SMERALD

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

Manual

for

VET Professionals

Prepared by

blinc eG

Manual for VET Professionals:

Using the SMERALD Platform and Learning Path in a Blended Learning Environment

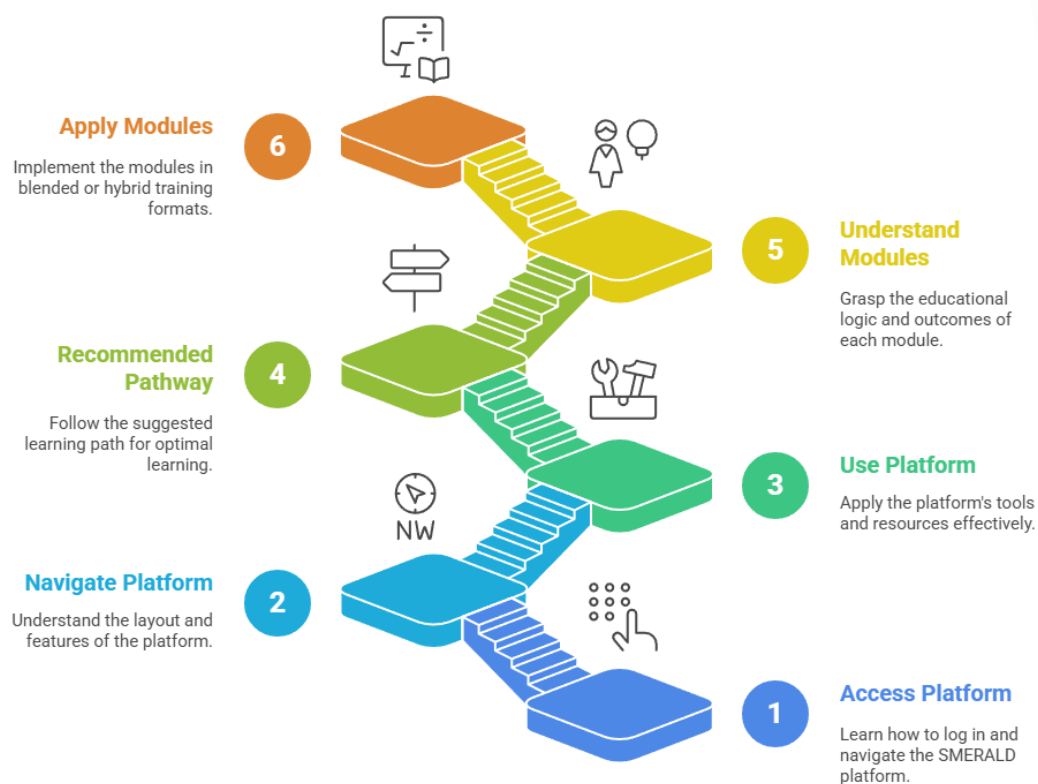Developed under the SMERALD Project (Erasmus+ 2023–2025)

Table of Contents

Introduction & Purpose

The **SMERALD Learning Platform** supports small and medium-sized enterprises (SMEs) and vocational education and training (VET) professionals in developing digital competences in Artificial Intelligence (AI) and Data Analysis. This manual explains **why** and **how** to use the platform effectively in a blended setting. Its main purpose is to translate the SMERALD approach into practical action: helping you orient yourself on the platform, build a coherent learning path, and connect online study with live facilitation and competence validation. It is written for VET trainers, teachers, and facilitators who need more than technical instructions—they need a **pedagogical roadmap** that links modules to concrete teaching challenges and to measurable learner growth.

Concretely, the manual shows you how to: (1) begin with reflective entry activities (e.g., the SPIDER Questionnaire) to identify personal starting points; (2) navigate and sequence the modules (AI for SMEs → Data Analysis → Design Thinking → SMERALD Competence Framework/LEVEL5 → COL&V) so that awareness becomes applied competence; and (3) embed reflection and validation throughout, using LEVEL5 to document progress. It complements the SMERALD CPD Blueprint by turning the concept into step-by-step guidance and by explaining the didactic intent behind each module, so you can extract and adapt exactly the elements you need for your learners.

The manual is divided into two main parts:

1. **Part I – Step-by-Step Guide:** Practical instructions on how to access, navigate, and use the SMERALD Learning Platform, including a recommended learning pathway.

2. **Part II – Didactic Approach to the Modules:** Explanation of the pedagogical logic, learning outcomes, and practical application of each module within blended or hybrid training formats.

Apply Modules

6

Implement the modules in blended or hybrid training formats.

Understand Modules

5

Grasp the educational logic and outcomes of each module.

Recommended Pathway

4

Follow the suggested learning path for optimal learning.

Use Platform

3

Apply the platform's tools and resources effectively.

Navigate Platform

2

Understand the layout and features of the platform.

Access Platform

1

Learn how to log in and navigate the SMERALD platform.

Part I – Navigating the Platform: A Step-by-Step Guide
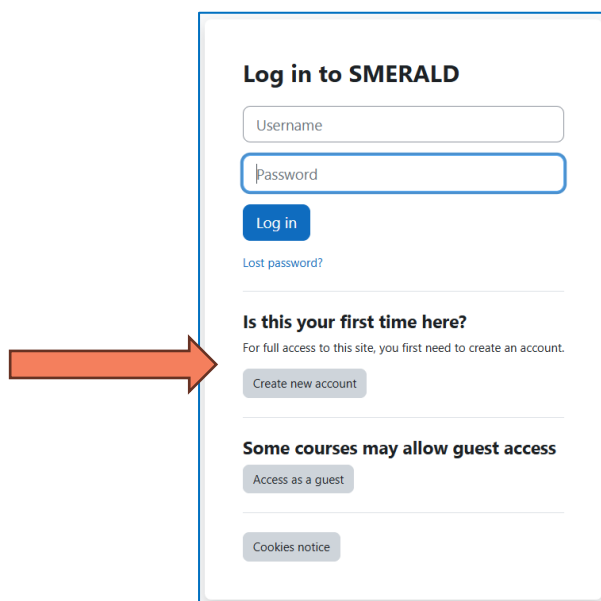
1. Getting Started on the SMERALD Learning Suite

To begin, you will first need to create an account and log in to the **SMERALD Moodle environment**. Follow these steps for registration and initial access:

1. Click on the **Log in** button in the top right corner of the homepage.
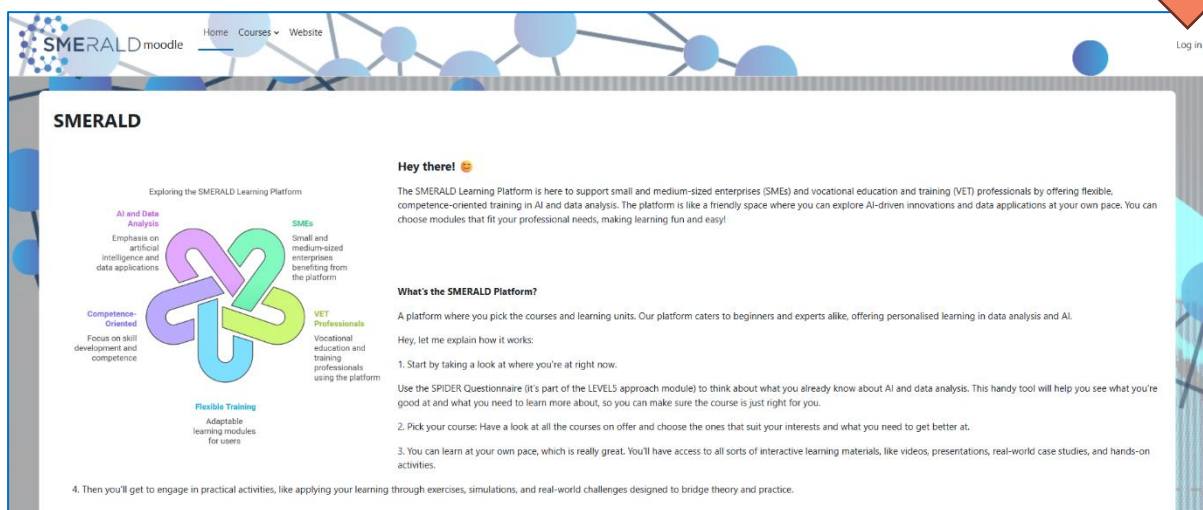
2. Choose **"Is this your first time here?"** to start the registration process.

3. Fill in the registration form with your details.

4. You will receive an automatic confirmation email from **noreply@smerald.blinc-eu.org**.

5. Open that email and confirm your email address by clicking the provided link.

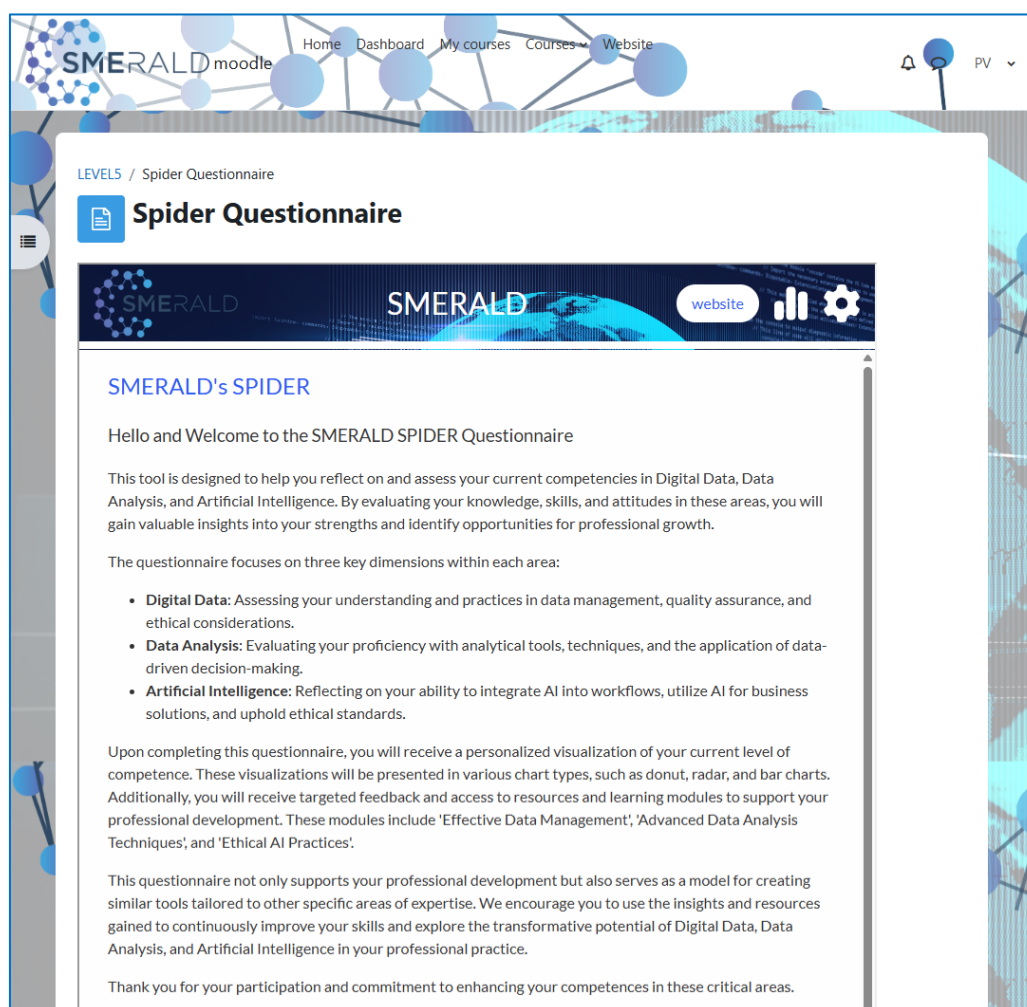6. Once your account is verified, you can log in and start exploring the platform.

After logging in, you will find the homepage structured around a clean, intuitive interface. From there, you can freely explore and choose among multiple modules, each designed to enhance different aspects of AI and data competence. This initial step ensures that you have access to all available resources and learning materials.

Recommended First Step: The SPIDER Questionnaire

Before diving into the learning content, we recommend starting with the **SPIDER Questionnaire**. This first step is more than a simple survey—it is a structured self-reflection instrument that helps you establish your baseline competences and learning motivation. The questionnaire is designed to make you pause and consider your confidence in specific areas such as AI awareness, data handling, digital problem-solving, and innovation thinking. By visualising your own competence profile, you gain a clearer picture of your strengths and the areas where you might need support.

This step makes sense because the SMERALD learning journey is competence-oriented: it starts with awareness and reflection before introducing new knowledge. Beginning with the SPIDER Questionnaire helps you to personalise your learning path instead of following a generic sequence. Based on your results, you can identify which modules best fit your professional needs—whether you want to build basic understanding of AI, strengthen analytical skills, or learn how to apply Design Thinking in a training context. This reflective entry point also ensures that subsequent validation through the LEVEL5 method later in the course feels meaningful and connected to your initial self-assessment.

2. The SMERALD Learning Path – Recommended Flow

While you can select any module independently, following a guided sequence can help you gradually build competence and confidence in a meaningful and interconnected way. Each module builds upon the knowledge, reflection, and skills acquired in the previous one, forming a progressive pathway that mirrors how competences develop in practice. This approach encourages a balance between structured learning and personal choice: you remain free to explore, but the recommended order ensures that foundational awareness comes before complex application, and reflection accompanies every phase.

SMERALD Learning Path

COL&V
Learn how to apply competence-based learning in your professional context.

SPIDER Questionnaire
Reflect on your current competence profile.

SMERALD Framework
Explore how learning outcomes are validated.

AI for SMEs
Understand the basics and potential of Artificial Intelligence.

Design Thinking
Apply creativity and user-centred innovation methods.

Data Analysis
Learn how to use and interpret data effectively.

SMERALD Learning Path

Made with Napkin

The reasoning behind this stepwise approach lies in the SMERALD Competence Framework. Starting with awareness (SPIDER) allows you to assess where you currently stand. The following AI and Data Analysis modules provide essential knowledge and skill-building activities that strengthen your analytical and digital literacy. Design Thinking then enables you

to apply this knowledge creatively in realistic scenarios. Finally, the modules on competence validation and COL&V tie the learning process together by helping you recognise, document, and further develop your achievements. Together, these steps form a coherent competence-building journey that supports both professional and pedagogical growth.

The recommended flow is as follows:

1. **SPIDER Questionnaire** – Reflect on your current competence profile.

2. **AI for SMEs** – Understand the basics and potential of Artificial Intelligence.

3. **Data Analysis** – Learn how to use and interpret data effectively.

4. **Design Thinking** – Apply creativity and user-centred innovation methods.

5. **SMERALD Competence Framework & LEVEL5** – Explore how learning outcomes are validated.

6. **Competence-Oriented Learning & Validation (COL&V)** – Learn how to apply competence-based learning in your own professional context.
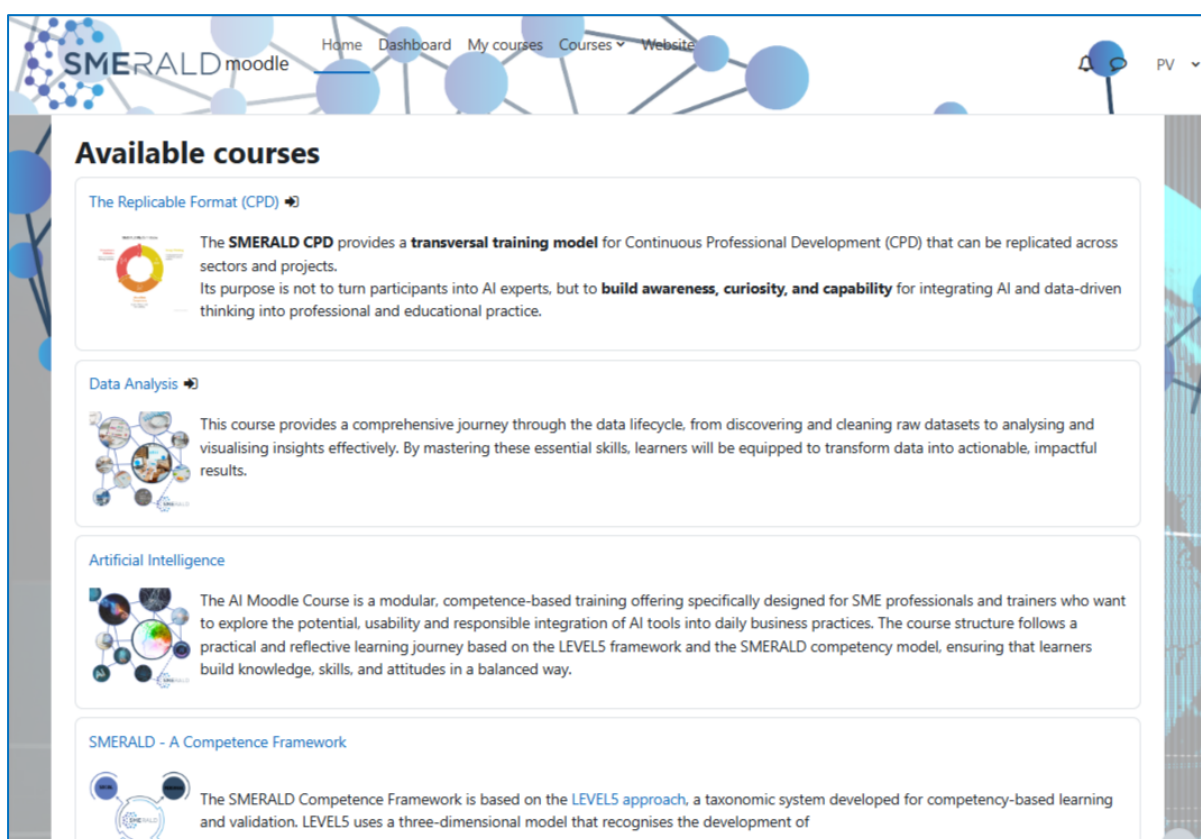
3. Platform Navigation Tips

The platform design supports self-directed exploration and structured learning simultaneously, offering a balance between autonomy and guided progress. Each feature on the platform is intentionally designed to help you engage at your own pace while following a logical pedagogical sequence. The dashboard functions as your personal learning hub, where you can track completed activities, access upcoming tasks, and revisit earlier materials to reinforce understanding. The structured layout of modules ensures that you always have a clear sense of where you are within your learning journey.

Self-directed exploration empowers you to follow individual interests, experiment with new tools, and dive deeper into specific topics such as AI or data analysis. At the same time, the structured learning pathways provide recommended routes that keep your development coherent and aligned with the SMERALD Competence Framework. This dual approach makes the platform flexible enough for independent learners yet systematic enough for trainers to integrate it into workshops, mentoring programmes, or classroom teaching. By combining

freedom of exploration with a clear pedagogical framework, the SMERALD platform encourages both curiosity-driven discovery and steady competence progression.

- Use the **Main Page (Home)** to access active courses.

- Each course includes a **brief introduction**, **module materials**, and **interactive H5P activities**.

- You can mark your progress, download handouts, and return to any previous section.

4. Blended Learning Integration

The SMERALD Platform is ideal for **blended learning formats** that mix online self-study with face-to-face or virtual workshops, because this approach mirrors how learning and competence development occur in real professional environments. Blended learning offers flexibility while preserving human interaction and reflection, two elements that are critical for meaningful competence growth. The combination of online and in-person learning allows participants to first acquire knowledge independently, then apply and discuss it collaboratively in workshops or meetings. This structure maximises engagement and retention by giving learners time to process information, test ideas, and connect theory to practical tasks.

The online self-study component of the platform serves as the foundation for content delivery and reflection. It allows participants to explore materials, complete exercises, and revisit complex topics at their own pace. Trainers can then use the in-person or virtual workshop sessions to deepen understanding through group discussions, case studies, and design challenges that encourage critical and creative thinking. Finally, post-workshop reflection and validation on the platform close the loop: participants consolidate their learning, document their competence development using the LEVEL5 tools, and set goals for further improvement.

This integrated cycle—**learn, apply, reflect, validate**—is what makes blended learning on the SMERALD Platform so effective. Each phase reinforces the others, ensuring that learning outcomes move beyond theoretical understanding to real-world application and validated competence development. Trainers can use the modules as pre-learning preparation, guided classroom material, or post-workshop reflection and assessment support, depending on their educational context and the needs of their participants.

Example integration:

- **Online:** Learners complete the SPIDER Questionnaire and AI module.

- **Workshop:** Participants work in groups on design challenges using insights from the modules.

- **Post-session:** Learners validate their competences through LEVEL5 and reflect on growth.

Part II – Didactic Approach to the Modules

This part invites you to see the modules not simply as online lessons but as dynamic resources rooted in a didactic philosophy of competence-oriented learning. They are designed to guide VET professionals in understanding how theory, practice, and reflection intersect in digital competence development. Each module reflects an intentional design logic that supports gradual progression—from awareness to understanding, from guided experimentation to applied competence, and finally to validation and self-directed transfer.
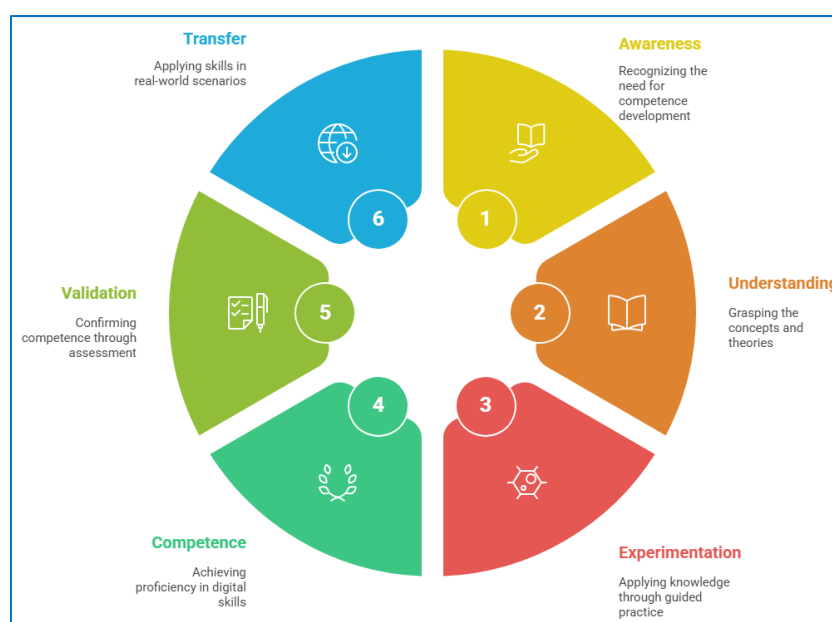
Behind this structure lies a strong pedagogical reasoning: the modules are not isolated units but components of an interconnected learning system aligned with the SMERALD Competence Framework. This means that each activity contributes to knowledge building, skills development, and attitude formation. Trainers using these modules are encouraged to act as facilitators who create reflective and inclusive learning environments, guiding participants to connect what they learn with real-world applications. The SMERALD modules therefore go beyond providing content—they help educators redesign their approach to teaching, integrate digital tools meaningfully, and cultivate critical and creative thinking in their learners. This section explores how these pedagogical principles translate into practical use, empowering trainers to build transformative and competence-driven learning experiences.
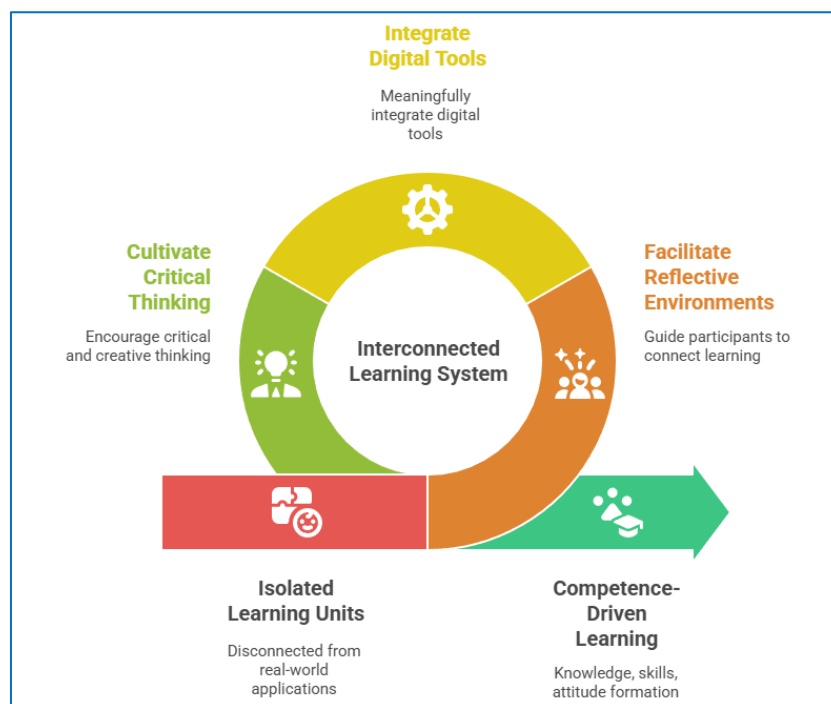
This section provides a pedagogical overview of each module, its learning objectives, and guidance on how to extract relevant content for different teaching or training contexts.

The available courses on the SMERALD Platform are:

1. **AI for SMEs**

2. **Data Analysis**

3. **Facilitating Design Thinking Workshops**

4. **The LEVEL5 Approach (including the SPIDER Questionnaire)**

5. **SMERALD Competence Framework**

6. **Competence-Oriented Learning and Validation**

7. *Blueprint Format for a CPD*

1. AI for SMEs

In today's rapidly changing world, understanding artificial intelligence is no longer optional for VET professionals—it's essential. AI literacy enables educators and trainers to recognise how automation, data-driven systems, and digital assistants are reshaping workplaces, professions, and the way learning is delivered. The SMERALD AI module has been developed to provide a foundational understanding of AI's relevance, helping trainers grasp both the opportunities and the limitations of these technologies in education and business contexts.
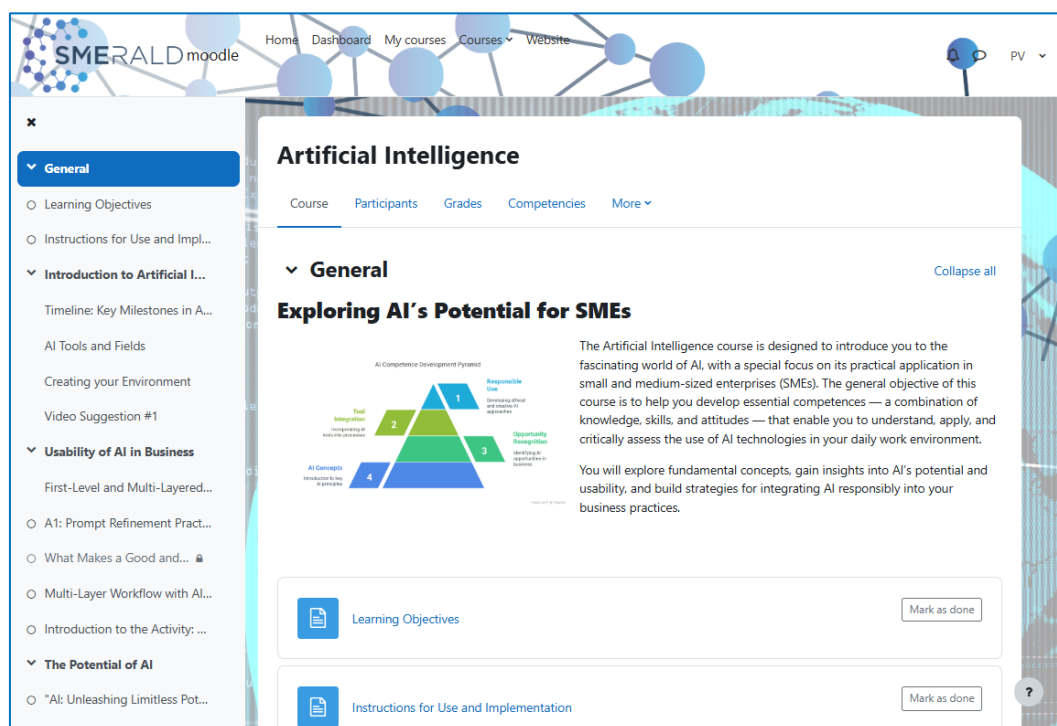
Purpose: This module introduces the fundamental concepts, benefits, and ethical challenges of Artificial Intelligence in an accessible and practice-oriented way. It focuses on raising awareness of how AI can support innovation, improve productivity, and enhance creative problem-solving, particularly in small and medium enterprises. The aim is not to turn educators into AI experts but to empower them to critically understand and mediate AI-driven processes within their own teaching and training environments.

Pedagogical Concept: The AI for SMEs module follows a didactic logic based on the SMERALD Competence Framework, combining knowledge acquisition with experiential learning. It uses a scaffolded approach—starting with awareness and comprehension, then moving towards application and reflection. Learners explore real-world examples, test AI tools, and discuss

implications with peers, which allows them to develop both conceptual and ethical literacy. The design encourages critical thinking about AI's potential to transform learning environments, as well as reflection on its societal impact.

Learning Outcomes: By completing this module, you will be able to identify key AI applications, evaluate their potential in business and training settings, and recognise the ethical considerations that accompany their use. You will also gain the confidence to integrate AI examples into your teaching and to guide learners in exploring these tools responsibly.

Blended Tip: Combine the online module with practical, context-specific examples from your region or sector. For instance, discuss how a local SME uses chatbots for customer interaction or data analytics for process optimisation. Follow up with classroom or workshop sessions that allow participants to experiment with AI tools and collaboratively design simple AI-supported solutions to real problems.

2. Data Analysis

In a data-driven society, the ability to understand and interpret information is fundamental for educators and learners alike. Data analysis is not only about working with numbers but about learning to extract meaning, make informed decisions, and communicate insights clearly. For VET professionals, data literacy enables better course design, evidence-based decision-making, and teaching that reflects how digital tools are transforming the workplace.
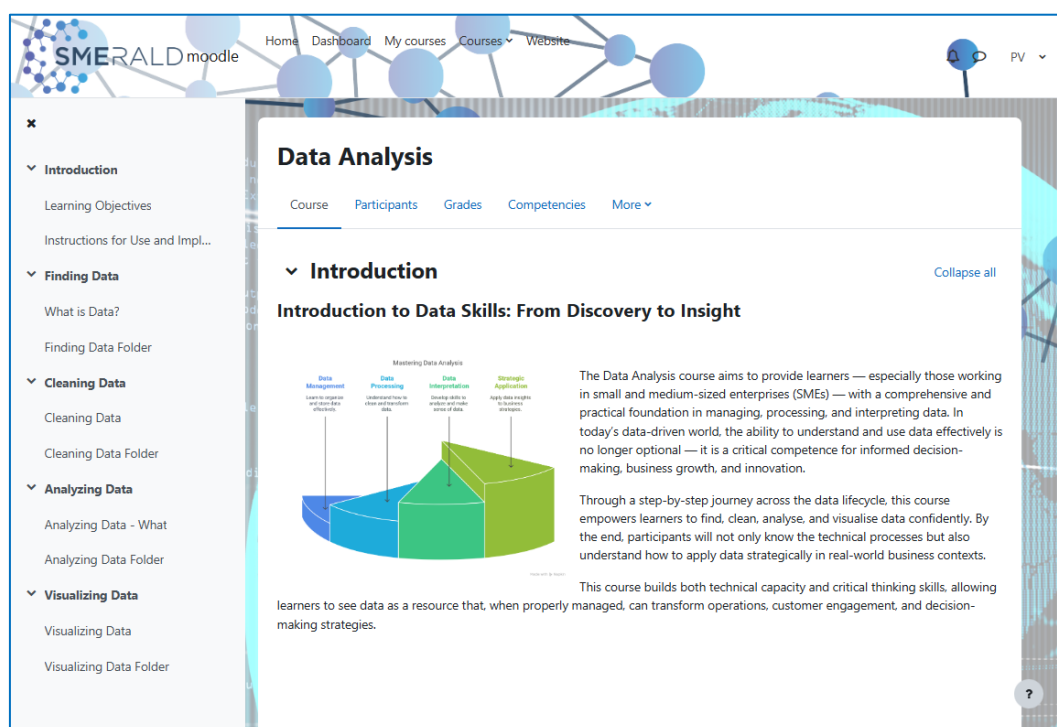
Purpose: This module develops analytical thinking and practical skills for interpreting data, helping you transform raw information into actionable knowledge. It emphasises both technical understanding and critical reflection—knowing not only how to handle data, but also when and why to use it.

Pedagogical Concept: The module follows an experiential learning model, guiding you from conceptual understanding to active exploration. It introduces fundamental principles such as data collection, cleaning, and visualisation, before engaging you in exercises that promote critical thinking about data accuracy and bias. The design is highly applied, encouraging you to experiment with accessible tools and small datasets relevant to your field. Discussions and reflective prompts link statistical literacy with ethical and pedagogical considerations,

ensuring that data becomes a means for better teaching and learning rather than an abstract skill.

Learning Outcomes: By completing this module, you will be able to interpret datasets confidently, visualise patterns effectively, and draw meaningful conclusions to support decision-making in educational and business contexts. You will also learn to question data sources critically, identifying limitations and potential biases.

Blended Tip: Integrate short live demonstrations or exercises using real or simulated datasets from your own sector—such as student performance metrics, customer feedback, or production data. Encourage participants to collaborate on analysing results and presenting insights, thus connecting theoretical understanding with authentic professional challenges.

3. Facilitation of Design Thinking Workshops

In rapidly evolving learning and business contexts, problem-solving requires creativity and user focus rather than rigid procedures. The Design Thinking module introduces an innovation process that blends analytical reasoning with imaginative exploration, empowering trainers and learners to approach challenges from new perspectives.

Purpose: This module provides a structured yet flexible innovation method that fosters creativity, empathy, and collaboration. It helps educators and trainers learn how to guide learners through iterative problem-solving cycles that mirror real innovation practices in companies and start-ups. The goal is to enable participants to think like designers—curious, human-centred, and ready to test ideas quickly.

Pedagogical Concept: The didactic logic of this module is based on experiential learning and collaborative exploration. Participants progress through the classic stages of Design Thinking—empathise, define, ideate, prototype, and test—while learning to balance divergent and convergent thinking. Reflection points and peer feedback loops are built in after each phase to encourage critical evaluation and collective learning. The process promotes active participation and supports the development of transversal competences such as communication, teamwork, and adaptability.

Learning Outcomes: By completing this module, you will learn to empathise with users, identify and define authentic challenges, ideate multiple solutions, build quick prototypes, and evaluate results constructively. More importantly, you will gain an understanding of how to integrate the Design Thinking process into your teaching or training context to foster creative problem-solving and innovation mindsets among learners.

Blended Tip: Use this module as the foundation for interactive workshops or design sprints. Start with an online introduction to the method and key tools, then continue with face-to-face sessions where small groups apply each phase to a practical challenge relevant to their context. Encourage participants to document their process and reflections on the platform to support competence validation through the SMERALD framework.

4. SPIDER Questionnaire (LEVEL5 Approach)

Imagine starting your learning journey by mapping your strengths and challenges with the SPIDER tool. This interactive reflection helps you see where you are now and where you want to go, transforming a simple questionnaire into a mirror of your digital competence landscape. The SPIDER Questionnaire is part of the **LEVEL5 Approach module**, where you can also explore the theoretical background of this methodology and access three detailed LEVEL5 assessments focusing on **AI, Digital Data, and Data Analysis**. This ensures that your self-reflection aligns with the same competence-oriented structure used throughout the SMERALD learning environment.

Purpose: To help you assess your baseline competences and identify your personal learning priorities while introducing you to the underlying validation philosophy of the SMERALD framework.

Pedagogical Concept: Encourages self-reflection as the foundation for competence development. By visualising your current status and understanding the connection between the SPIDER results and the LEVEL5 system, you become more aware of how learning outcomes are measured and validated. This approach allows learners and trainers alike to establish a shared language around competences and growth.

Application Tip: Use it as a pre-assignment for learners before workshops or as an entry activity in the LEVEL5 module to contextualise the following assessments and reflection exercises.

5. SMERALD Competence Framework

The SMERALD Competence Framework module provides participants with a structured understanding of how competences are defined, developed, and validated within the SMERALD learning environment. It is deeply rooted in the LEVEL5 approach, a taxonomic system developed for competency-based learning and validation that helps trainers and learners visualise their progress and understand how learning outcomes translate into professional performance.
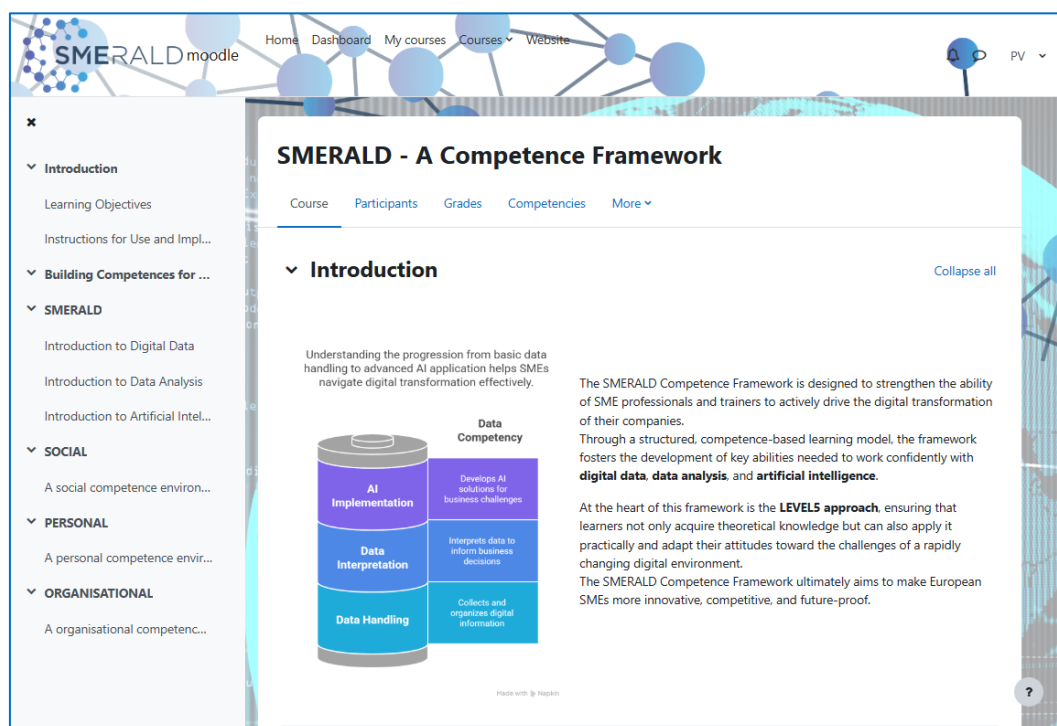
Purpose: This module introduces the conceptual foundation of competence-oriented learning as used in the SMERALD project. It demonstrates how knowledge, skills, and attitudes can be systematically developed and validated across formal, non-formal, and informal contexts. The goal is to help educators design meaningful learning processes that go beyond content delivery and instead focus on demonstrable competence growth.

Pedagogical Concept: The SMERALD Competence Framework follows the LEVEL5 three-dimensional model, recognising the development of:

- **Knowledge (cognitions):** Understanding digital data, data analysis, and AI concepts.

- **Skills (actions):** Applying digital data techniques and tools in practical business scenarios.

- **Attitudes (emotions and values):** Cultivating a proactive and adaptive mindset towards digital transformation.

This model categorises competencies into five quality levels, ranging from novice to competent expert. It provides a structured method for designing and planning informal and non-formal learning experiences while validating competences in specific practical contexts. The LEVEL5 approach emphasises the importance of context and ensures that learners can effectively demonstrate their competences in real-life situations.

6. Competence-Oriented Learning & Validation (COL&V)

In modern VET education, designing competence-oriented learning requires more than technical understanding—it demands an integrated view of planning, implementation, and validation. The Competence-Oriented Learning & Validation (COL&V) module provides this perspective, bridging theory and practice for educators who want to create meaningful, measurable, and learner-centred experiences.
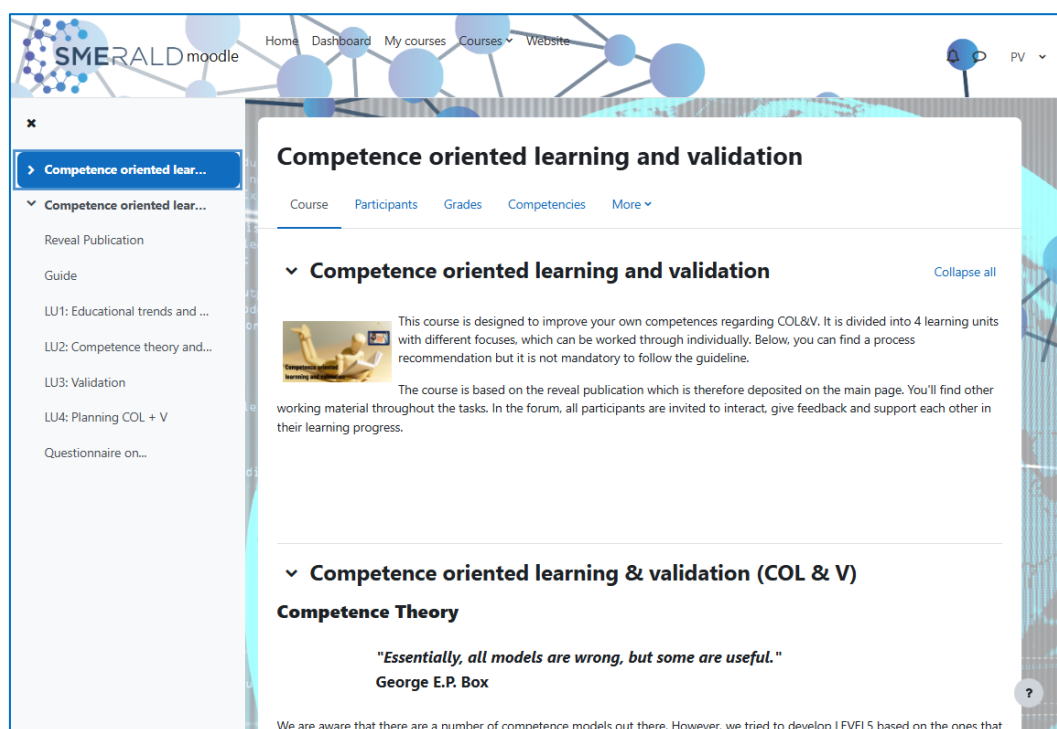
Purpose: This module helps educators design, plan, and validate their own competence-based learning environments. It offers a theoretical foundation for competence-oriented approaches and provides tools to translate them into practical learning designs. Participants learn how to move from curriculum goals to tangible learning outcomes that can be documented and validated.

Pedagogical Concept: The COL&V module is built around the principles of the SMERALD Competence Framework and the LEVEL5 approach. It guides educators through the process of defining competence goals, developing learning activities aligned with these goals, and creating validation mechanisms that capture learners' progress in knowledge, skills, and attitudes. The approach emphasises contextualisation—ensuring that every learning environment reflects the needs of the learners, institutions, and professional settings. It

supports iterative learning cycles where planning, implementation, reflection, and validation are integrated, helping educators establish continuous improvement practices in their training design.

Learning Outcomes: By completing this module, you will understand how to plan, implement, and validate a competence-oriented learning environment. You will learn to create training plans aligned with competence progression and to use validation results as feedback for improving your learning design.

Blended Tip: Use this module as a final step in your blended learning journey. Combine online study of theoretical foundations with hands-on workshops where participants design their own competence-based modules. Follow up with validation exercises or pilot testing to ensure the designed activities lead to measurable competence growth.

7. Blueprint Format for a CPD

The **Blueprint Format for a CPD** module is designed as a transferable model for educators and training providers who wish to develop their own competence-oriented professional development programmes. It serves as both a methodological guide and a practical template, showing how to apply the SMERALD approach beyond its original context. The blueprint captures the full learning cycle—from needs analysis and planning, to implementation, facilitation, and validation—providing a repeatable structure that ensures quality, coherence, and measurable competence development.
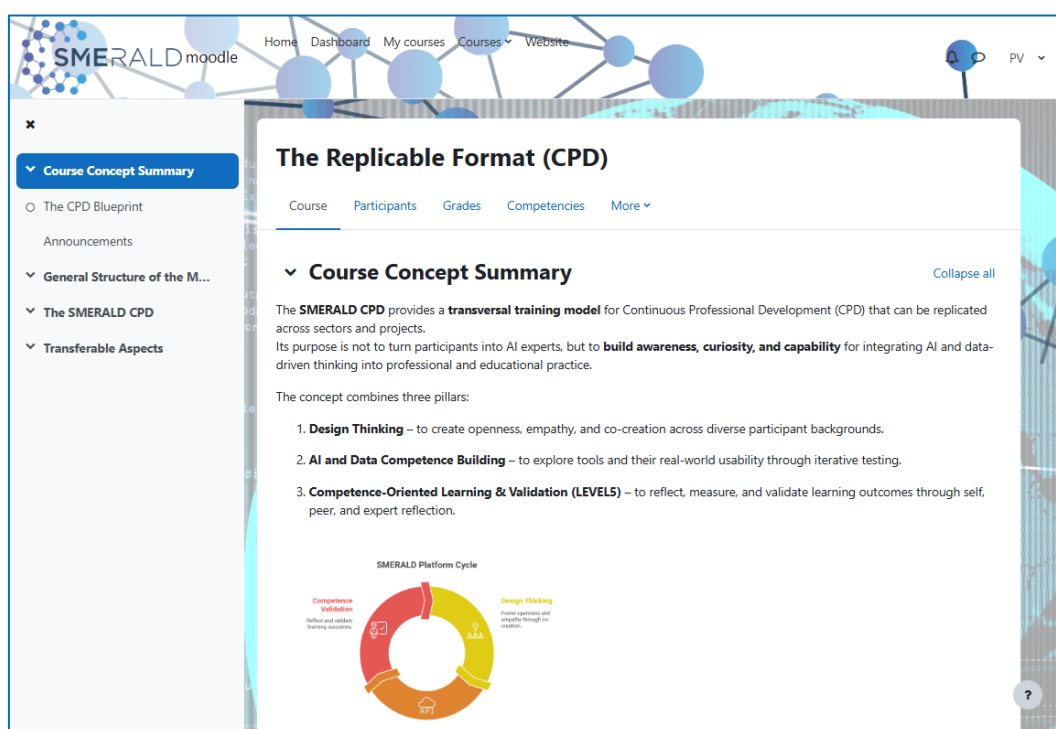
Purpose: This module supports trainers and institutions in transforming their experiences from the SMERALD CPD into adaptable learning designs. It highlights how to embed reflection, validation, and blended learning principles into future CPDs, promoting sustainable digital competence building across sectors.

Pedagogical Concept: The blueprint aligns with the LEVEL5 approach and the SMERALD Competence Framework. It offers a systematic model for constructing a CPD module, beginning with defining competence goals, identifying target groups, and formulating learning objectives. Trainers are guided through planning the learning environment, sequencing activities, integrating digital and face-to-face components, and designing

assessment methods for validation. This structure encourages iterative improvement: each implementation can be adjusted based on learner feedback and validation results, ensuring continuous refinement of training quality.

Learning Outcomes: After completing this module, you will be able to design your own competence-based CPD course using the SMERALD framework as a foundation. You will understand how to apply the LEVEL5 validation logic, structure learning in progressive phases, and ensure coherence between objectives, activities, and outcomes.

Blended Tip: Use the blueprint as both a planning and facilitation tool. Begin with an online preparation phase where participants co-design learning goals, continue with live or virtual workshops for collaborative development, and close with reflection and validation steps on the platform.

Summary and Recommendations

The SMERALD Manual brings together two complementary components: practical guidance on navigating the learning platform and a deep didactic insight into the pedagogical structure that underpins the SMERALD modules. Together, these sections form a coherent roadmap for VET professionals who wish to combine digital competence development with blended learning practices. Part I equips users with the technical and procedural knowledge required to access, explore, and integrate the platform into their teaching or training routines. Part II connects these technical aspects with educational reasoning, showing how each module contributes to competence-oriented learning and validation.
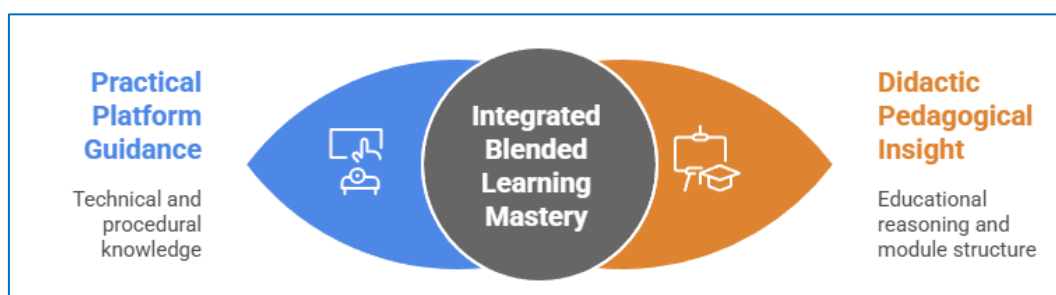

The integration of the SPIDER Questionnaire, AI and Data modules, Design Thinking, the SMERALD Competence Framework, and the LEVEL5 validation tools illustrates a continuous cycle of reflection, experimentation, and competence growth. This cyclical approach supports lifelong learning by allowing educators to start at their current competence level and progress at their own pace. The inclusion of the **Blueprint Format for a CPD** adds a strategic layer to this process: it transforms the SMERALD methodology into a transferable model that other institutions can replicate or adapt for their own professional development offers.

From an implementation perspective, the outcomes described here are aligned with the findings and best practice results presented in the **SMERALD Implementation Strategy Report**. These results confirm the platform's relevance as a digital learning ecosystem that effectively bridges theory and practice. Trainers who apply this approach report higher engagement, stronger collaboration among participants, and clearer documentation of learning progress through the LEVEL5 system.

In conclusion, this manual provides both a conceptual and a practical foundation for embedding the SMERALD approach in VET contexts. It encourages trainers to see digital competence not as a fixed target, but as an evolving capability developed through guided exploration, reflection, and validation.

Recommendations:

1. Start with the SPIDER Questionnaire to define personal or group learning needs.

2. Follow the recommended sequence of modules for a coherent learning pathway.

3. Integrate face-to-face or virtual sessions for reflection and co-creation.

4. Use the LEVEL5 validation tools to document and visualise competence growth.

5. Apply the Blueprint Format for CPD to replicate and expand the SMERALD approach in your institution or network.
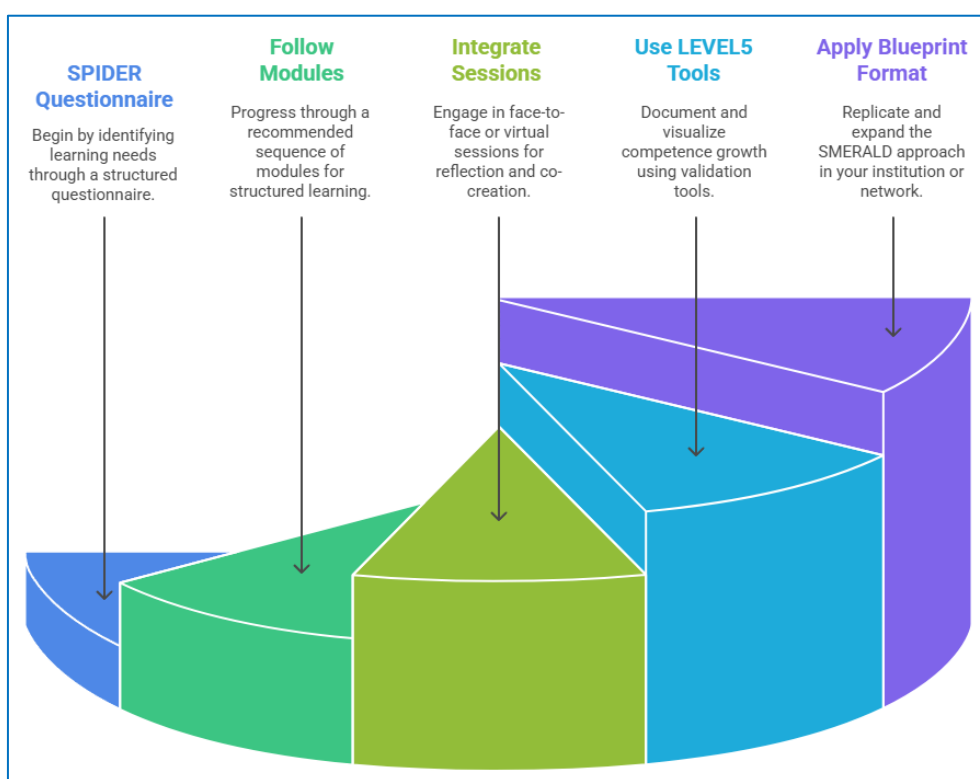
These recommendations ensure that the SMERALD methodology remains actionable, adaptable, and impactful for diverse professional learning environments.

By following this guide, you will gain both technical confidence in navigating the SMERALD Platform and pedagogical understanding of its underlying competence-oriented approach. Each module offers flexible, practice-oriented content that can be adapted for different audiences. Use the SMERALD Competence Framework as your compass: connect learning, reflection, and validation to achieve meaningful impact in digital competence development.