect and provides a way to see knowledge put into practice.

(E-)Portfolio

Portfolios document a person's achievements and learning. E-portfolios, in particular, allow for dynamic, ongoing documentation and self-expression.

Quality Assurance in Assessment

Quality assurance in assessment is a crucial process that ensures the methods used to evaluate learners' competences are fair, reliable, and valid. This process involves a systematic approach to designing, implementing, and reviewing assessment practices to maintain high standards and support learners' competence development. Here are the key components of quality assurance in assessment:

Validity

- Validity refers to the extent to which an assessment measures what it is intended to measure. To ensure validity:

- **Content Validity:** The assessment should cover the entire content area it aims to evaluate. This involves aligning assessment tasks with learning objectives and competences.
- **Construct Validity:** The assessment should accurately measure the theoretical construct it is intended to assess. This requires a deep understanding of the competences being evaluated and the design of tasks that genuinely reflect these competences.
- **Criterion-Related Validity:** The assessment should correlate well with other measures of the same competence. This can be established through concurrent validity (correlating the assessment with another established measure at the same time) or predictive validity (demonstrating that the assessment can predict future performance).

Objectivity

- Objectivity ensures that assessment outcomes are not influenced by the assessor's biases or subjective judgments. To enhance objectivity:
- **Standardization:** Use standardized instructions, materials, and scoring criteria to ensure consistency across different assessors and contexts.
- **Clear Rubrics:** Develop clear, detailed rubrics that specify the criteria for different levels of performance. Rubrics help in minimizing subjectivity and providing transparent evaluation standards.
- **Training for Assessors:** Train assessors to apply rubrics consistently and to understand the importance of objectivity in assessment.

Reliability

Reliability refers to the consistency and stability of assessment results over time and across different contexts. To ensure reliability:

- **Test-Retest Reliability:** Ensure that the assessment produces consistent results when administered at different times.
- **Inter-Rater Reliability:** Ensure that different assessors give consistent scores to the same performance. This can be improved by using clear rubrics and providing assessor training.
- **Internal Consistency:** Ensure that different parts of the assessment measure the same construct. This can be evaluated using statistical methods such as Cronbach's alpha.

Consistency

Consistency in assessment refers to the uniform application of assessment methods and criteria across different contexts and times. To achieve consistency:

- Documentation: Maintain thorough documentation of assessment procedures, criteria, and standards. This helps in replicating the assessment process accurately.
- Continuous Monitoring: Regularly review and update assessment methods to ensure they remain relevant and aligned with learning objectives and standards.
- Feedback Loops: Implement feedback mechanisms where assessors, learners, and other stakeholders can provide input on the assessment process. Use this feedback to make continuous improvements.

Practical Steps for Quality Assurance in Assessment

1. Design Phase: Develop assessment tools that align with learning objectives and competences. Ensure that the design includes clear rubrics and standardized instructions.
2. Implementation Phase: Administer assessments consistently and provide assessors with the necessary training and resources to apply standards uniformly.
3. Review Phase: Regularly review assessment data to check for validity, objectivity, reliability, and consistency. Use statistical analyses to identify areas for improvement.
4. Feedback and Improvement: Collect feedback from learners, educators, and other stakeholders. Use this feedback to refine assessment tools and practices.

By embedding quality assurance practices into the assessment process, educators can ensure that assessments are fair, reliable, and valid. This not only enhances the credibility of the assessment results but also supports the overall goal of fostering effective learning and competence development.

Chapter 3: Teaching SMERALD's Specific Competences

The importance of developing core competences in different areas cannot be overemphasised in today's rapidly evolving business world. The SMERALD project emphasises the need for trainers, educators and facilitators to cultivate these competences in learners in both informal civic projects and non-formal/formal business contexts. The project focuses on equipping learners with basic skills in three key areas: facilitation skills, core digital skills (digital data, data analysis, artificial intelligence) and transversal skills (social, personal and organisational skills).

Facilitation skills

In the context of the SMERALD project, facilitation competences are crucial for trainers and facilitators who are responsible for promoting specific skills in learners in different environments. These competences enable trainers to manage resources effectively, integrate digital technologies and foster creativity. Trainers need to skilfully combine resources, tailor technologies to the audience and use different methods to encourage innovation. The design thinking approach, a user-centred method for solving complex problems and fostering innovation, is an essential part of the skills transfer. It enables trainers to create a collaborative learning environment, tailor learning concepts for different groups and motivate participants to improve their skills.

SMERALD's core competences

Digital Data

Educators who want to support the development of digital data literacy need a deep understanding of the principles and practices of data management. This includes knowledge of data types, sources, quality assurance and governance. Mastery of data management tools and platforms is essential for effective data collection, storage and retrieval. In addition, trainers should have strong data analysis and interpretation skills, including familiarity with statistical methods and techniques for extracting insights from data. They need to be able to critically analyse data to inform business decisions.

Data Analysis

Teaching data analysis skills in small and medium-sized enterprises (SMEs) requires a comprehensive set of skills tailored to the specific needs of these organisations. Trainers need a solid grounding in the fundamentals of data analysis, including data types, collection methods and data preparation techniques. Mastery of analytical tools such as Excel, SQL, Python or R is essential. Trainers should draw on industry experience to translate abstract analytical concepts into practical applications that address the challenges faced by SMEs. This practical knowledge, combined with the theoretical underpinnings, increases the relevance and effectiveness of the training.

Artificial Intelligence

To deliver effective AI training to SMEs, trainers must have a comprehensive understanding of AI concepts tailored to the specific challenges of small businesses. Essential skills include machine learning, deep learning, neural networks, natural language processing, computer vision and robotics. Trainers should understand the practical applications of AI in different industries, focusing on examples relevant to SMEs. Familiarity with common AI tools and platforms, programming skills in Python or R, and knowledge of data processing and model evaluation are essential. Trainers also need to be aware of the ethical and societal aspects of AI, including data protection and responsible AI development. Pedagogical approaches should be based on adult education and emphasise practical experience and real-world applications.

Generic competences

Social Competence

Effective collaboration and communication are the backbone of any organisation. Soft skills such as teamwork, communication, leadership, conflict management and empathy are critical to fostering a productive working environment. These skills are universally applicable across roles and sectors and ensure that individuals can work towards common goals.

Personal competences

Personal competencies enable individuals to manage themselves effectively and adapt to a changing environment. These skills, which include creative thinking, problem solving, self-awareness and lifelong learning, are essential for personal and professional development. By developing these competencies, individuals can increase their overall effectiveness and make a meaningful contribution to their organisation and society.

Organisational competences

Organisational skills are critical to ensuring efficient operations, strategic growth and long-term sustainability. These competences include project development, resource planning, financial literacy, evaluation, networking, flexibility, strategic planning, sustainability and risk management. By mastering these competencies, organisations can manage complex situations, exploit opportunities and minimise risks.

In summary, the SMERALD project emphasises the importance of developing a balanced set of competences in different areas. By equipping trainers, educators and facilitators with the necessary skills and knowledge, the project aims to promote a culture of continuous improvement, innovation and sustainable growth in both informal civil society projects and non-formal/formal business contexts.

Facilitation Competences

In the context of the SMERALD project, facilitation competences are crucial for trainers and facilitators who are responsible for cultivating specific competences in learners across various settings, including informal civic projects and non-formal/formal business contexts. The key areas for trainers include resource management, digital technology integration, and fostering creativity. Trainers need to be adept at combining resources, integrating technologies to suit the audience, and applying various methods to encourage innovation.

Competence Description and the Design Thinking Approach

The trainer is competent in facilitating a design-based collaborative learning environment using various methods, tools, concepts, and approaches. This involves adapting and developing collaborative learning designs for different target groups and being flexible in re-planning and adjusting to the needs of the situation. Additionally, the trainer can motivate and inspire participants to develop their competences in this context.

Resource Management: Trainers must effectively manage and allocate resources to support learning activities. This includes physical resources such as materials and spaces, as well as digital resources like online tools and platforms.

Digital Technology Integration: In today's learning environments, integrating digital technologies is essential. Trainers should be proficient in using digital tools and platforms to enhance learning, create engaging content, and facilitate communication and collaboration among participants.

Fostering Creativity: Encouraging creativity is vital for innovation and problem-solving. Trainers should use various methods to stimulate creative thinking and provide opportunities for learners to explore and express their ideas.

The Design Thinking approach is a powerful framework that can be integrated into the facilitation competences to enhance the learning process. Design Thinking is a user-centered method for solving complex problems and fostering innovation. It includes five stages: Empathize, Define, Ideate, Prototype, and Test. Here's how it can be applied:

1. **Empathize:** Trainers should understand the needs, motivations, and challenges of their learners. This involves active listening, observing, and engaging with learners to gain deep insights into their experiences and perspectives.
2. **Define:** Trainers need to clearly define the learning objectives and problems based on the insights gathered during the empathy stage. This step ensures that the learning activities are aligned with the actual needs of the learners.
3. **Ideate:** This stage involves generating a wide range of ideas and solutions to address the defined problems. Trainers should encourage brainstorming sessions and creative thinking activities to foster innovation and explore various possibilities.
4. **Prototype:** Trainers develop small-scale prototypes or models of the learning activities and environments. These prototypes are designed to test and refine ideas before full implementation.
5. **Test:** Finally, trainers test the prototypes with learners, gather feedback, and make necessary adjustments. This iterative process ensures that the learning activities are effective and meet the learners' needs.

By integrating Design Thinking into facilitation competences, trainers can create more engaging, effective, and learner-centered educational experiences. This approach not only

enhances the learning process but also empowers learners to become active participants in their own development.

These facilitation competences align closely with the concepts discussed in Chapter 2, focusing on creating effective learning environments and ensuring that trainers are well-equipped to support learners in developing their competences.

Facilitation Competences in the SMERALD Project

Facilitation competences are essential for trainers and facilitators within the SMERALD project. These competences enable trainers to create and manage effective learning environments that are collaborative, innovative, and tailored to the needs of different target groups. Facilitation involves not just the transmission of knowledge but also the cultivation of skills and Attitude that support lifelong learning and adaptability in diverse contexts. This comprehensive competence is divided into three key dimensions: Knowledge, Skills, and Attitude.

Knowledge

The learner knows:

- The principles and theories of collaborative learning and design-based methodologies.
- How to integrate digital tools and technologies into learning environments to enhance engagement and effectiveness.
- The various methods and approaches for fostering creativity and innovation in learners.
- Strategies for resource management to optimize the use of available materials and tools.
- Techniques for adapting learning designs to different target groups and contexts.

Skills

The learner is able to:

- Design and implement collaborative learning activities that encourage participation and creativity.
- Utilize digital platforms and tools to facilitate learning and track progress.
- Adapt learning strategies and methods based on the needs and feedback of participants.
- Motivate and inspire learners to engage actively in the learning process and develop their own competences.
- Assess and evaluate the effectiveness of learning activities and make necessary adjustments to improve outcomes.

Attitude

The learner feels:

- Confident in their ability to manage and facilitate diverse learning environments.
- Interested in exploring and integrating new technologies and methods to enhance learning.
- Motivated to continuously improve their facilitation skills and stay updated with current educational trends.
- Committed to creating inclusive and supportive learning spaces that cater to the needs of all participants.
- Enthusiastic about fostering a culture of creativity and innovation among learners.

REFERENCE SYSTEM – Facilitation Competence

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Transferring knowledge and strategies across different learning contexts and target groups. Leveraging experiences from diverse settings to optimize learning outcomes.	Developing, constructing, transferring	Developing new learning activities and methodologies that integrate digital tools. Transferring skills and knowledge to empower learners in diverse educational settings.	Incorporation	Integrating new technologies and methods effectively into facilitation practices. Embodying a culture of creativity and innovation to inspire learners.
4	Knowing when (implicit understanding)	Applying strategies for resource management effectively during facilitation. Recognizing appropriate times to adapt learning designs based on participant feedback.	Discovering acting independently	Innovating new approaches to facilitate learning and foster creativity. Independently assessing and adjusting facilitation techniques to improve outcomes.	Commitment	Committing to creating inclusive and supportive learning spaces. Dedication to ensuring all participants' needs are met during facilitation.
3	Knowing how	Demonstrating practical skills in integrating digital tools and technologies to enhance engagement. Implementing methods to foster creativity and innovation in learners.	Deciding/ selecting	Making informed decisions to adapt learning strategies based on participant needs. Selecting appropriate digital tools to meet specific learning objectives.	Motivation/ appreciation	Maintaining enthusiasm for continuous improvement in facilitation skills. Appreciating the value of creativity and innovation in learning environments.
2	Knowing why (distant understanding)	Ability to articulate the rationale behind using specific methods and technologies. Understanding the theoretical underpinnings of creativity and innovation in learning.	Using, imitating	Implementing collaborative learning activities and digital platforms effectively. Applying established facilitation methods to encourage active participation.	Perspective taking	Showing interest in exploring new educational technologies and methodologies. Considering different perspectives and needs when designing learning activities.
1	Knowing what	Understanding the principles and theories of collaborative learning and design-based methodologies. Familiarity with digital tools and technologies used in learning environments.	Perceiving	Noticing participant engagement levels and group dynamics during activities. Recognizing opportunities to enhance learning through digital tools.	Self-orientation	Demonstrating confidence in managing diverse learning environments. Taking responsibility for personal growth and development as a facilitator.

SMERALD's Core Competences

These include expertise in digital data, data analytics, and AI. The framework will detail the technical skills required, tools and software used, and methods for applying these competences in real-world scenarios.

Introduction to Digital Data

Trainers, teachers or educators who wish to support the development of digital data literacy among learners should acquire a comprehensive understanding of the basic principles and practices of data management. This includes knowledge of data types, sources, quality assurance and governance. They need to master data management tools and platforms to effectively collect, store and retrieve data.

They should also have strong data analysis and interpretation skills, including familiarity with statistical methods and techniques for extracting insights from data. This includes the ability to critically and accurately analyse data to inform business decisions.

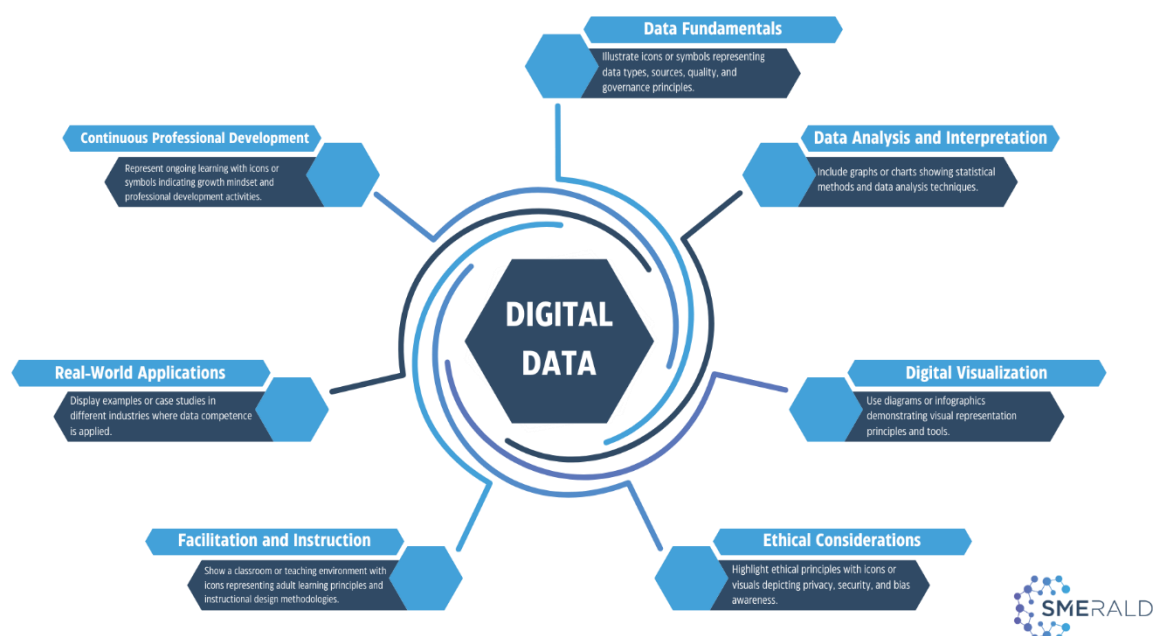


Figure 11: Digital Data

A critical aspect of teaching digital data literacy is the mastery of digital visualisation. Teachers should understand the principles of data visualisation, including the selection of appropriate visual representations and the effective interpretation of visual data. They should be able to create compelling visualisations that enhance the understanding and communication of complex data findings.

Ethical considerations in the handling of data are of paramount importance. Trainers should be aware of ethical issues related to privacy, confidentiality, security and bias in data analysis. They should teach and model ethical practices in data collection, analysis and use to ensure integrity and trustworthiness.

Good facilitation and teaching skills are essential for designing and delivering effective learning experiences. Trainers should understand adult learning principles and instructional design methods. They should create engaging learning environments that encourage exploration and application of digital data concepts.

In addition, the integration of real-world applications is crucial. Teachers should provide practical examples and case studies that show how digital data analysis and visualisation are used in different industries. This will help learners to connect theoretical knowledge with practical applications.

Continuous professional development is essential. Trainers should constantly update their skills and keep abreast of advances in data management, analysis techniques and digital visualisation tools. They should demonstrate a growth mindset and enthusiasm for lifelong learning in order to effectively support learners in acquiring digital data literacy.

In summary, trainers, teachers or educators have an important role to play in promoting learners' digital data literacy by equipping themselves with the knowledge, skills and Attitude required for effective teaching and learning of data management, analysis and visualisation.

Digital Data

Competence Description

Digital data literacy involves a comprehensive understanding of the principles, methods and ethical considerations involved in collecting, managing, analysing and interpreting digital data to gain meaningful insights and make strategic business decisions. This includes mastering the fundamentals of various data management tools and techniques to ensure data quality, accuracy and reliability. In addition, digital visualisation skills include the ability to effectively present complex data sets using visual tools and techniques to enhance understanding, facilitate decision making, and communicate insights clearly and persuasively to stakeholders. It also involves keeping abreast of technological advances and industry trends in order to make effective use of new tools and practices.

Knowledge

- The learner knows the principles of data types, sources, and quality assurance.
- The learner understands statistical methods and data analysis techniques.
- The learner is familiar with ethical considerations in data handling, including privacy, security, and bias.
- The learner is aware of data visualization principles and tools.
- The learner understands the importance of data governance and compliance.

Skills

- The learner is able to collect and preprocess data from various sources for analysis.
- The learner can apply statistical methods to analyze data and derive meaningful insights.
- The learner is proficient in using data visualization tools to present insights effectively.
- The learner can interpret and communicate complex data findings to stakeholders.
- The learner can apply ethical guidelines in data collection, analysis, and interpretation.

Attitude

- The learner feels confident in handling and managing digital data responsibly.
- The learner is interested in exploring new data analysis techniques and tools.
- The learner is motivated to maintain data accuracy and integrity throughout the analysis process.
- The learner is committed to ethical practices and respects data privacy and confidentiality.

- The learner is enthusiastic about using data to inform strategic decision-making and problem-solving.

REFERENCE SYSTEM – Digital Data

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 apply data management and visualization methodologies in varied contexts.	Developing, constructing, transferring	Innovatively developing and adapting data visualization techniques to communicate insights effectively in various contexts.	Incorporation	Embracing data-driven decision making and inspiring others to value data insights in their work.
4	Knowing when (implicit understanding)	Practical knowledge of different data management techniques and when to use each for optimal decision-making.	Discovering acting independently	Independently seeking out and implementing advanced data analysis tools and methodologies.	Commitment	Committed to continuously improving data management skills and applying new data techniques.
3	Knowing how	Theoretical and practical understanding of how to use data analysis tools and techniques effectively.	Deciding/ selecting	Choosing appropriate data analysis tools and methods to meet specific business needs.	Motivation/ appreciation	Motivated to apply data analysis skills and appreciating the value of accurate data in business decisions.
2	Knowing why (distant understanding)	Understanding the importance of accurate data management and how it impacts business decisions and strategies.	Using, imitating	Applying basic data analysis techniques and using digital tools to visualize data effectively.	Perspective taking	Interested in exploring new data analysis methodologies and understanding their broader impacts.
1	Knowing what	Basic awareness of what digital data is, and its relevance in business contexts.	Perceiving	Recognizing the need for data analysis and beginning to understand how digital data tools can be applied.	Self-orientation	Beginning to see the importance of data management in one's own work and being curious about its applications.

Introduction to Data Analysis

Teaching data analysis competences in small and medium-sized enterprises (SMEs) requires trainers, teachers or instructors to have a comprehensive set of skills, knowledge and Attitude tailored to the specific needs and challenges of SMEs.

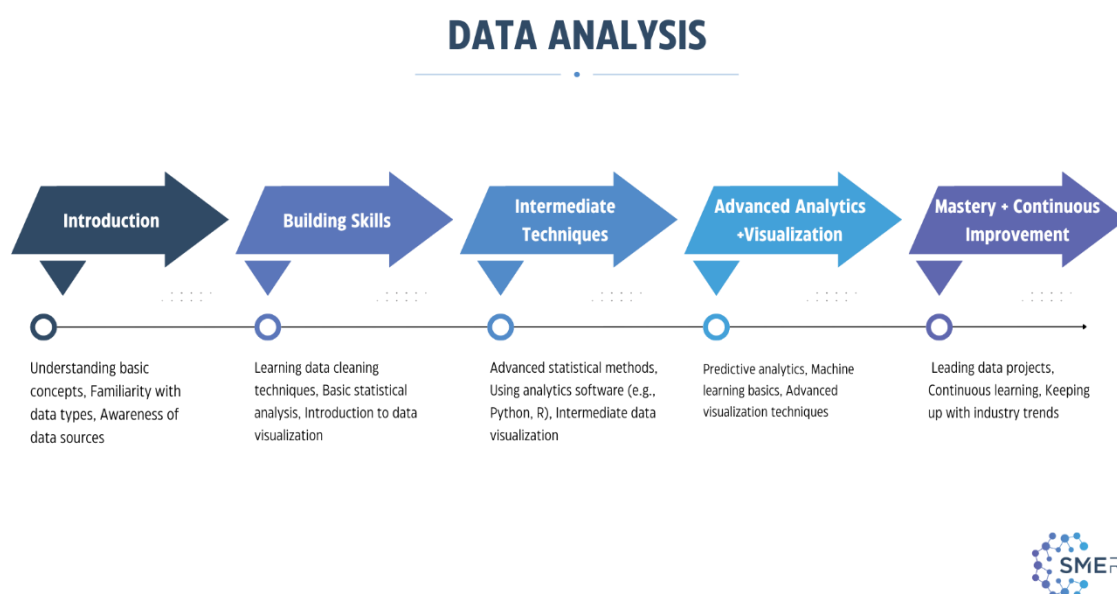


Figure 12: Data Analysis

First, they need to have a solid grounding in the fundamentals of data analytics. This includes a deep understanding of basic concepts such as data types, data collection methods, data cleansing and preparation techniques. Knowledge of analytical tools and platforms such as Excel, SQL, Python or R is essential. Trainers should maintain high standards of accuracy and precision in data analysis, while being open to exploring and integrating new analytical techniques and tools as they evolve.

In addition, trainers need to draw on industry-relevant experience and examples that relate to the SME context. They should be able to translate abstract analytical concepts into practical applications that address the challenges faced by SMEs. This requires not only knowledge of the theoretical foundations of data analysis, but also an understanding of how these concepts can be applied to real-life scenarios in SMEs. Practical knowledge of case studies and SME-specific examples will help make the training more relevant and effective.

Effective training design and facilitation skills are essential to provide meaningful learning opportunities. Trainers need to be familiar with adult learning principles and be able to design tailor-made training sessions, workshops or courses for different SME target groups. Flexibility and adaptability are essential as they allow them to adapt the content and delivery methods based on the individual learning needs and feedback of the SME participants. This approach ensures that training is engaging, accessible and leads to effective learning outcomes.

In addition, trainers should provide hands-on experiences that enable SME participants to directly apply data analytics tools and techniques. Through guided exercises, projects or simulations, SMEs can gain confidence and competence in using analytics for decision making and operational improvements. Encouraging active participation and experimentation promotes a deeper understanding and practical application of data analytics concepts.

Ethical considerations in data analysis should not be ignored. Trainers should provide SME participants with a strong awareness of ethical issues related to data protection, confidentiality and transparency. They should integrate discussions on ethical practices into the training content and emphasise the importance of maintaining data integrity and respecting data protection rights in all aspects of data analytics activities in SMEs.

Finally, trainers play a crucial role in supporting SMEs' continuous learning and improvement in data analytics. They should keep abreast of new trends and advances in data analytics tools, techniques and methodologies. By providing ongoing resources, guidance and encouragement to continue learning beyond the initial training, trainers empower SMEs to continuously improve their data analytics capabilities. This fosters a culture of lifelong learning and adaptation, which is essential for SMEs to remain competitive and responsive in today's data-driven business landscape.

In summary, the effective promotion of data analytics literacy in SMEs requires trainers, teachers or educators who are not only knowledgeable and skilled in data analytics, but also empathetic and responsive to the unique challenges and learning needs of SMEs. By combining expertise with practical application, ethical awareness and ongoing support for learning and development, trainers can make a significant contribution to building robust data analytics competence in SMEs.

Digital Analysis

Competence Description

Data Analysis competence involves the ability to systematically collect, process, and interpret data to derive meaningful insights that inform decision-making. This competence is crucial in a wide range of fields, including business, healthcare, education, and science, as it enables individuals and organizations to make evidence-based decisions, identify trends, solve problems, and improve processes.

At its core, Data Analysis competence encompasses a blend of knowledge, skills, and Attitude:

Knowledge:

- Understanding the principles and methodologies of data analysis, including statistical and computational techniques.
- Familiarity with various types of data (qualitative and quantitative) and data sources.
- Awareness of data quality issues and methods for ensuring data accuracy, reliability, and validity.
- Knowledge of data privacy, security, and ethical considerations in data handling and analysis.

Skills:

- Ability to collect and preprocess data from multiple sources, ensuring it is clean and ready for analysis.
- Proficiency in using analytical tools and software, such as Excel, SQL, R, Python, and data visualization tools like Tableau or Power BI.
- Capability to apply statistical and computational methods to analyse data, including descriptive and inferential statistics, machine learning, and predictive analytics.
- Skill in interpreting and visualizing data to effectively communicate insights through charts, graphs, and reports.
- Competence in problem-solving and critical thinking, enabling the translation of data findings into actionable recommendations.

Attitude:

- A curious and analytical mindset, driven by a desire to uncover insights and patterns from data.
- Commitment to ethical standards in data analysis, including data privacy, confidentiality, and integrity.
- Willingness to continuously learn and adapt to new analytical techniques, tools, and technologies.
- Collaborative attitude, recognizing the value of sharing data insights and working with cross-functional teams to achieve common goals.

Overall, Data Analysis competence empowers individuals and organizations to leverage data effectively, transforming raw data into valuable information that drives strategic decisions and fosters innovation. This competence is essential for staying competitive in today's data-driven world, where the ability to analyse and interpret data is a key differentiator.

REFERENCE SYSTEM – Data Analysis

	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 apply data analysis methodologies across different business contexts and sectors.	Developing, constructing, transferring	Innovatively developing new data analysis models and adapting existing ones for various applications.	Incorporation	Internalizing data-driven decision making and motivating others to utilize data analysis in their work.
4	Knowing when (implicit understanding)	Practical knowledge of various data analysis techniques and when each technique is most appropriate.	Discovering acting independently	Independently exploring advanced data analysis techniques and integrating them into business processes.	Commitment	Committed to ongoing improvement of data analysis skills and incorporating new methodologies.
3	Knowing how	Theoretical and practical understanding of executing data analysis using different tools and methods.	Deciding/ selecting	Selecting appropriate data analysis tools and techniques based on specific data sets and business requirements.	Motivation/ appreciation	Motivated to apply data analysis skills regularly and appreciating the insights data can provide.
2	Knowing why (distant understanding)	Understanding the reasons why data analysis is crucial for business intelligence and decision-making.	Using, imitating	Applying basic data analysis techniques and using standard tools to interpret and present data.	Perspective taking	Interested in exploring different data analysis techniques and understanding their impact on business strategy.
1	Knowing what	Basic awareness of what data analysis entails and its significance in a business context.	Perceiving	Recognizing the importance of data analysis and beginning to understand how to use data to generate insights.	Self-orientation	Beginning to see the value of data analysis in one's own work and being curious about its broader applications.

Introduction to Artificial Intelligence

In order to provide effective training or courses on artificial intelligence (AI) for SMEs, a teacher, trainer or instructor must have a comprehensive understanding of the various aspects of AI, tailored to the specific needs and challenges of small and medium-sized enterprises.

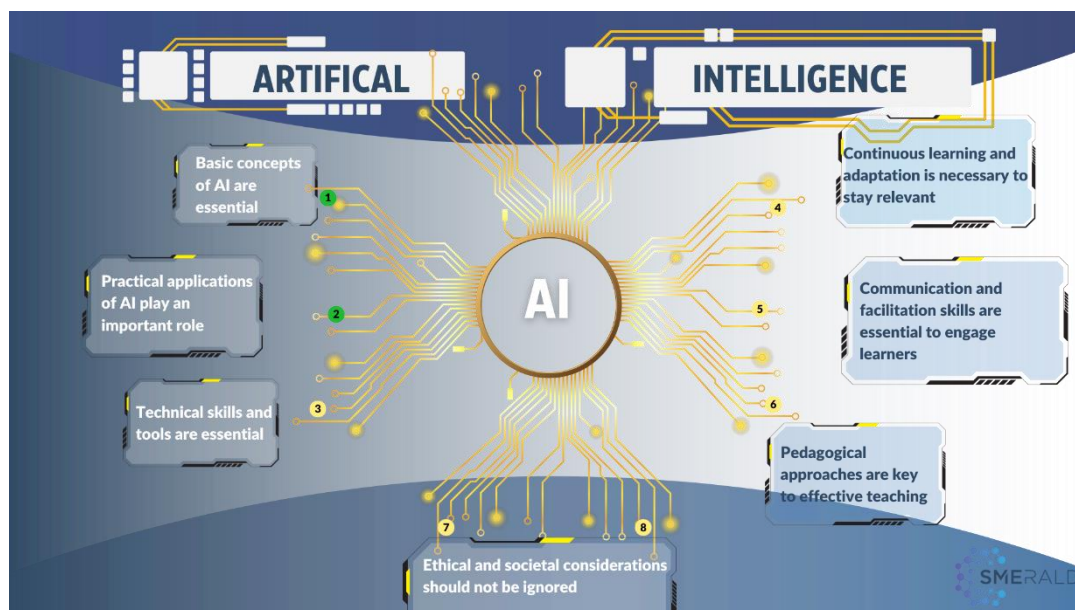


Figure 13: Artificial Intelligence

Basic concepts of AI are essential. This includes an understanding of key AI concepts such as machine learning, deep learning, neural networks, natural language processing (NLP), computer vision and robotics. Familiarity with common AI terminology and jargon is essential. Knowledge of the history and development of AI, including key milestones and breakthroughs, as well as current trends, advances and future directions in AI are also fundamental.

Practical applications of AI play an important role. It is essential to understand how AI can be used in different industries, with a focus on examples relevant to SMEs, such as customer service automation, predictive maintenance, personalised marketing and supply chain optimisation. It is also important to understand how AI can optimise different business processes, increase productivity and drive innovation in SMEs.

Technical skills and tools are essential. Familiarity with common AI tools and platforms such as TensorFlow, PyTorch, Keras, Scikit-Learn and cloud-based services such as AWS AI, Google AI and Azure AI is required. Basic to intermediate programming skills are important, particularly in languages commonly used in AI such as Python and R. Knowledge of data processing, pre-processing and analysis, including knowledge of databases, data cleansing and data visualisation techniques is essential. In addition, an understanding of the process of training, validating and deploying AI models, and knowledge of evaluation metrics and methods for assessing model performance and accuracy are critical.

Ethical and societal considerations should not be ignored. There is a need to be aware of ethical issues related to AI, including bias, fairness, transparency, accountability and potential impacts on jobs and society. Knowledge of data protection laws and regulations (e.g. GDPR), as well as best practices to ensure data security and ethical handling of data, is important. In addition, knowledge of frameworks and guidelines for the responsible development and use of AI is essential.

Pedagogical approaches are key to effective teaching. It is essential to understand how adults learn, including the importance of practical, hands-on experience and real-world applications. The ability to design a curriculum that is tailored to the learning needs of SMEs and includes a mix of theoretical knowledge, practical exercises, case studies and project-based learning is necessary. The ability to develop assessments that measure understanding and competence and to provide constructive feedback to learners is important.

Communication and facilitation skills are essential to engage learners. The ability to break down complex AI concepts into understandable segments for learners with varying levels of technical expertise is essential. The use of interactive and engaging teaching methods such as workshops, group discussions, hands-on exercises and live demonstrations is important. It is essential to motivate learners to experiment with AI tools and techniques and to foster a culture of continuous learning and innovation.

Continuous learning and adaptation is necessary to stay relevant. You must be committed to staying abreast of the latest developments and trends in AI through continuing education, attending industry conferences, and participating in relevant online courses and communities. The ability to adapt training content and methods based on learner feedback and the evolving landscape of AI technologies and applications is essential.

In summary, a teacher, trainer or educator needs a balance of fundamental AI knowledge, practical skills, ethical awareness and pedagogical expertise to effectively train SMEs in AI. They should be able to link theoretical concepts with practical applications, tailor their teaching to the specific needs of SMEs, and create an engaging, supportive learning environment that encourages continuous improvement and innovation.

Artificial Intelligence

Competence Description

The Artificial Intelligence (AI) competence equips learners with the knowledge, skills, and attitudes necessary to understand and apply AI technologies in various business contexts. This competence is essential for navigating the rapidly evolving landscape of AI, ensuring that learners can leverage AI to drive innovation, efficiency, and competitive advantage. As AI continues to permeate different sectors, from healthcare and finance to manufacturing and retail, the ability to harness its power becomes increasingly crucial. By developing this competence, learners will not only gain a deep understanding of AI concepts but also the practical skills to implement AI solutions and the ethical mindset to use AI responsibly and effectively.

Knowledge

The learner will learn the fundamental concepts and principles of Artificial Intelligence, enabling them to understand and apply AI techniques effectively.

- The learner knows the basic concepts and terminologies of AI, including machine learning, deep learning, neural networks, natural language processing, and computer vision.
- The learner understands the importance of AI in today's world and the theoretical foundations that underpin AI technologies.
- The learner knows how to apply fundamental AI techniques and tools, such as TensorFlow and PyTorch, to develop and implement AI models.
- The learner has practical knowledge of when to use different AI methods based on the problem at hand, identifying appropriate situations for specific AI solutions.
- The learner knows how to transfer AI methodologies to various business contexts and industries, leveraging AI across sectors such as healthcare, finance, manufacturing, and retail.

Skills

The learner will learn how to apply AI techniques in practical scenarios, making informed decisions and developing innovative solutions.

- The learner is able to recognize opportunities where AI can be applied to solve problems or improve processes within a business context.

- The learner is able to apply basic AI tools and techniques to real-world problems, using existing AI models and frameworks to understand their workings.
- The learner is able to make informed decisions about which AI tools and techniques to use in various situations, selecting the most appropriate methods for specific challenges.
- The learner is able to independently explore and experiment with advanced AI techniques, innovating new applications and integrating AI into business processes.
- The learner is able to develop new AI models and methodologies tailored to specific business needs, constructing complex solutions and transferring their knowledge across different contexts.

Attitudes

The learner will learn to approach AI with a responsible and innovative mindset, committed to continuous improvement and ethical application.

- The learner feels confident in their ability to understand and apply AI concepts, taking personal responsibility for continuous learning and development in AI.
- The learner is interested in understanding different perspectives on AI and its implications, considering ethical, societal, and economic impacts when developing AI solutions.
- The learner is motivated to continuously improve their AI skills and knowledge, appreciating the potential of AI to transform businesses and driven by a passion for innovation.
- The learner is committed to using AI responsibly and ethically, ensuring that AI applications are fair, transparent, and beneficial to society.
- The learner embodies a culture of AI-driven innovation, integrating AI into their daily work and inspiring others to embrace AI technologies, fostering a collaborative and forward-thinking environment.

REFERENCE SYSTEM – Artificial Intelligence

	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 apply AI methodologies across different business contexts and sectors.	Developing, constructing, transferring	Innovatively developing new AI models and adapting existing ones for various applications.	Incorporation	Internalizing AI-driven decision making and motivating others to utilize AI in their work.
4	Knowing when (implicit understanding)	Practical knowledge of various AI techniques and when each technique is most appropriate.	Discovering acting independently	Independently exploring advanced AI techniques and integrating them into business processes.	Commitment	Committed to ongoing improvement of AI skills and incorporating new methodologies.
3	Knowing how	Theoretical and practical understanding of executing AI using different tools and methods.	Deciding/ selecting	Selecting appropriate AI tools and techniques based on specific data sets and business requirements.	Motivation/ appreciation	Motivated to apply AI skills regularly and appreciating the insights AI can provide.
2	Knowing why (distant understanding)	Understanding the reasons why AI is crucial for innovation, efficiency, and competitive advantage.	Using, imitating	Applying basic AI tools and techniques to real-world problem	Perspective taking	Interested in exploring different AI techniques and understanding their impact on business strategy.
1	Knowing what	Basic awareness of AI concepts, including machine learning, deep learning, and natural language processing.	Perceiving	Recognizing the importance of AI and beginning to understand how to use AI to generate insights.	Self-orientation	Beginning to see the value of AI in one's own work and being curious about its broader applications.

Generic Competences

These are cross-disciplinary and enhance the core competences. They include skills like critical thinking, communication, and collaboration. The chapter will outline how these competences can be developed alongside the core competences through various activities and learning experiences.

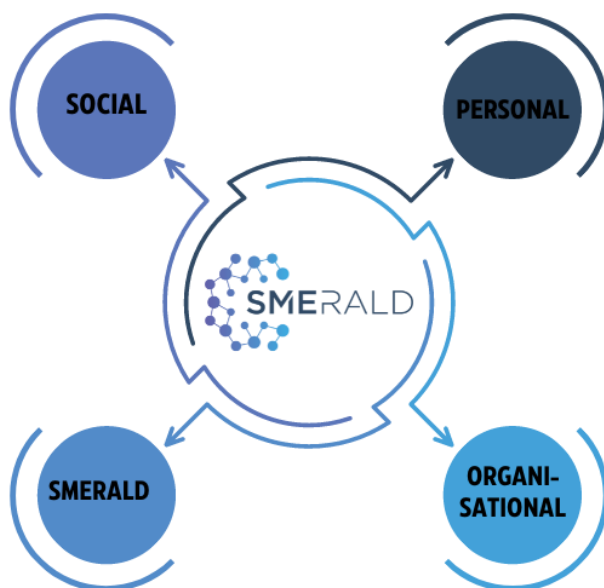


Figure 14: Four field competences

Social competence: The foundation for effective collaboration

Social skills form the backbone of effective collaboration and communication in any organisation. These skills are essential for fostering a productive and harmonious working environment in which individuals can work together towards common goals. Within the SMERALD project, soft skills are considered cross-cutting and generic, as they are universally applicable across different roles and sectors. Irrespective of the specific technical skills or knowledge required in different areas, the ability to communicate effectively, work in teams and provide leadership is critical to success.

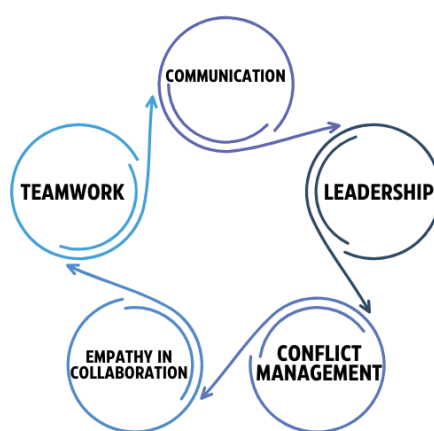


Figure 15: Social Competences

Soft skills include key competences such as:

Teamwork (intercultural):	Working with others, respecting different points of view and working effectively in a multicultural environment.
Communication:	Communicating ideas clearly, listening actively and engaging in meaningful dialogue.
Leadership:	Resolving conflicts, focusing efforts on customer satisfaction and mobilising others to achieve common goals.
Conflict Management:	Handling and resolving conflicts constructively, finding mutually acceptable solutions.
Empathy in Collaboration:	to navigate complex interpersonal dynamics, resolve conflicts constructively, and foster a supportive and inclusive work environment.

These skills are not limited to a specific context, but are fundamental across a range of areas, making them the foundation of any learning and development initiative. By mastering soft skills, individuals improve their ability to contribute effectively to their teams and organisations, promoting both personal and collective success.

Intercultural Communication

Competence Description:

Intercultural communication competence is the ability to communicate respectfully, effectively, and constructively with people from different cultural backgrounds. This involves understanding cultural diversity, adapting communication styles, and building trust and respect. A positive attitude towards diversity and an awareness of one's own cultural identity are essential to avoid misunderstandings and frustrations.

Knowledge

The learner...

- Knows how to build trust and respect with people from different cultures.
- Has the knowledge of effective intercultural communication techniques.
- Knows the benefits of diversity.
- Knows how cultural differences influence communication styles, including their own.
- Has the knowledge to address culture-related conflicts and misunderstandings.

Skills

The learner...

- Is able to communicate clearly with people from different cultural backgrounds.
- Is able to integrate well with colleagues and learners of different cultures.
- Is able to reflect on their own cultural influences in communication.
- Is able to exchange knowledge and experiences with people from different cultures.
- Is able to give and receive feedback effectively across cultural boundaries.
- Is able to manage difficulties, stress, and frustration from intercultural misunderstandings.
- Is able to make themselves understood in diverse cultural contexts.
- Is able to identify and adapt to culture-based problems and misunderstandings.

Attitude

The learner...

- Is motivated to value integrity and respect diversity.
- Is committed to appreciating different cultural backgrounds.
- Likes to inspire a positive attitude towards interacting with people from different cultures.
- Is determined to avoid miscommunication and support others in intercultural interactions.

REFERENCE SYSTEM – Intercultural Communication

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/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.

Teamwork

Competence Description

The learner is competent in interacting with others involved in the activities of the organization and collaborating to reach a common goal. They respect the specific backgrounds, competences, and skills of team/group members and can act as a team member. This involves communication skills like assertiveness, clarity, and active listening, as well as an awareness of diversity in teams and the potential of teamwork. The learner has an attitude of appreciation for teamwork as an efficient way of collaborating and a source of creativity and is determined to contribute to the success of the entire team. They are aware of the roles and capabilities within the team and act, accordingly, putting actions into practice, taking risks, and organizing activities.

Knowledge

The learner...

- Knows ways to establish a team and leverage the different abilities of team members to reach a common goal.
- Knows how to enhance team processes in different contexts.
- Knows the rules of communication within a team.
- Knows what to avoid maintaining a positive atmosphere and workflow in a team.

Skills

The learner...

- Is able to determine whether teamwork is the best way to accomplish a task.
- Is able to work in teams and act in teams according to their role.
- Is able to understand that specific tasks and roles of team members are based on their strengths and weaknesses.
- Is able to judge and identify their strengths and weaknesses, and to assess and take risks when warranted.
- Is able to reflect on their own role in a team.

Attitude

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 – Teamwork

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	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.

Leadership

Competence Description

Leadership competence involves taking initiative, guiding, and influencing others to achieve certain goals. It encompasses decision-making skills, effective communication, trust-building, task delegation, and conflict resolution. A competent leader fosters collaboration, values diversity, and takes responsibility for actions and outcomes.

Knowledge

The learner:

- Knows different types of leadership interventions appropriate for specific situations.
- Knows why leadership is crucial for achieving collaborative goals in a team.
- Knows how to assist others in implementing leadership interventions.
- Knows how to motivate others to reach a goal.
- Knows how to organize work processes in various ways.

Skills

The learner:

- Is able to develop their own leadership style and techniques.
- Is able to apply leadership techniques in different situations.
- Is able to create and execute leadership strategies.
- Is able to take responsibility.
- Is able to motivate others to reach a goal.
- Is able to make decisions.
- Is able to coordinate work processes and communicate assertively.
- Is able to delegate responsibility.

Attitude

The learner:

- Has a positive attitude towards leadership and understands its importance in specific situations.
- Finds it important that other group members value leadership.
- Is motivated to develop their own leadership competences.
- Values and respects others and appreciates teamwork.
- Feels responsible for the team, organization, and achieving goals.
- Is assertive about organizing work.
- Is open to dialogue and finding common solutions to problems.

REFERENCE SYSTEM – Leadership

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	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.

Conflict Management

Competence Description

Conflict management competence involves the ability to resolve conflict situations through the application of specific techniques. It includes identifying the root causes of conflicts, developing appropriate strategies, and applying techniques such as accommodation, mediation, facilitation, and compromise. A competent individual considers the rights, needs, feelings, and values of all parties involved to reach a resolution. They also exhibit foresight to identify and defuse conflicts before they escalate.

Knowledge

The learner:

- Has knowledge of different conflict management strategies and techniques.
- Has knowledge of ways to integrate conflict management strategies in activities involving groups or others.
- Understands the positive potential and benefits of conflict management techniques.
- Recognizes the importance of proactive conflict resolution in maintaining productive group dynamics.

Skills

The learner:

- Is able to identify problems and find solutions in a group of people with different requests and values.
- Is able to apply different conflict management techniques and strategies according to the situation.
- Demonstrates effective communication skills in managing conflicts.
- Displays empathy and active listening during conflict resolution processes.

Attitude

The learner:

- Is determined to solve conflicts.
- Respects others' feelings, rights, requests, and values.
- Is motivated to improve their conflict management techniques.
- Inspires others to use conflict management techniques.
- Values constructive feedback and continuous learning in conflict resolution.
- Promotes a culture of open communication and transparency to prevent conflicts.

REFERENCE SYSTEM – Conflict management

L	COGNITIVE/KNOWLEDGE		ACTIVITY		AFFECTIVE	
	Level title	Level description	Level title	Level description	Level title	Level description
5	Knowing where else (knowledge for transfer)	Knowing how to avoid the arising of conflict situations. Knowing how to help others in looking for a good solution and compromises. Knowing how to teach others conflict management techniques.	Developing/constructing/transferring	Identifying and defusing conflicts before they occur. Elaborating possible ways for compromise and conflict solving strategies. Taking the initiative to introduce different conflict management techniques to the parties involved.	Incorporation	Being motivated to inspire others to learn and apply conflict management techniques to solve their own situations. Feeling the need to help other people improve their conflict management competences.
4	Knowing when (implicit understanding)	Having a profound knowledge on which measure can be taken to solve a specific conflict in different situations. Knowing when a suitable measure should be implemented.	Discovering/acting independently	Devising an own way to listen to and express the arguments of all parties involved, the cons and pros, to discuss them and to find a suitable compromise to solve a problem, even in unfamiliar contexts.	Self-regulation/determination	Being motivated to work on one's own conflict management techniques, to improve their application in practice and to adapt them to new situations.
3	Knowing how	Knowing the theory about certain processes and techniques of conflict solving. Knowing how a certain technique affects a specific situation.	Deciding/selecting	Making a motivated choice on which conflict management technique to apply in a familiar situation based on past experience.	Motivation/appreciation	Appreciating the strength of one's own conflict management techniques. Being motivated to learn more about conflict management techniques.
2	Knowing why (distant understanding)	Knowing why it is important to use different conflict management techniques to solve different situations.	Using/imitating	Acting as instructed in a conflict situation as to avoid confrontation. Using some conflict management techniques, but not as a part of a general strategy.	Perspective taking	Valuing conflict management techniques; Generally feeling that conflict management techniques are useful to solve conflict situations.
1	Knowing what	Knowing about the existence of techniques to solve conflicts.	Perceiving	Recognising the ways people act in conflict situations and the possibilities for avoiding conflict.	Self-orientation	Experiencing the need to apply conflict management techniques to certain situations.

Empathy in collaboration

Empathy in collaboration involves understanding and sharing the feelings of others to foster a cooperative and supportive working environment. This competence is crucial for building trust, enhancing communication, and creating a cohesive team dynamic. Empathetic individuals can recognize and respond to the emotional states of their colleagues, which helps to address concerns, resolve conflicts, and promote a positive work culture.

Knowledge

The learner...

- Knows the importance of empathy in fostering effective collaboration and teamwork.
- Has knowledge of techniques for active listening and understanding others' perspectives.
- Knows the impact of emotional intelligence on team dynamics and performance.
- Understands the cultural and individual differences that influence how empathy is expressed and received.

Skills

The learner...

- Is able to actively listen and respond to the emotions and needs of team members.
- Is able to communicate understanding and validation of others' feelings.
- Is able to build and maintain trust through empathetic interactions.
- Is able to facilitate open and respectful dialogue in the team.
- Is able to recognize and manage their own emotions to better support others.

Attitude

The learner...

- Values the role of empathy in creating a positive and inclusive work environment.
- Is committed to developing their empathetic abilities and applying them in team settings.
- Is motivated to support and uplift colleagues through understanding and compassion.
- Appreciates the diversity of emotions and perspectives within the team.
- Is open to feedback and continuous improvement in their empathetic practices.

REFERENCE SYSTEM – Empathy in Collaboration

KNOWLEDGE			SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced empathy theories and strategies and how to apply them in diverse and complex team environments. Understanding how empathy can drive team innovation and cohesion.	Developing, constructing, transferring	Being able to integrate empathy seamlessly into all aspects of team interaction and leadership, and mentoring others to develop their empathetic skills. Developing new strategies to enhance team empathy.	Incorporation	Valuing empathy as essential for effective leadership and team success and being committed to fostering a culture of empathy within the organization.
4	Knowing when (implicit understanding)	Knowing about different empathy approaches and understanding the subtle cues that indicate the need for empathy in team interactions. Knowing how to apply empathy to prevent conflicts and enhance team morale.	Discovering acting independently	Actively seeking opportunities to apply empathy in various team situations and independently resolving conflicts with empathetic approaches.	Commitment	Committed to continuously improving empathetic skills and encouraging team members to practice empathy.
3	Knowing how	Knowing how to recognize emotional cues and adapt communication styles to support team members effectively. Understanding the impact of empathy on team collaboration and performance.	Deciding/ selecting	Being able to choose and apply appropriate empathetic techniques in different team scenarios and fostering open, empathetic communication within the team.	Motivation/ appreciation	Appreciating the importance of empathy in teamwork and being motivated to enhance personal empathetic responses.
2	Knowing why (distant understanding)	Knowing that empathy is crucial for team dynamics and how it can influence team relationships and outcomes. Understanding the basic principles of emotional intelligence.	Using, imitating	Communicating empathetically in a conscious manner and reacting to team members' emotional cues by following established empathy practices.	Perspective taking	Being curious about others' emotions and perspectives, and willing to learn more about empathetic communication.
1	Knowing what	Knowing the basic concept of empathy and its importance in teamwork and collaboration. Recognizing the fundamental elements of empathetic communication.	Perceiving	Recognizing emotional cues and engaging in basic empathetic interactions with team members.	Self-orientation	Understanding the benefits of empathy in collaboration and being open to learning and practicing basic empathetic techniques.

Personal competences

Personal competences are essential skills and attributes that enable individuals to manage themselves effectively and adapt to a changing environment. These competencies form the basis for personal and professional growth and enable individuals to navigate complex situations, make informed decisions and contribute positively to their organisations and communities. Personal competences encompass a range of skills from creative thinking and problem solving to self-awareness and lifelong learning.

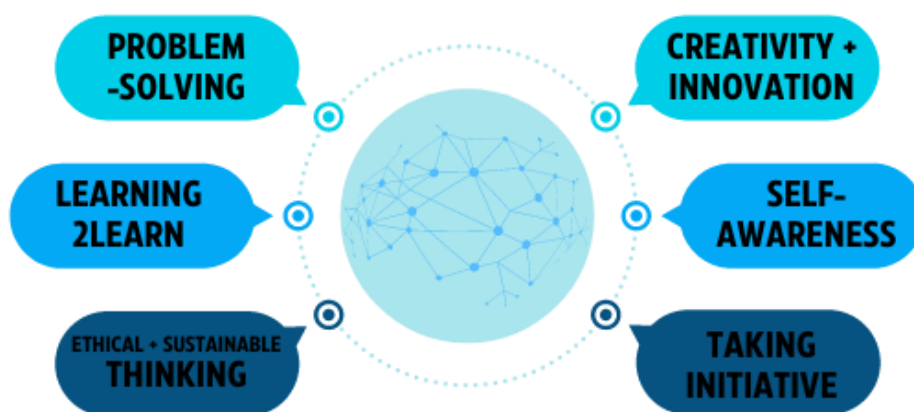


Figure 16: Personal Competences

Benefits of Personal Competences:

Enhanced Problem-Solving: Personal competences such as critical thinking and problem-solving equip individuals with the skills to analyse situations, identify potential issues, and develop effective solutions.

Increased Creativity and Innovation:

Competences like vision and creativity encourage individuals to think outside the box, fostering innovation and the generation of new ideas.

Greater Self-Awareness: Self-awareness and self-efficacy help individuals understand their strengths and weaknesses, leading to better personal and professional development.

Taking Initiative: Looking for opportunities and taking initiative empower individuals to seize new opportunities and drive projects forward.

Ethical and Sustainable Thinking:

Critical thinking that incorporates ethical and sustainable considerations ensures that decisions made are responsible and long-lasting.

Learning2learn:

Learning through experience encourages a mindset of lifelong learning, ensuring individuals remain adaptable and up-to-date with the latest developments in their field.

By developing these personal competences, individuals can enhance their overall effectiveness, contributing more meaningfully to their organizations and society at large.

Problem solving

Competence Description

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, Attitude 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

Attitude

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		ATTITUDE/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.

Creativity

Competence Description

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

Attitude

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

REFERENCE SYSTEM – Creativity

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	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 Attitude 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.

Self-awareness and Self-efficacy

Competence Description

Critical thinking involves the objective analysis and evaluation of issues to form a judgment. This competence includes ethical and sustainable thinking, ensuring that decisions and actions are guided by ethical principles and considerations of sustainability. It is crucial for making informed and responsible choices.

Knowledge

The learner...

- Knows the importance of self-awareness in personal and professional development.
- Knows techniques for self-reflection and introspection to enhance self-awareness.
- Knows how to recognize and manage personal biases and emotions effectively.
- Knows the significance of empathy and cultural awareness in building meaningful relationships.
- Knows how self-awareness contributes to effective leadership and communication.

Skills

The learner...

- Is able to practice self-reflection and introspection to gain insights into their thoughts, emotions, and behaviors.
- Is able to recognize and manage personal biases and emotions in various situations.
- Is able to demonstrate empathy and cultural awareness in interactions with others.
- Is able to use feedback constructively to enhance self-awareness and personal development.
- Is able to communicate authentically and regulate emotions in interpersonal relationships.

Attitude:

The learner...

- Values self-awareness as a foundation for personal and professional growth.
- Values authenticity and empathy in interactions with others.
- Is open to receiving feedback and using it as a tool for self-improvement.
- Is committed to continuous self-reflection and learning.
- Is respectful of diverse perspectives and cultural backgrounds.

REFERENCE SYSTEM – Self-awareness

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing where else self-awareness can be applied strategically, integrating it into personal and professional growth.	Developing, constructing, transferring	Developing and transferring advanced self-awareness techniques to different contexts.	Incorporation	Incorporating self-awareness into all aspects of life and inspiring others to do the same.
4	Knowing when (implicit understanding)	Knowing when to apply self-awareness by recognizing personal biases and emotions in various situations	Discovering acting independently	Discovering deeper insights through independent reflection and action.	Commitment	Commitment to continuously improving self-awareness skills.
3	Knowing how	Knowing how to practice self-awareness through basic techniques of reflection and introspection.	Deciding/ selecting	Deciding to apply self-awareness by managing personal biases and emotions.	Motivation/ appreciation	Motivation and appreciation for practicing self-awareness regularly.
2	Knowing why (distant understanding)	Understanding why self-awareness is important and its relevance in personal growth.	Using, imitating	Using basic techniques for self-reflection and introspection.	Perspective taking	Perspective taking to understand how self-awareness impacts personal growth.
1	Knowing what	Knowing what self-awareness is and its basic significance in personal development.	Perceiving	Perceiving one's own thoughts and emotions.	Self-orientation	Self-orientation towards recognizing the importance of self-awareness.

REFERENCE SYSTEM – Self-efficacy

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing where else self-efficacy can be applied strategically, transferring it to new challenges and contexts.	Developing, constructing, transferring	Developing and transferring advanced self-efficacy skills to tackle complex challenges.	Incorporation	Incorporating self-efficacy into one's mindset and inspiring others to believe in their abilities.
4	Knowing when (implicit understanding)	Knowing when to apply self-efficacy by maintaining motivation and seeking support when needed.	Discovering acting independently	Discovering one's strengths and acting independently to achieve goals.	Commitment	Commitment to believing in oneself and persisting in the face of challenges.
3	Knowing how	Knowing how to build self-efficacy through setting achievable goals and overcoming obstacles.	Deciding/ selecting	Deciding to set and pursue goals with confidence.	Motivation/ appreciation	Motivation and appreciation for building and maintaining self-efficacy.
2	Knowing why (distant understanding)	Understanding why self-efficacy is important and its impact on personal and professional success.	Using, imitating	Using basic strategies to build self-confidence and motivation.	Perspective taking	Perspective taking to understand the impact of self-efficacy on achieving success.
1	Knowing what	Knowing what self-efficacy is and its basic role in achieving goals.	Perceiving	Perceiving one's own abilities and potential for success.	Self-orientation	Self-orientation towards recognizing the importance of self-efficacy.

Taking Initiative - Looking for Opportunities (Sense of Initiative)

Competence Description

Having a sense of initiative involves actively seeking out opportunities and taking proactive steps to capitalize on them. Individuals with this competence are not just reactive but are able to identify potential avenues for growth or improvement and take action without waiting for instructions.

Knowledge

- The learner knows what initiative entails, including the proactive identification and pursuit of opportunities.
- The learner has the knowledge of the reasons why taking initiative is crucial for personal and professional growth.
- The learner knows when it's appropriate to seize opportunities and take action.
- The learner understands how initiative can be applied strategically in different contexts for optimal outcomes.

Skills

- The learner is able to perceive potential opportunities for action by actively scanning the environment.
- The learner is able to use initiative to initiate action and pursue opportunities without waiting for explicit instructions.
- The learner is able to decide on the best course of action to capitalize on identified opportunities.
- The learner is able to discover new opportunities independently through proactive exploration and experimentation.
- The learner is able to develop a proactive mindset and transfer initiative skills to different situations and challenges.

Attitude

- The learner is motivated to seek out and capitalize on opportunities for growth and improvement.
- The learner is committed to taking proactive action and seizing opportunities rather than waiting for them to come.
- The learner likes to inspire others to adopt a proactive mindset and take initiative in their own pursuits.
- The learner appreciates the benefits that come from being proactive and taking initiative.
- The learner incorporates a proactive approach and initiative into their daily work and life, making it a natural part of their behaviour.

REFERENCE SYSTEM – Taking Initiative

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing where else initiative can be applied strategically, integrating it into various aspects of life.	Developing, constructing, transferring	Developing and transferring advanced initiative skills to different contexts.	Incorporation	Incorporating a proactive mindset and initiative into all aspects of life.
4	Knowing when (implicit understanding)	Knowing when to take initiative and act on opportunities.	Discovering acting independently	Discovering new opportunities independently and taking proactive steps.	Commitment	Commitment to seizing opportunities and taking proactive action.
3	Knowing how	Knowing how to identify and evaluate opportunities for action.	Deciding/ selecting	Deciding on appropriate actions to capitalize on opportunities.	Motivation/ appreciation	Motivation and appreciation for proactive behaviour and taking initiative.
2	Knowing why (distant understanding)	Understanding why initiative is important and its relevance in seizing opportunities.	Using, imitating	Using initiative to take basic action.	Perspective taking	Perspective taking to understand the impact of initiative on seizing opportunities.
1	Knowing what	Knowing what initiative is and its basic importance in personal and professional development.	Perceiving	Perceiving potential opportunities for action.	Self-orientation	Self-orientation towards recognizing the importance of initiative.

Sustainability and Environmental Responsibility

Competence Description

Sustainability and Environmental Responsibility is a critical organizational competence that involves integrating sustainable practices and principles into organizational operations. This competence ensures that an organization operates in an environmentally responsible manner, contributing to long-term ecological balance. Mastering sustainability and environmental responsibility enables individuals and organizations to reduce their environmental impact, enhance resource efficiency, and contribute positively to global sustainability efforts, thereby ensuring long-term viability and reputation.

Knowledge

- The learner knows: The fundamental principles of sustainability and environmental responsibility.
- The learner has the knowledge: Of various sustainable practices and how they can be integrated into organizational operations.
- The learner knows: The environmental regulations and standards relevant to their industry and region.
- The learner has the knowledge: Of the tools and frameworks for assessing and improving environmental performance, such as life cycle analysis and carbon footprint measurement.
- The learner knows: The importance of sustainability in achieving long-term organizational success and the benefits of adopting environmentally responsible practices.

Skills

- The learner is able to: Identify and implement sustainable practices within their organization.
- The learner is able to: Assess the environmental impact of organizational activities and develop strategies to mitigate negative effects.
- The learner is able to: Utilize tools and frameworks to measure and report on sustainability performance.
- The learner is able to: Develop and manage sustainability initiatives that align with organizational goals.
- The learner is able to: Communicate the importance and benefits of sustainability to stakeholders, fostering a culture of environmental responsibility.

Attitude

- The learner is motivated: To integrate sustainability into all aspects of their work and organizational processes.
- The learner is committed: To continually improving the organization's environmental performance and sustainability efforts.
- The learner likes to inspire: A culture of environmental responsibility within the organization, encouraging colleagues to adopt sustainable practices.
- The learner is proactive: In seeking out new sustainability opportunities and staying informed about environmental trends and innovations.
- The learner appreciates: The importance of sustainability in protecting the environment and ensuring long-term organizational success.

REFERENCE SYSTEM – Sustainability and Environmental Responsibility

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced sustainability strategies and how to apply them in diverse and complex organizational environments, and understanding how sustainability can drive organizational innovation and long-term ecological balance.	Developing, constructing, transferring	Integrating sustainability into strategic planning and leadership and developing new sustainable strategies while transferring knowledge to various organizational contexts.	Incorporation	Valuing sustainability as essential for effective leadership and organizational success and being committed to fostering a culture of sustainability within the organization and inspiring others to value environmental responsibility.
4	Knowing when (implicit understanding)	Understanding when to apply specific sustainable practices based on the organizational context and the subtle cues that indicate the need for environmental strategies.	Discovering acting independently	Actively seeking opportunities to apply sustainability principles independently and resolving environmental challenges with innovative solutions.	Commitment	Being committed to continuously improving sustainability skills and encouraging team members to practice sustainability, demonstrating a commitment to environmental integrity and responsibility.
3	Knowing how	Knowing how to implement sustainable practices within organizational operations and understanding the methods and tools for assessing and improving environmental performance.	Deciding/ selecting	Choosing and applying appropriate sustainable techniques in different scenarios and making informed decisions that align with organizational environmental goals.	Motivation/ appreciation	Appreciating the importance of sustainability in organizational success and being motivated to enhance personal sustainability knowledge and skills.
2	Knowing why (distant understanding)	Understanding why sustainability and environmental responsibility are crucial for organizational success and the impact of environmental factors on organizational performance and long-term viability.	Using, imitating	Communicating sustainability information effectively and reacting to environmental cues by following established practices and applying basic sustainable tools and techniques.	Perspective taking	Being curious about environmental trends and perspectives, willing to learn more about sustainability and environmental responsibility, and valuing diverse perspectives on sustainability.
1	Knowing what	Knowing the basic concepts of sustainability and environmental responsibility and recognizing the fundamental elements of sustainable practices and principles.	Perceiving	Recognizing environmental factors and their impact on organizational activities and engaging in basic sustainability practices and interactions.	Self-orientation	Understanding the benefits of sustainability in organizational success and being open to learning and practicing basic sustainable techniques, and showing a personal interest in mastering sustainability concepts

Learning2Learn - Learning through Experience

Learning through experience, or Learning2Learn, involves developing the ability to acquire knowledge and skills through practical engagement and reflection on experiences. It emphasizes continuous improvement and adaptability based on real-world interactions.

Knowledge

- The learner knows what experiential learning is and its significance in acquiring practical knowledge and skills.
- The learner has the knowledge of why experiential learning is essential for continuous improvement and adaptability.
- The learner knows how to effectively engage in experiential learning through practical activities and reflection.
- The learner knows when to apply experiential learning methods to optimize learning outcomes.

Skills

- The learner is able to perceive opportunities for experiential learning in everyday activities.
- The learner is able to use experiential methods effectively to gain practical knowledge and skills.
- The learner is able to decide on the best practices and approaches for learning from experiences.
- The learner is able to discover new ways to learn independently through reflection and hands-on activities.
- The learner is able to develop and transfer strategies for applying experiential learning across different contexts.

Attitude

- The learner is motivated to seek out and engage in experiential learning opportunities.
- The learner is committed to continuous self-improvement through reflecting on and learning from experiences.
- The learner appreciates the value of learning through experience and is motivated to apply it regularly.
- The learner likes to inspire others to recognize the importance of experiential learning.
- The learner incorporates experiential learning as a fundamental approach in both personal and professional development.

REFERENCE SYSTEM – Learning2Learn

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced experiential learning strategies and how to integrate insights from various experiences effectively.	Developing, constructing, transferring	Being able to develop and implement complex experiential learning strategies and monitor outcomes effectively.	Incorporation	Being highly motivated to engage in complex experiential learning and inspire others to learn through experience.
4	Knowing when (implicit understanding)	Knowing various experiential learning techniques and understanding the importance of reflective practice.	Discovering acting independently	Being able to generate and evaluate diverse experiential learning activities and analyse experiences thoroughly.	Commitment	Valuing systematic experiential learning and being committed to learning from reflection and practice.
3	Knowing how	Knowing basic tools and methods for engaging in and evaluating experiential learning activities.	Deciding/ selecting	Being able to identify learning opportunities clearly and apply basic experiential learning techniques.	Motivation/ appreciation	Being motivated to learn through experience and appreciate the role of reflection in learning.
2	Knowing why (distant understanding)	Knowing fundamental experiential learning strategies and the role of reflection.	Using, imitating	Being able to recognize and define basic experiential learning opportunities.	Perspective taking	Valuing the importance of experiential learning in achieving personal and professional growth.
1	Knowing what	Knowing the basic importance of experiential learning.	Perceiving	Being able to appreciate the importance of experiential learning.	Self-orientation	Being open to learning about experiential learning strategies.

Organisational Competences

In today's dynamic business environment, organisations need a solid competency framework to thrive and grow sustainably. Organisational competencies are critical skills and capabilities that ensure efficient operations, strategic growth and long-term sustainability.

These competencies encompass various aspects, from project management to strategic vision, and ensure that companies are able to navigate complex situations, seize opportunities and minimise risks. Below you will find a list of the essential organisational competencies with a brief explanation of the individual competencies that can be further developed within this framework.

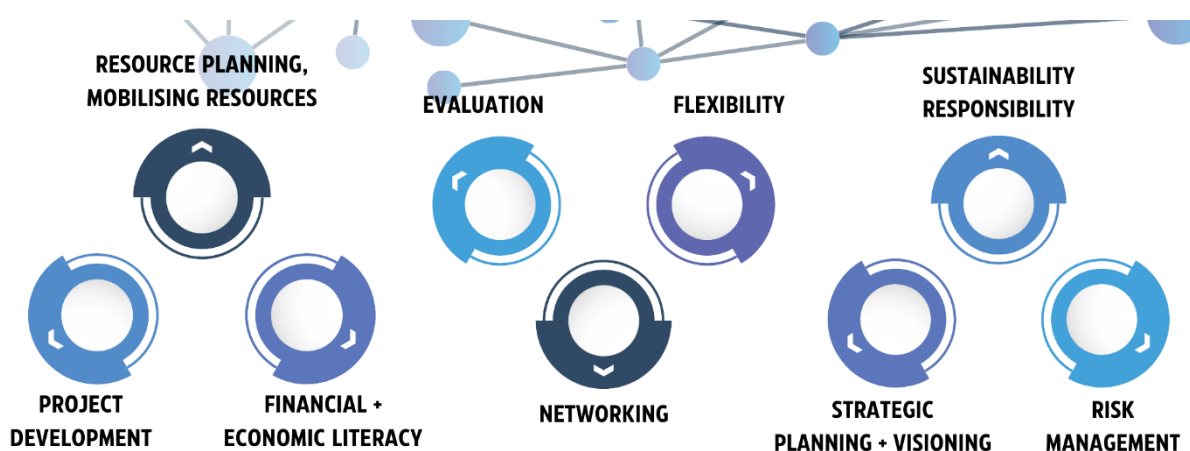


Figure 17: Organisational Competences

List of Organizational Competences

Project Development: The ability to initiate, plan, execute, and close projects effectively, ensuring they meet objectives and are delivered on time and within budget.

Resource Planning; Mobilising Resources:

Skills to identify, allocate, and manage resources efficiently to achieve project and organizational goals.

Financial and Economic Literacy:

Understanding financial principles and economic factors that influence the organization, enabling informed decision-making and financial planning.

Evaluation (Valuing Ideas): The competence to assess and value ideas, projects, and initiatives based on their potential impact and feasibility.

Networking: Building and maintaining professional relationships that can provide support, resources, and opportunities for the organization.

Flexibility (Coping with Ambiguity, Uncertainty, and Risk):

The ability to adapt to changing circumstances, manage uncertainty, and make decisions under conditions of risk.

Strategic Planning and Visioning:

Crafting and implementing long-term strategic plans that align with the organization's vision, ensuring sustainable growth and adaptability to future challenges.

Sustainability and Environmental Responsibility:

Integrating sustainable practices and principles into organizational operations, ensuring environmental responsibility and long-term ecological balance.

Risk Management:

Identifying, analysing, and mitigating risks to protect the organization from potential threats and ensure continuity and resilience.

Project Management

Competence Description

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 and 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

Attitude

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/her professional values

REFERENCE SYSTEM – Project Management

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/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.

Resource Planning and Mobilising Resources

Competence Description

Resource Planning and Mobilising Resources is an essential organizational competence that involves the strategic allocation and management of resources—such as human, financial, material, and informational assets—to achieve organizational goals efficiently and effectively. This competence ensures that resources are used optimally to support project completion, enhance productivity, and drive organizational success. Effective resource planning and mobilization are critical for maintaining operational efficiency, reducing waste, and ensuring that the right resources are available at the right time to meet the organization's needs.

Knowledge

- The learner knows: The fundamental principles and methodologies of resource planning and allocation.
- The learner has the knowledge: Of different types of resources (human, financial, material, informational) and their roles within the organization.
- The learner knows: How to assess resource requirements for various projects and organizational activities.
- The learner has the knowledge: Of best practices and tools for resource management, including budgeting, forecasting, and scheduling.
- The learner knows: The implications of resource allocation decisions on overall organizational performance and project outcomes.

Skills

- The learner is able to: Identify and assess resource needs for different projects and organizational activities.
- The learner is able to: Allocate and reallocate resources efficiently to meet changing project demands and organizational priorities.
- The learner is able to: Utilize resource management tools and software to track and optimize resource usage.
- The learner is able to: Develop and implement resource plans that align with organizational goals and objectives.
- The learner is able to: Coordinate and communicate resource requirements and adjustments with stakeholders and team members.

Attitude

- The learner is motivated: To ensure efficient and effective use of organizational resources.
- The learner is committed: To continuous improvement in resource planning and management practices.
- The learner likes to inspire: Others to value resource efficiency and contribute to optimal resource utilization.
- The learner is proactive: In identifying potential resource constraints and finding solutions to overcome them.
- The learner appreciates: The strategic importance of resource planning in achieving long-term organizational success.

REFERENCE SYSTEM – Planning and Resource Management

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/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.

Financial and Economic Literacy Competence

Competence Description

Financial and Economic Literacy is a critical organizational competence that involves understanding and applying financial principles and economic factors to influence organizational decision-making and strategic planning. This competence ensures that individuals can make informed financial decisions, develop effective financial plans, and comprehend the broader economic environment that impacts the organization. Mastery of this competence enhances an organization's ability to manage its financial resources effectively, optimize economic opportunities, and sustain long-term growth and stability.

Knowledge

- The learner knows: The fundamental concepts of finance, including budgeting, financial statements, and cash flow management.
- The learner has the knowledge: Of economic principles and how economic trends affect organizational performance.
- The learner knows: How to interpret financial statements and use them to assess the financial health of the organization.
- The learner has the knowledge: Of various financial instruments and their applications in organizational finance.
- The learner knows: The principles of risk management and how to mitigate financial risks.

Skills

- The learner is able to: Develop and manage budgets, ensuring alignment with organizational goals and objectives.
- The learner is able to: Analyze financial statements and reports to make informed decisions.
- The learner is able to: Apply economic analysis to evaluate market conditions and forecast financial performance.
- The learner is able to: Utilize financial tools and software for planning and decision-making.
- The learner is able to: Implement risk management strategies to protect the organization's financial interests.

Attitude

- The learner is motivated: To continuously improve their financial knowledge and stay updated with economic trends.
- The learner is committed: To maintaining financial integrity and transparency in all financial dealings.
- The learner likes to inspire: Confidence in financial planning and decision-making among team members and stakeholders.
- The learner is proactive: In identifying financial opportunities and mitigating potential economic threats.
- The learner appreciates: The strategic importance of financial literacy in achieving long-term organizational success.

REFERENCE SYSTEM – Financial and Economic Literacy

L	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced financial and economic strategies and how to apply them in diverse and complex organizational environments. Understanding how financial literacy can drive strategic decision-making and long-term growth.	Developing, constructing, transferring	Integrating financial literacy into strategic planning and leadership. Developing new financial strategies and transferring knowledge to various organizational contexts.	Incorporation	Valuing financial literacy as essential for effective leadership and organizational success. Being committed to fostering a culture of financial literacy within the organization and inspiring others to value financial management.
4	Knowing when (implicit understanding)	Knowing when to apply specific financial and economic strategies based on the organizational context. Understanding the subtle cues that indicate the need for particular financial decisions.	Discovering acting independently	Actively seeking opportunities to apply financial and economic principles independently. Resolving financial challenges with innovative solutions.	Commitment	Committed to continuously improving financial skills and encouraging team members to practice financial literacy. Demonstrating a commitment to financial integrity and transparency.
3	Knowing how	Knowing how to apply financial and economic principles to real-world scenarios. Understanding how to analyse financial statements, create budgets, and make informed financial decisions.	Deciding/ selecting	Being able to choose and apply appropriate financial and economic techniques in different scenarios. Making informed financial decisions that align with organizational goals.	Motivation/ appreciation	Appreciating the importance of financial literacy in organizational success. Being motivated to enhance personal financial knowledge and skills.
2	Knowing why (distant understanding)	Knowing why financial literacy is crucial for organizational success. Understanding the impact of economic trends and financial decisions on organizational performance.	Using, imitating	Communicating financial information effectively and reacting to economic cues by following established practices. Applying basic financial tools and techniques.	Perspective taking	Being curious about economic trends and perspectives, and willing to learn more about financial management and economic analysis.
1	Knowing what	Knowing the basic concepts of finance and economics, such as budgeting, financial statements, and market dynamics. Recognizing the fundamental elements of financial management and economic principles	Perceiving	Recognizing financial and economic concepts and how they relate to organizational activities. Engaging in basic financial interactions and practices.	Self-orientation	Understanding the benefits of financial literacy and being open to learning and practicing basic financial techniques. Showing a personal interest in mastering financial concepts.

Evaluating/Reflecting

Competence Description

Evaluation (Valuing Ideas) is a vital organizational competence that involves the ability to assess and value ideas, projects, and initiatives based on their potential impact and feasibility. This competence ensures that individuals can critically analyse various options, consider multiple perspectives, and make informed decisions that align with organizational goals and values. Mastering this competence helps organizations identify the most promising opportunities, allocate resources effectively, and drive innovation and growth.

Knowledge

- The learner knows: The fundamental principles of evaluation and the criteria for assessing the value of ideas and projects.
- The learner has the knowledge: Of different evaluation methodologies and tools, such as cost-benefit analysis, SWOT analysis, and feasibility studies.
- The learner knows: How to gather and interpret relevant data to inform evaluation processes.
- The learner has the knowledge: Of the factors that influence the potential impact and feasibility of ideas, including market conditions, organizational capabilities, and stakeholder interests.
- The learner knows: The importance of aligning evaluations with organizational goals and strategic priorities.

Skills

- The learner is able to: Apply various evaluation methodologies to assess the value of ideas and projects.
- The learner is able to: Collect and analyze data to inform evaluations and make evidence-based decisions.
- The learner is able to: Identify and weigh the potential benefits and risks associated with different ideas and initiatives.
- The learner is able to: Communicate evaluation findings effectively to stakeholders, providing clear and actionable recommendations.
- The learner is able to: Develop and refine evaluation frameworks to improve the accuracy and relevance of assessments.

Attitude

- The learner is motivated: To seek out and evaluate new ideas and opportunities for organizational improvement and innovation.
- The learner is committed: To maintaining objectivity and rigor in the evaluation process, ensuring that decisions are based on sound analysis and evidence.
- The learner likes to inspire: A culture of continuous improvement and critical thinking within the organization, encouraging team members to value and engage in evaluation activities.
- The learner is proactive: In identifying potential areas for evaluation and initiating assessments to support strategic decision-making.
- The learner appreciates: The importance of evaluation in achieving long-term organizational success and is dedicated to enhancing their own evaluation skills and knowledge.

REFERENCE SYSTEM – Evaluating/Reflecting

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/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.

Networking

Competence Description

Networking is an essential organizational competence that involves building and maintaining professional relationships to provide support, resources, and opportunities for the organization. Effective networking enhances collaboration, fosters knowledge exchange, and opens doors to new opportunities and partnerships. Mastering this competence helps individuals and organizations create a robust support system, leverage collective expertise, and achieve strategic goals through a well-connected network of professional contacts.

Knowledge

- The learner knows: The fundamental principles of networking and the importance of building professional relationships.
- The learner has the knowledge: Of various networking strategies and techniques, including in-person and online networking.
- The learner knows: How to identify and approach potential networking contacts and opportunities.
- The learner has the knowledge: Of the tools and platforms that facilitate effective networking, such as LinkedIn and professional associations.
- The learner knows: The role of networking in achieving organizational goals, securing resources, and accessing new opportunities.

Skills

- The learner is able to: Initiate and maintain professional relationships through effective communication and engagement.
- The learner is able to: Utilize networking tools and platforms to expand their professional network.
- The learner is able to: Identify and pursue networking opportunities that align with organizational goals and personal career development.
- The learner is able to: Leverage their network to gain insights, support, and resources for organizational projects and initiatives.
- The learner is able to: Facilitate connections between network contacts and foster a collaborative environment.

Attitude

- The learner is motivated: To actively seek out and engage with new networking opportunities.
- The learner is committed: To maintaining and nurturing professional relationships over the long term.
- The learner likes to inspire: A culture of networking within the organization, encouraging colleagues to build and utilize their professional networks.
- The learner is proactive: In offering support and resources to their network contacts, building a reputation as a valuable connection.
- The learner appreciates: The mutual benefits of networking and is dedicated to contributing positively to their professional community.

REFERENCE SYSTEM – Networking

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	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.

Flexibility (Coping with Ambiguity, Uncertainty, and Risk)

Flexibility, defined as the ability to cope with ambiguity, uncertainty, and risk, is an essential organizational competence. This competence involves adapting to changing circumstances, managing uncertainty, and making informed decisions under conditions of risk. Mastering flexibility helps individuals and organizations navigate complex and unpredictable environments, seize emerging opportunities, and maintain resilience in the face of challenges.

Knowledge

- The learner knows: The fundamental principles of risk management and decision-making under uncertainty.
- The learner has the knowledge: Of strategies and techniques for coping with ambiguity and adapting to change.
- The learner knows: The impact of uncertainty and risk on organizational performance and decision-making processes.
- The learner has the knowledge: Of tools and frameworks for assessing and mitigating risks.
- The learner knows: The importance of flexibility in achieving long-term organizational resilience and success.

Skills

- The learner is able to: Assess and analyze risks to make informed decisions in uncertain environments.
- The learner is able to: Adapt plans and strategies in response to changing circumstances and new information.
- The learner is able to: Implement effective risk management practices to minimize negative impacts on the organization.
- The learner is able to: Communicate effectively during times of uncertainty, providing clear guidance and support to team members.
- The learner is able to: Demonstrate resilience and maintain productivity in the face of ambiguity and unexpected challenges.

Attitude

- The learner is motivated: To embrace change and view uncertainty as an opportunity for growth and innovation.
- The learner is committed: To maintaining a positive and proactive approach in uncertain situations.
- The learner likes to inspire: Confidence and adaptability within the team, encouraging colleagues to stay resilient and resourceful.
- The learner is proactive: In seeking out information and resources to better understand and manage risks.
- The learner appreciates: The value of flexibility in navigating complex environments and is dedicated to developing this competence further.

REFERENCE SYSTEM – Flexibility/Adaptability

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	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, Attitude 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.

Strategic Planning and Visioning

Competence Description

Strategic Planning and Visioning is a critical organizational competence that involves crafting and implementing long-term strategic plans aligned with the organization's vision. This competence ensures sustainable growth and adaptability to future challenges. Mastering strategic planning and visioning enables individuals and organizations to set clear goals, anticipate future trends, and navigate the complexities of the business environment, thereby ensuring long-term success and resilience.

Knowledge

- The learner knows: The fundamental principles of strategic planning and the key components of a strategic plan.
- The learner has the knowledge: Of various strategic planning frameworks and methodologies, such as SWOT analysis, PEST analysis, and scenario planning.
- The learner knows: How to align strategic plans with the organization's vision, mission, and values.
- The learner has the knowledge: Of the factors that influence strategic planning, including market trends, competitive landscape, and internal capabilities.
- The learner knows: The importance of regular review and adaptation of strategic plans to ensure ongoing relevance and effectiveness.

Skills

- The learner is able to: Develop comprehensive strategic plans that align with the organization's vision and long-term goals.
- The learner is able to: Use strategic planning tools and frameworks to analyze internal and external environments.
- The learner is able to: Implement strategic plans effectively, ensuring alignment across all levels of the organization.
- The learner is able to: Monitor and evaluate the progress of strategic initiatives, making adjustments as needed.
- The learner is able to: Communicate the strategic vision and plan effectively to stakeholders, fostering a shared understanding and commitment.

Attitude

- The learner is motivated: To think long-term and consider the broader impact of strategic decisions.
- The learner is committed: To aligning personal and team efforts with the organization's strategic goals and vision.
- The learner likes to inspire: A shared vision and strategic thinking within the organization, encouraging others to contribute to the strategic planning process.
- The learner is proactive: In seeking out new opportunities and anticipating future challenges to inform strategic planning.
- The learner appreciates: The value of strategic planning in achieving sustainable growth and is dedicated to continually enhancing their strategic planning skills.

REFERENCE SYSTEM – Strategic Planning and Visioning

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced strategic planning strategies and how to apply them in diverse and complex organizational environments, and understanding how strategic planning can drive long-term growth and adaptability.	Developing, constructing, transferring	Integrating strategic planning into leadership and management processes and developing new strategic planning strategies while transferring knowledge to various organizational contexts.	Incorporation	Valuing strategic planning and visioning as essential for effective leadership and organizational success and being committed to fostering a culture of strategic thinking within the organization and inspiring others to value strategic planning.
4	Knowing when (implicit understanding)	Understanding when to apply specific strategic planning techniques based on the organizational context, and recognizing the cues that indicate the need for strategic adjustments.	Discovering acting independently	Actively seeking opportunities to apply strategic planning principles independently and resolving strategic challenges with innovative solutions.	Commitment	Being committed to continuously improving strategic planning skills and encouraging team members to practice strategic thinking, demonstrating a commitment to long-term organizational success.
3	Knowing how	Knowing how to craft and implement strategic plans that align with the organization's vision and understanding the methods and tools for effective strategic planning.	Deciding/ selecting	Choosing and applying appropriate strategic planning techniques in different scenarios and making informed strategic decisions that align with organizational goals.	Motivation/ appreciation	Appreciating the importance of strategic planning in organizational success and being motivated to enhance personal strategic planning knowledge and skills.
2	Knowing why (distant understanding)	Understanding why strategic planning and visioning are crucial for organizational success, and the impact of long-term strategies on organizational performance and adaptability.	Using, imitating	Communicating strategic plans effectively and reacting to organizational cues by following established strategic planning practices and applying basic strategic planning tools and techniques.	Perspective taking	Being curious about strategic trends and perspectives, willing to learn more about strategic planning and visioning, and valuing diverse perspectives on strategic development.
1	Knowing what	Knowing the basic principles of strategic planning and visioning and recognizing the fundamental elements of developing long-term strategic plans.	Perceiving	Recognizing factors that influence strategic planning and visioning and engaging in basic strategic planning practices and interactions.	Self-orientation	Understanding the benefits of strategic planning and visioning for organizational success, being open to learning and practicing basic strategic planning techniques and showing a personal interest in mastering strategic planning concepts.

Sustainability and Environmental Responsibility

Competence Description

Sustainability and Environmental Responsibility is a critical organizational competence that involves integrating sustainable practices and principles into organizational operations. This competence ensures that an organization operates in an environmentally responsible manner, contributing to long-term ecological balance. Mastering sustainability and environmental responsibility enables individuals and organizations to reduce their environmental impact, enhance resource efficiency, and contribute positively to global sustainability efforts, thereby ensuring long-term viability and reputation.

Knowledge

- The learner knows: The fundamental principles of sustainability and environmental responsibility.
- The learner has the knowledge: Of various sustainable practices and how they can be integrated into organizational operations.
- The learner knows: The environmental regulations and standards relevant to their industry and region.
- The learner has the knowledge: Of the tools and frameworks for assessing and improving environmental performance, such as life cycle analysis and carbon footprint measurement.
- The learner knows: The importance of sustainability in achieving long-term organizational success and the benefits of adopting environmentally responsible practices.

Skills

- The learner is able to: Identify and implement sustainable practices within their organization.
- The learner is able to: Assess the environmental impact of organizational activities and develop strategies to mitigate negative effects.
- The learner is able to: Utilize tools and frameworks to measure and report on sustainability performance.
- The learner is able to: Develop and manage sustainability initiatives that align with organizational goals.
- The learner is able to: Communicate the importance and benefits of sustainability to stakeholders, fostering a culture of environmental responsibility.

Attitude

- The learner is motivated: To integrate sustainability into all aspects of their work and organizational processes.
- The learner is committed: To continually improving the organization's environmental performance and sustainability efforts.
- The learner likes to inspire: A culture of environmental responsibility within the organization, encouraging colleagues to adopt sustainable practices.
- The learner is proactive: In seeking out new sustainability opportunities and staying informed about environmental trends and innovations.
- The learner appreciates: The importance of sustainability in protecting the environment and ensuring long-term organizational success.

REFERENCE SYSTEM – Sustainability and Environmental Responsibility

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced sustainability strategies and how to apply them in diverse and complex organizational environments, and understanding how sustainability can drive organizational innovation and long-term ecological balance.	Developing, constructing, transferring	Integrating sustainability into strategic planning and leadership and developing new sustainable strategies while transferring knowledge to various organizational contexts.	Incorporation	Valuing sustainability as essential for effective leadership and organizational success and being committed to fostering a culture of sustainability within the organization and inspiring others to value environmental responsibility.
4	Knowing when (implicit understanding)	Understanding when to apply specific sustainable practices based on the organizational context and the subtle cues that indicate the need for environmental strategies.	Discovering acting independently	Actively seeking opportunities to apply sustainability principles independently and resolving environmental challenges with innovative solutions.	Commitment	Being committed to continuously improving sustainability skills and encouraging team members to practice sustainability, demonstrating a commitment to environmental integrity and responsibility.
3	Knowing how	Knowing how to implement sustainable practices within organizational operations and understanding the methods and tools for assessing and improving environmental performance.	Deciding/ selecting	Choosing and applying appropriate sustainable techniques in different scenarios and making informed decisions that align with organizational environmental goals.	Motivation/ appreciation	Appreciating the importance of sustainability in organizational success and being motivated to enhance personal sustainability knowledge and skills.
2	Knowing why (distant understanding)	Understanding why sustainability and environmental responsibility are crucial for organizational success and the impact of environmental factors on organizational performance and long-term viability.	Using, imitating	Communicating sustainability information effectively and reacting to environmental cues by following established practices and applying basic sustainable tools and techniques.	Perspective taking	Being curious about environmental trends and perspectives, willing to learn more about sustainability and environmental responsibility, and valuing diverse perspectives on sustainability.
1	Knowing what	Knowing the basic concepts of sustainability and environmental responsibility and recognizing the fundamental elements of sustainable practices and principles.	Perceiving	Recognizing environmental factors and their impact on organizational activities and engaging in basic sustainability practices and interactions.	Self-orientation	Understanding the benefits of sustainability in organizational success and being open to learning and practicing basic sustainable techniques, and showing a personal interest in mastering sustainability concepts

Risk Management

Competence Description

Risk management involves identifying, analysing, and mitigating risks to protect the organization from potential threats. Effective risk management ensures organizational continuity, resilience, and the ability to navigate uncertainties and challenges. This competence encompasses understanding risk management principles, developing strategies to address risks, and fostering a culture of risk awareness and proactive mitigation within the organization.

Knowledge

The learner: ...

- Knows the basic principles of risk management and the fundamental elements of identifying, analysing, and mitigating risks.
- Knows why risk management is crucial for organizational success and understands the impact of potential threats on performance and resilience.
- Knows how to implement risk management strategies to protect the organization and ensure continuity and resilience.
- Knows when to apply specific risk management techniques based on organizational context and recognizes the cues indicating the need for risk mitigation.
- Knows advanced risk management strategies and how to apply them in diverse and complex environments, understanding how risk management drives resilience and continuity.

Skills

The learner: ...

- Is able to recognize potential risks and their impact on organizational activities, engaging in basic risk identification and mitigation practices.
- Is able to communicate risk management information effectively and react to potential threats by following established practices and applying basic mitigation tools and techniques.
- Is able to choose and apply appropriate risk management techniques in various scenarios, making informed decisions that align with organizational goals.
- Is able to actively seek opportunities to apply risk management principles independently, resolving risk-related challenges with innovative solutions.

- Is able to integrate risk management into strategic planning and leadership, developing new strategies and transferring knowledge to various organizational contexts.

Attitude

The learner: ...

- Is motivated to understand the benefits of risk management for organizational success and is open to learning and practicing basic risk management techniques, showing a personal interest in mastering the concepts.
- Is curious about potential threats and risk management perspectives, willing to learn more about risk mitigation, and values diverse perspectives on risk management.
- Appreciates the importance of risk management in organizational success and is motivated to enhance personal risk management knowledge and skills.
- Is committed to continuously improving risk management skills and encouraging team members to practice risk mitigation, demonstrating a commitment to organizational resilience and continuity.
- Incorporates risk management as essential for effective leadership and organizational success, fostering a culture of risk awareness within the organization and inspiring others to value risk management.

REFERENCE SYSTEM – Risk Management

	KNOWLEDGE		SKILLS//CAPABILITIES		ATTITUDE/VALUES	
L	Level Titles	Level description	Level Titles	Level description	Level Titles	Level description
5	Knowing where else (strategic transfer)	Knowing advanced risk management strategies and how to apply them in diverse and complex organizational environments and understanding how risk management can drive organizational resilience and continuity.	Developing, constructing, transferring	Integrating risk management into strategic planning and leadership and developing new risk management strategies while transferring knowledge to various organizational contexts.	Incorporation	Valuing risk management as essential for effective leadership and organizational success and being committed to fostering a culture of risk awareness within the organization and inspiring others to value risk management.
4	Knowing when (implicit understanding)	Understanding when to apply specific risk management techniques based on the organizational context and recognizing the cues that indicate the need for risk mitigation.	Discovering acting independently	Actively seeking opportunities to apply risk management principles independently and resolving risk-related challenges with innovative solutions.	Commitment	Being committed to continuously improving risk management skills and encouraging team members to practice risk mitigation, demonstrating a commitment to organizational resilience and continuity.
3	Knowing how	Knowing how to implement risk management strategies that protect the organization from potential threats and ensure continuity and resilience.	Deciding/ selecting	Choosing and applying appropriate risk management techniques in different scenarios and making informed risk mitigation decisions that align with organizational goals.	Motivation/ appreciation	Appreciating the importance of risk management in organizational success and being motivated to enhance personal risk management knowledge and skills.
2	Knowing why (distant understanding)	Understanding why risk management is crucial for organizational success and the impact of potential threats on organizational performance and resilience.	Using, imitating	Communicating risk management information effectively and reacting to potential threats by following established risk management practices and applying basic risk mitigation tools and techniques.	Perspective taking	Being curious about potential threats and risk management perspectives, willing to learn more about risk mitigation, and valuing diverse perspectives on risk management.
1	Knowing what	Knowing the basic principles of risk management and recognizing the fundamental elements of identifying, analysing, and mitigating risks.	Perceiving	Recognizing potential risks and their impact on organizational activities and engaging in basic risk identification and mitigation practices.	Self-orientation	Understanding the benefits of risk management for organizational success and being open to learning and practicing basic risk management techniques and showing a personal interest in mastering risk management concepts.

Chapter 4: Conclusion

The SMERALD project is an important step in addressing the critical need for digital transformation in small and medium-sized enterprises (SMEs). By providing a comprehensive competence framework that integrates the LEVEL5 and EntreComp frameworks, SMERALD equips SMEs with the skills they need to succeed in a digital economy. This conclusion summarises the theoretical foundations and practical applications discussed in the previous chapters and highlights the overarching benefits of the project and its impact on trainers, teachers and SMEs.

Theoretical Integration and Practical Application

The theoretical integration of the LEVEL5 and EntreComp frameworks underpins the robustness of the SMERALD competence framework. LEVEL5's systematic approach to competence assessment and development ensures that the framework is based on real business needs, while EntreComp's focus is on fostering entrepreneurial mindsets and skills, facilitating innovation and adaptability. This dual approach ensures a comprehensive understanding and application of digital data, data analytics and AI skills, which are critical for SMEs operating in a dynamic market environment.

By aligning these frameworks, SMERALD provides a structured methodology for developing skills in four key areas: technical, soft, personal and organisational skills. This holistic approach ensures that SMEs are equipped not only with the necessary technical know-how, but also with the social and personal skills required for effective teamwork, communication and resilience. The emphasis on organisational skills also enables SMEs to optimise their processes and promote long-term growth and innovation.

Benefits for trainers, teachers and facilitators

The SMERALD project offers significant benefits to trainers, teachers and facilitators by providing them with the tools and strategies they need to design, deliver and evaluate effective training programmes. Chapter 2 describes how trainers can use the SMERALD competency framework to create engaging and adaptable learning environments. The integration of design thinking principles encourages creativity and innovation and ensures that learning activities are tailored to the specific needs of learners.

By using different pedagogical methods and ICT-supported learning environments, trainers can promote the engagement of learners and the development of their competences. The use of digital tools, such as the SMERALD Hub, enables dynamic interaction and collaboration and simulates real business scenarios. This practical application of digital skills ensures that learners are well prepared to navigate the complex world of the digital society.

Assessment and Quality Assurance

Assessment is a critical component of the SMERALD framework, providing continuous feedback and validation of skills acquisition. The project's focus on formative and summative assessment ensures that learners' progress is systematically tracked and evaluated. Digital tools facilitate the documentation and visualisation of competences and provide a comprehensive overview of learners' development over time.

Quality assurance in assessment is carefully managed to ensure that methods are fair, reliable and valid. By adhering to high standards of validity, objectivity, reliability and consistency, the SMERALD framework ensures that assessments accurately reflect learners' abilities and support their continuous improvement. This rigorous approach to assessment enhances the credibility of training programmes and underlines the importance of lifelong learning and adaptability.

Impact on SMEs and wider implications

The implementation of the SMERALD competence framework has a profound impact on SMEs. By fostering a culture of continuous improvement and innovation, SMEs can increase their competitive advantage in the digital economy. Developing skills in digital data, data analytics and artificial intelligence will enable SMEs to make data-driven decisions, optimise operations and explore new business opportunities. In addition, promoting social, personal and organisational skills will ensure that SMEs are resilient and adaptable to changing market conditions.

The far-reaching impact of the SMERALD project has the potential to extend beyond individual businesses into other sectors and, under optimal conditions, even the wider economic landscape. By equipping SMEs with basic digital skills, the project contributes to economic growth, job creation and social progress. By emphasising entrepreneurial skills, innovation

and social contribution will be further encouraged, leading to a more dynamic and inclusive economy.

Future directions and recommendations

While the SMERALD project provides a solid framework for digital literacy development, continuous evaluation and adaptation is essential to address new challenges and opportunities. Future studies and projects should focus on refining the framework based on feedback from trainers, teachers and SMEs to ensure its relevance and effectiveness in different contexts. In addition, extending the framework to include new technologies and trends will further enhance its applicability and impact.

Conclusion

In conclusion, the SMERALD project offers a comprehensive and practical solution to the challenges of digital literacy for SMEs. By integrating the LEVEL5 and EntreComp frameworks, the project provides a robust methodology for developing essential digital, social, personal and organisational skills. The benefits for trainers, teachers and SMEs are significant, fostering a culture of continuous improvement, innovation and sustainable growth. For SMEs struggling to navigate the complex digital economy, the SMERALD framework is an important resource to promote resilience, adaptability and long-term success.

