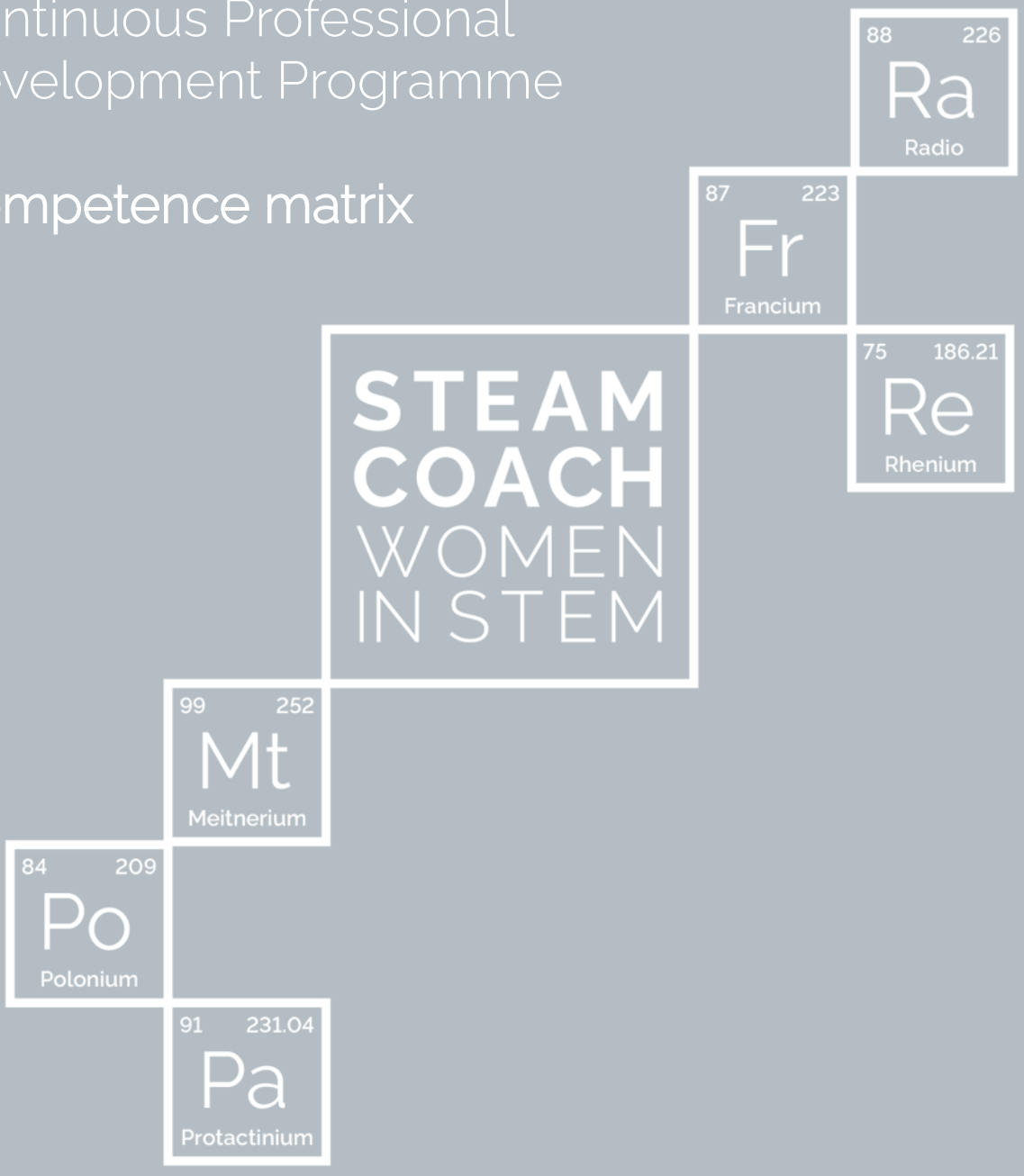
Overcoming barriers to female participation in STEM fields

Diversity and gender-sensitive Continuous Professional Development Programme

Competence matrix



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Why?

Opening note

*If you want to lift up humanity, empower women. It is the most comprehensive, pervasive, high-leverage investment you can make in human beings – **Melinda Gates***

The **STEAM Coach** project — **STEAM coaching to counteract women's underrepresentation in STEM-related TVET careers and professions** — addresses the critical issue of gender disparity in STEM-TVET fields. It aims to foster gender-inclusive career pathways that create lasting opportunities by promoting systemic organisational change. Central to its mission is the meaningful participation and retention of girls and women in these vital sectors.

To achieve this purpose, the STEAM Coach consortium has developed a **diversity and gender-sensitive Continuous Professional Development Programme** (CPDP) designed to address the unique challenges and opportunities within STEM fields. The programme focuses on strengthening organisational leadership capacity, equipping leaders with the tools, strategies, and knowledge necessary to drive meaningful and lasting change.

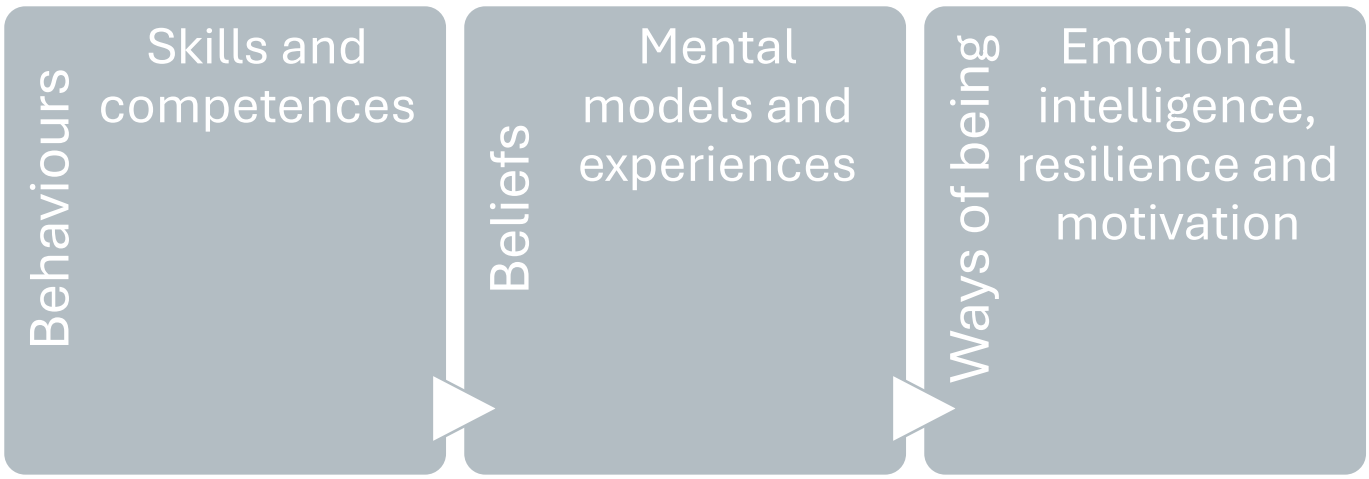
The **STEAM Coach CPDP** takes a holistic approach, recognising that meaningful change requires both immediate actions and long-term strategic planning. By combining practical training elements with broader systemic changes, It aims to create an environment where girls and women can thrive in STEM-TVET careers, supported by organisations that understand and actively promote gender inclusion.

CPDP objectives

At its core, this CPDP gender-sensitive training programme is a structured intervention aimed at fostering systemic organisational change and promoting inclusivity within STEM fields, both in educational and professional settings. The programmes employs an innovative STEAM coaching approach that combines traditional coaching methodologies with gender-sensitive practices and systemic understanding of barriers affecting women's participation in STEM-TVET fields.

To develop organisational leadership capacity, the programmes focus on equipping leaders with the knowledge, skills and tools needed to champion diversity and gender-sensitive training initiatives. This involves building awareness of unconscious biases, developing cultural competence, and understanding the complex interplay between personal, institutional and societal factors that influence gender participation in STEM-TVET fields.

The implementation of practical diversity strategies encompasses evidence-based approaches that address three key domains:



These strategies are designed to create sustainable change by challenging traditional notions of gender roles whilst promoting inclusive practices at all organisational levels. Fostering inclusive learning environments requires a holistic approach that considers multiple perspectives and addresses both physical and psychological aspects of inclusion. This includes creating safe spaces for learning, implementing gender-sensitive pedagogical approaches, and ensuring equal access to resources and opportunities. The focus extends beyond mere physical access to encompass emotional safety, cultural sensitivity and the promotion of diverse role models.

Supporting sustainable organisational change involves developing comprehensive frameworks that embed gender equality principles into organisational structures, policies and practices. This requires continuous monitoring and evaluation of progress, regular assessment of intervention effectiveness, and the development of supportive networks that can maintain momentum for change over time. The approach emphasises the importance of creating lasting cultural transformation rather than implementing temporary solutions. Through these interconnected elements, organisations can work towards creating more equitable and inclusive STEM environments that support the participation and advancement of women and girls in technical fields.

STEM-TVET fields

To effectively develop content for the STEAM Coach programme, it is essential to clearly define the scope of STEM-related TVET fields where interventions are most needed. These fields have been identified through UNESCO's classification framework and analysis of labour market data, which consistently show significant gender disparities in technical and vocational education. The ISCED-F 2013 classification system provides a standardised framework for categorising these fields, enabling partners to develop targeted, contextually relevant content that addresses specific barriers to women's participation in technical education and careers. This classification is particularly relevant for the development of coaching methodologies, training materials and support resources that aim to increase women's representation in traditionally male-dominated technical sectors.

Core STEM-TVET Fields

Natural Sciences, Mathematics and Statistics	Information and Communication Technologies (ICT)	Engineering, Manufacturing and Construction	Agriculture, Forestry, Fisheries and Veterinary
- Laboratory technician programmes - Applied sciences and mathematics - Research assistance and technical support roles - Chemical and biological analysis - Quality control and assurance - Scientific data management	- Software development - Network administration - Data management - Computer applications and systems - Cybersecurity - Digital systems maintenance - Cloud computing technologies - Mobile application development	- Mechanical engineering - Electrical engineering - Construction and building trades - Manufacturing and production - Industrial maintenance - Electronics and automation - Robotics and automation systems - Industrial design - Civil engineering technologies - Renewable energy systems	- Agricultural technology - Veterinary technology - Environmental technology - Natural resources management - Sustainable farming systems - Aquaculture technologies - Forest management systems - Wildlife conservation technology

Table 1 - Core STEM-TVET Fields Classification Framework, adapted from UNESCO ISCED-F 2013 detailed field descriptions[1]

Understanding these classifications enables partners to develop coaching and training interventions that specifically address the unique challenges and opportunities within each field, whilst ensuring alignment with established educational frameworks and industry requirements. This structured approach supports the creation of targeted resources that can effectively promote gender equality across the full spectrum of technical and vocational education.

[1] https://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-fields-of-education-and-training-2013-detailed-field-descriptions-2015-en.pdf

Who?

CPDP target groups

The CPDP is designed for a diverse range of professionals across the TVET sector, business community and industry stakeholders. Within TVET and VET providers, this includes institutional leaders such as directors and department heads, training managers overseeing curriculum development, trainers and instructors delivering technical programmes, and quality assurance staff maintaining educational standards. In the business sector, the programme targets business owners and executives making strategic decisions, HR professionals managing recruitment and workplace policies, team leaders supervising technical staff, and employee representatives involved in inclusion initiatives. The stakeholder group encompasses industry association representatives, policy makers involved in TVET governance, industry advisors contributing to curriculum development, career guidance professionals supporting workplace transitions, and research and development staff advancing STEM-TVET innovation.

Engaging these targets is critical because each plays a critical role in shaping the STEM-TVET ecosystem: education providers directly influence the quality of education and student experiences, business sector participants determine workplace cultures and employment opportunities, while industry stakeholders drive systemic change through policy, advocacy and innovation. By developing their competences in cultural awareness, inclusive leadership and educational outreach, the CPDP enables these key actors to work together to build more equitable and inclusive STEM-TVET pathways that benefit both individual learners and the broader technical workforce to be more inclusive.

What?

CPDP Key terms

Project-specific terms

Behavioural coaching: an approach focused on sustainable behavioural change through identifying and modifying specific patterns of action and reaction. In STEM-TVET contexts, this involves understanding and adapting behaviours that may be influenced by gender stereotypes or cultural norms

Coaching: a powerful vehicle for sustainable and global success that encompasses both a technique for enabling change and a philosophical approach to personal and professional development. In STEAM Coach contexts, coaching serves as a transformative methodology for addressing gender-based barriers in STEM fields through systematic behavioural and cognitive change

Cognitive coaching: an approach that focuses on improving thinking patterns and mental processes that influence learning and performance. In STEM-TVET, this involves helping individuals recognise and challenge gender-based assumptions and develop more empowering thought patterns

Gender-Inclusive Career Paths (GICP): career development approaches designed to promote equal opportunity and address barriers to advancement for underrepresented groups. These pathways include targeted support mechanisms, clear progression routes, and strategies to overcome traditional gender-based limitations in STEM careers

Global coaching: abroad and inclusive form of coaching that considers multiple perspectives and assumes an enlarged mission for the coach, implying readiness to engage in lifelong learning. This approach is particularly relevant for addressing complex societal issues like gender equality in STEM fields

STEAM Coach: a professional who combines coaching expertise with understanding of gender equality issues in STEM fields. Their role involves guiding and facilitating STEAM-focused educational experiences while promoting equal opportunities and supporting women and girls in achieving their STEM-related educational and career goals

STEAM Coaching: an innovative coaching methodology specifically designed to address barriers affecting women's participation, performance and retention in STEM-related TVET fields. This approach combines traditional coaching techniques with gender-sensitive practices and systemic understanding of STEM-related barriers.

Systemic coaching: a holistic coaching approach that considers individuals as part of various interconnected systems, including family, organisational, and societal contexts. This methodology is particularly effective for addressing gender-related challenges in STEM fields as it acknowledges the complex interplay between personal, institutional, and social factors.

Transformational coaching: holistic method focused on creating significant change through addressing three key domains:

- Behaviours: skills and competencies
- Beliefs: mental models and experiences
- Being: emotional intelligence, resilience, and motivation

In STEM-TVET contexts, this approach helps address systemic inequalities and promote more equitable communities.

STEAM and STEM-related terms

Information and Communication Technology (ICT): the infrastructure and components that enable modern computing and digital communications. In STEM-TVET, ICT encompasses both the technical subjects studied and the tools used to facilitate learning and skill development.

Science, Technology, Engineering, and Mathematics (STEM): core technical disciplines that drive scientific discovery, technological advancement and innovation.

Science, Technology, Engineering, Arts and Mathematics (STEAM): integrated educational approach that combines traditional STEM subjects with creative and artistic elements. This framework emphasises innovation, creativity, and design thinking, providing a more holistic approach to technical education.

STEM-TVET: technical and vocational education specifically focused on STEM fields, combining theoretical knowledge with practical skills development. This approach emphasises hands-on learning, industry partnerships, and work-based training experiences.

Technical and Vocational Education and Training (TVET): educational programmes designed to equip learners with practical skills and knowledge for specific occupations or trades. TVET emphasises applied learning and direct preparation for workforce participation.

Educational and training terms

Apprenticeship: educational model that combines workplace training with classroom-based learning, allowing learners to gain practical experience whilst studying. In STEM-related TVET, apprenticeships often involve structured programmes where learners work alongside experienced professionals in technical fields whilst earning recognised qualifications.

Assessment hours: it includes the time needed to prepare an assignment (e.g., if a student has to spend 2 hours reading a book in order to be able to work on an assignment, those 2 hours should be considered.

Attitudes: the ability to develop tasks and solve problems of a higher or lower degree of complexity and different degrees of autonomy and responsibility.

Competence: proven ability to use knowledge, skills and personal, social and/or methodological abilities in work or study situations and in professional and personal development.

Competence-based learning (CBL): an approach to technical education that focuses on specific skills and measurable outcomes rather than time-based learning. This methodology emphasises practical capabilities and real-world application, with learners progressing based on demonstrated mastery of specific competencies rather than traditional academic metrics.

Continuous Professional Development Programme (CPDP): structured approach to maintaining and enhancing professional competencies through ongoing learning and skill development. In the context of STEAM Coach project, CPDP encompasses formal training, workshops, and practical experiences designed to support professionals in fostering gender-inclusive career paths in the STEM-related TVET fields

European Quality Assurance in Vocational Education and Training (EQAVET): European reference framework designed to help EU Member States monitor and improve the quality of VET. It provides a systematic approach to quality assurance through a cycle of planning, implementation, evaluation, and review, using common quality indicators and descriptors. It supports transparency, consistency, and continuous improvement in VET systems across Europe.

European Qualification Framework (EQF): 8-level, learning outcomes-based framework for all types of qualifications that serves as a translation tool between different national qualifications frameworks. This framework helps improve transparency, comparability and portability of people's qualifications and makes it possible to compare qualifications from different countries and institutions.

Gender-sensitive training (GST): educational approaches that explicitly consider and address gender-specific needs and challenges in the learning environment. This methodology promotes

inclusive practices, challenges gender stereotypes, and creates supportive learning spaces for all participants.

Contact training: face-to-face learning activities facilitated by a trainer, including interactive workshops, group discussions, practical exercises, case studies and collaborative problem-solving sessions, designed to develop competencies in promoting gender equality in STEM-TVET educational and professional environments.

Inclusive Learning Environment (ILE): an educational setting designed to accommodate diverse learner needs and promote equal participation and opportunity. Such environments address physical, social, and cultural barriers to participation and success, ensuring all learners can access and benefit from educational opportunities.

Learning hours: Refers to the total number of hours dedicated to hands-on sessions, self-study and assessment.

Learning outcomes: statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and attitudes

Self-directed learning: time dedicated to guided independent learning activities that include pre-session preparation, practical workplace application, reflective tasks and/or collaborative peer learning.

Skills: ability to apply knowledge and use know-how to complete tasks and solve problems. In the EQF context, they are described as cognitive (use of logical, intuitive and creative thinking) and/or practical and technical (manual dexterity and the use of methods, materials, tools and instruments).

Work-based learning (WBL): educational experiences that take place in authentic work environments, including apprenticeships, internships, and industry placements. This approach bridges theoretical knowledge with practical application, providing real-world context for skill development.

Diversity and inclusion terms

Accessibility: the design, development and implementation of programmes, facilities and resources that can be accessed, understood and used by all people regardless of their physical abilities, language, culture, geography, or other characteristics. In STEM-TVET contexts, this includes ensuring learning environments, tools, and materials are adaptable to diverse learner needs.

Cultural competence: the ability to effectively interact with people across different cultures and backgrounds. In STEM-TVET, this involves developing awareness, knowledge and skills to create inclusive learning environments that respect and value diverse perspectives, experiences and ways of learning.

Diversity: the presence and participation of people with different characteristics, backgrounds and experiences within educational and professional settings. In STEM-TVET, diversity encompasses dimensions such as gender, ethnicity, age, socioeconomic background, disability status, and other characteristics that shape individual experiences and perspectives.

Equity: the provision of fair access, opportunity and advancement for all people, whilst recognising and working to eliminate barriers that have historically prevented the full participation of some groups. In STEM-TVET, this involves identifying and addressing systemic barriers that may limit participation and success in technical fields.

Gender mainstreaming: a comprehensive strategy for promoting gender equality by considering gender perspectives in all aspects of organisational planning, implementation, and evaluation. This approach aims to address systemic barriers and biases that may limit women's participation and success in STEM-related fields.

Intersectionality: the understanding that individuals may experience multiple, overlapping forms of disadvantage or discrimination based on various aspects of their identity. In STEM-TVET, this concept helps recognise how different aspects of identity might affect participation and success in technical fields.

Reasonable accommodation: modifications or adjustments to environments, programmes or practices that enable individuals with different needs to participate fully. In STEM-TVET, this might include adapting equipment, providing alternative assessment methods, or adjusting training schedules

Social inclusion: the process of improving participation in society for people who are disadvantaged, through enhanced opportunities, access to resources, voice and respect for rights. In STEM-TVET, this involves creating welcoming learning environments and ensuring equal access to technical education and career opportunities

Unconscious bias: implicit attitudes or stereotypes that affect our understanding, actions and decisions without conscious awareness. In STEM-TVET, addressing unconscious bias is crucial for creating fair assessment practices and inclusive learning environments

CPDP Content

The programme focuses on three core competence areas—cultural competence and awareness, inclusive leadership and management, and educational outreach and STEM promotion—each designed to build capacity among TVET providers, businesses, and industry stakeholders. Through targeted professional development, these areas support the creation of more inclusive and equitable STEM-TVET environments.

Before detailing these competence areas, it is important to briefly explain the context of STEM-TVET fields, as they informed the development of targeted, contextually relevant content that addresses the specific barriers to women's participation in technical education and careers.

These fields were identified using UNESCO's classification framework and analysis of labour market data, both of which consistently highlight significant gender disparities in technical and vocational education. The ISCED-F 2013 classification system provides a standardised approach to categorising these fields, enabling the STEAM Coach programme to align its content with recognised international benchmarks while responding to real-world gender gaps in the STEM-TVET landscape.

Core STEM-TVET Fields

Natural Sciences, Mathematics and Statistics	Information and Communication Technologies (ICT)	Engineering, Manufacturing and Construction	Agriculture, Forestry, Fisheries and Veterinary
- Laboratory technician programmes - Applied sciences and mathematics - Research assistance and technical support roles - Chemical and biological analysis - Quality control and assurance - Scientific data management	- Software development - Network administration - Data management - Computer applications and systems - Cybersecurity - Digital systems maintenance - Cloud computing technologies - Mobile application development	- Mechanical engineering - Electrical engineering - Construction and building trades - Manufacturing and production - Industrial maintenance - Electronics and automation - Robotics and automation systems - Industrial design - Civil engineering technologies - Renewable energy systems	- Agricultural technology - Veterinary technology - Environmental technology - Natural resources management - Sustainable farming systems - Aquaculture technologies - Forest management systems - Wildlife conservation technology

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[2] https://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-fields-of-education-and-training-2013-detailed-field-descriptions-2015-en.pdf

Three competence areas form the foundation for creating inclusive and equitable STEM-TVET environments that support women's participation and advancement. Cultural competence and awareness builds understanding of biases and barriers, whilst inclusive leadership provides the organisational framework for sustained change, and educational outreach ensures effective promotion of STEM opportunities to diverse audiences. Together, these competences enable practitioners to implement meaningful changes that can contribute to advance gender equity in STEM-TVET education and work environments.

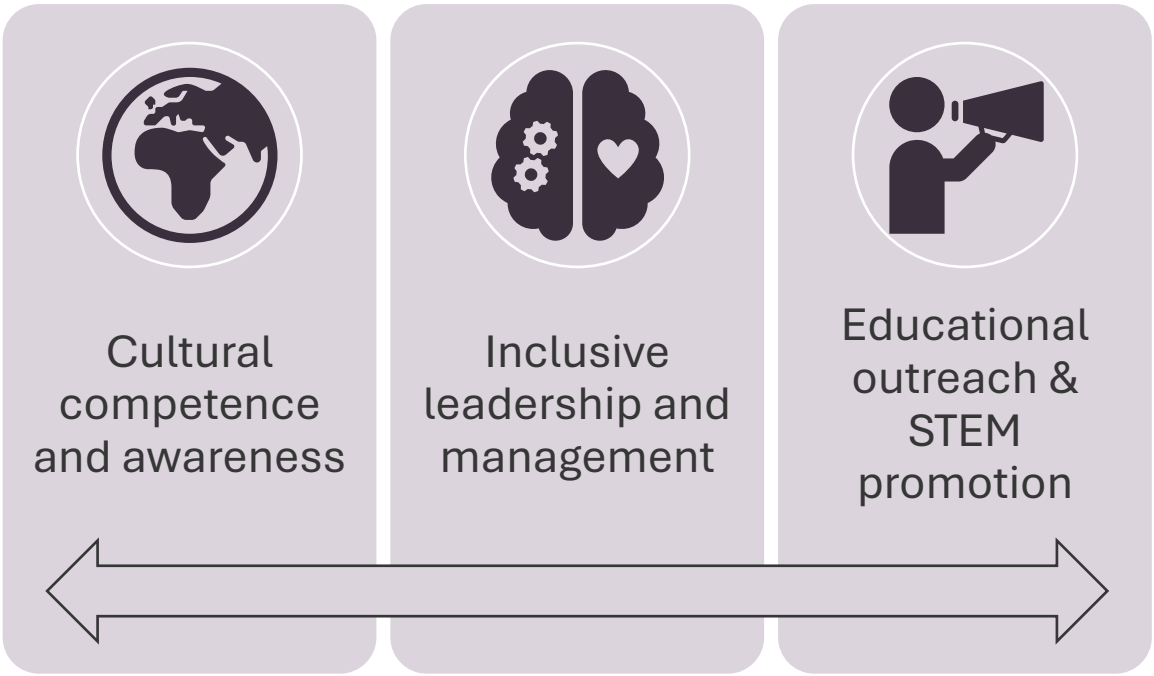

Figure 1 – STEAM Coach CPDP competence areas

Competence area 1. Cultural competence and awareness
1.1. Cultural biases and stereotypes
1.2. Education on unconscious bias, microaggressions, and strategies to mitigate their effects

This competence area explores the complex interplay between cultural dynamics and gender representation in STEM TVET fields. Through structured learning experiences, participants develop a deep understanding of how cultural biases and stereotypes influence decision-making and behaviour in technical education and the workplace. The module addresses unconscious bias through practical exercises that help participants to identify and mitigate their own biases, particularly in relation to gender and technical ability. There is a strong focus on identifying and effectively managing micro-aggressions that can create a hostile learning or working environment for women in technical fields. Participants will learn to create and maintain culturally responsive environments that support diverse learners and professionals in STEM TVET settings.

Competence area 2. Inclusive leadership and management
2.1. Diversity, equity, and inclusion
2.2. Inclusive recruitment and retentions strategies

This competence area equips organisational leaders with practical strategies for fostering inclusive STEM TVET environments. It begins with a comprehensive exploration of diversity, equity and inclusion principles specifically applied to technical education and workplaces. Participants develop concrete skills for implementing recruitment strategies that attract diverse talent and retention approaches that support the long-term career development of women in technical fields. The leadership development component focuses on building competencies for championing organisational change, with a particular emphasis on creating supportive structures for the advancement of women in STEM careers. Leaders will learn to develop and implement action plans that promote sustainable cultural change within their organisations.

Competence area 3. Educational outreach and STEM promotion
3.1. Strategies for outreach programs, and curriculum development that promote gender equity in STEM education
3.2. Implementing effective diversity and gender equality policies in the workplace

This competence area focuses on developing effective strategies for promoting STEM education and careers to diverse audiences, particularly women and girls. Participants learn to design and implement outreach programmes that challenge traditional gender roles and showcase opportunities in technical fields. The curriculum development component provides practical experience in creating gender-sensitive technical training materials and learning experiences. Special attention is given to workplace policy implementation, where participants learn to develop and implement policies that support women's participation and advancement in STEM TVET fields. This module emphasises practical approaches to building sustainable partnerships between educational institutions and industry stakeholders.

CPDP Training profile

The STEAM Coach CPDP is structured as an intensive three-day training programme, complemented by self-directed learning activities, and is designed to build essential competences for promoting gender equality in STEM-TVET environments. It adopts a blended learning approach, aligned with EQF levels 6–7, combining interactive face-to-face training sessions with preparatory and follow-up tasks to ensure both theoretical understanding and practical application. Each training day is dedicated to one of the three core competence areas. Participants engage in six hours of contact training per day, supported by 19 hours of self-directed learning. This format allows for in-depth exploration of concepts, hands-on activities, and the development of context-specific strategies for fostering inclusive practices. The self-directed learning component includes pre-session preparation, post-session assignments, workplace application, and ongoing peer learning opportunities, all supported by a suite of online resources and guided by face-to-face workshops.

Given the CPDP target audience in particular institutional leaders, training managers, HR professionals, business owners and industry stakeholders - the CPDP is aiming for EQF levels 6-7 for the following reasons:

EQF level 6 characteristics that match our target group:

- Advanced knowledge of the field (in this case STEM TVET)
- Managing complex technical/professional activities
- Decision-making responsibility
- Responsibility for managing the professional development of teams

EQF 6 – learning outcomes

Knowledge	Skills	Responsibility and autonomy
Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups

Source: https://europass.europa.eu/en/description-eight-eqf-levels

EQF level 7 elements that meet our needs:

- Highly specialised knowledge
- Critical awareness of knowledge issues in the field
- Specific problem-solving skills for innovation and strategic development
- Managing and transforming complex and unpredictable work/study contexts

EQF 7 – learning outcomes

Knowledge	Skills	Responsibility and autonomy
Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams

Source: https://europass.europa.eu/en/description-eight-eqf-levels

Given that our target audience includes both operational managers (Level 6) and strategic decision-makers (Level 7), the CPDP will admit the following implementation approach:

- Core modules at EQF Level 6 to ensure accessibility for all target groups

- Optional advanced components at EQF Level 7 for those in more strategic positions

This allows the CPDP to be both accessible and challenging enough for professionals who need to implement systemic changes in their organisations. In this sense, partner should observe the following:

Core modules (EQF level 6)
Cultural competence and awareness ▪ Fundamental for all participants regardless of role ▪ Essential for daily operations and interactions ▪ Builds the fundamental understanding required for any change implementation ▪ Directly applicable to all professional contexts
Educational outreach and STEM promotion ▪ Practical and actionable strategies needed across all roles ▪ Operational focus on programme development and implementation ▪ Direct application to recruitment and training activities ▪ Essential for immediate impact in organisations

Advanced components (EQF level 7)
Inclusive leadership and management ▪ Requires strategic organisational vision ▪ Involves complex change management processes ▪ Requires high-level decision-making skills ▪ Focuses on systemic change ▪ Requires understanding of wider institutional and policy contexts ▪ Involves management of complex stakeholder relationships ▪ Requires advanced knowledge of organisational development theories ▪ Essential for immediate impact in organisations

This split allows participants to build a strong foundation in cultural competence and practical implementation skills through the core modules, while those in leadership positions can develop more advanced strategic skills through the optional component.

Core modules (EQF level 6)
Day 1: Cultural competence and awareness Contact hours: 6 hours training Self-directed learning before/after: 19 hours
Day 2: Educational outreach and STEM promotion Contact hours: 6 hours training Self-directed learning before/after: 19 hours

Advanced component (EQF 7):
Day 3: Inclusive leadership and management Contact hours: 6 hours training Self-directed learning before/after: 19 hours

Total CPDP: 75 hours
18 hours contact training (6 hours × 3 days) 57 hours self-directed learning (pre-reading, assignments, practical application)

Table 3- STEAM Coach CPDP training profile

CPDP Learning units and competence matrix

Competence area	Learning units (LU)	Units of learning outcomes (ULO)
1.. Cultural competence and awareness 	1.1. Understanding and addressing cultural biases and stereotypes 1.2. Building bias-conscious organisations	1.1.1 Identifying personal and systemic biases 1.1.2. Impact of stereotypes in professional settings 1.2.1. Recognising unconscious bias patterns 1.2.2. Addressing microaggressions effectively 1.2.3. Implementing bias mitigation strategies
2.. Inclusive leadership management 	2.1. Fundamentals of DEI Leadership 2.2. Strategic inclusive talent management	2.1.1. Core concepts of diversity, equity, and inclusion (DEI) 2.1.2. Creating inclusive team environments 2.2.1. Inclusive recruitment practices 2.2.2. Retention strategies for diverse teams
3.. Educational outreach and STEM promotion 	3.1. STEM outreach and educational development 3.2. Implementing workplace equality initiatives	3.1.1. Designing effective outreach programs 3.1.2. Creating gender-inclusive STEM curricula 3.2.1. Developing diversity and gender equality policies 3.2.2. Measuring and monitoring policy effectiveness

1. Cultural competence and awareness — EQF 6

Knowledge	Skills	Attitudes	Assessment criteria
Learning unit: 1.1. Understanding and addressing cultural biases and stereotypes			
Unit of earning outcome: 1.1.1 Identifying personal and systemic biases			
Define key concepts of personal and systemic bias in STEM-TVET contexts	Identify manifestations of bias using reflection tools or real examples	Contribute to inclusive practices by acknowledging personal bias	Learner defines types of bias, maps examples from their own context, and reflects on how these affect their practice. Evidence may include reflection journal, discussion debrief, or concept map
Unit of earning outcome: 1.1.2. Impact of stereotypes in professional settings			
Explain how gender stereotypes influence access and advancement in STEM	Analyse professional effects of stereotypes using case scenarios	Take responsibility for identifying stereotype-driven exclusion	Learner interprets a stereotype chain and identifies consequences in a scenario. May include annotated map, peer discussion, or short report
Learning unit: 1.2. Building bias-conscious organisations			
Unit of earning outcome: 1.2.1. Recognising unconscious bias patterns			
Describe common patterns of unconscious bias in technical education/work	Track real or simulated patterns using diagnostic tools (e.g., checklists)	Commit to reflecting on and adjusting practices based on findings	Learner completes a bias tracker, categorises examples, and submits a summary of observed patterns. Supported by peer comparison or tool redesign

Unit of earning outcome: :1.2.2. Addressing microaggressions effectively

Describe the impact of microaggressions in STEM-TVET environments	Respond constructively to microaggressions in a leadership capacity	Demonstrate inclusive communication in challenging or biased situations	Learner creates and practices a professional response to a microaggression. Assessment may include peer-reviewed scripts, roleplay, or facilitator feedback

Unit of earning outcome: 1.2.3. Implementing bias mitigation strategies

Summarise strategies for inclusive organisational change	Develop a bias mitigation plan adapted to their professional context	Promote inclusive change through strategic leadership and peer engagement	Learner submits a contextual action plan for inclusion with clear steps, roles, and indicators. Peer feedback or presentation may be used for formative evaluation

2. Inclusive leadership management — EQF 6

Knowledge	Skills	Attitudes	Assessment criteria
Learning unit: 2.1. Diversity, Equity, and Inclusion (DEI)			
Unit of earning outcome: 2.1.1. Core concepts of Diversity, Equity, and Inclusion (DEI)			
Define key principles of DEI in STEM-TVET contexts, including systemic barriers and intersectionality.	Analyse organisational policies using DEI frameworks to identify gaps.	Commit to advocating for equitable practices in leadership roles.	Learner produces a written report evaluating DEI gaps in a selected case organisation, identifies systemic barriers, and proposes improvement measures using relevant DEI frameworks. Evidence includes a structured written document.
Unit of earning outcome: 2.1.2. Creating inclusive team environments			
Explain strategies for fostering psychological safety and belonging in technical teams.	Design and facilitate inclusive team-building activities.	Demonstrate accountability for addressing microaggressions in the workplace.	Learner submits a group activity plan that promotes psychological safety and inclusion, and reflects on the implementation process, highlighting how microaggressions were addressed. Evidence may include a plan document and a reflective summary
Learning unit: 2.2. Inclusive recruitment and retention strategies			
Unit of earning outcome: 2.2.1. Inclusive recruitment practices			

Describe bias-free recruitment techniques (e.g., blind CV screening, structured interviews).	Revise job descriptions and outreach materials to attract diverse candidates.	Champion transparency in hiring processes.	Learner audits recruitment tools and materials, identifies bias, and formulates actionable recommendations to improve transparency and diversity in hiring. Evidence includes an audit checklist, annotated materials, and a summary report

Unit of earning outcome: 2.2.1. Retention strategies for diverse teams

Identify retention challenges specific to women in STEM (e.g., career progression, work-life balance).	Develop mentorship programs and flexible work policies.	Take responsibility for tracking retention metrics and adjusting strategies.	Learner designs and presents a retention strategy plan that includes mentorship, flexibility options, and measurable KPIs. The plan is shared in a peer session for feedback and revision. Evidence includes the plan document and peer evaluation notes

3. Educational outreach and STEM promotion — EQF 6

Knowledge	Skills	Attitudes	Assessment criteria
Learning unit: 3.1. STEM outreach and educational development			
Unit of earning outcome: 3.1.1 Designing effective outreach programs			
Define the concept, structure, and purpose of outreach programmes	Apply and analyse selected outreach programs in diverse contexts	Demonstrate acceptance and understanding of outreach programmes, including their goals and structures	Learners engage in group discussions to define outreach programme types, evaluate best practices, and reflect on examples from the field. Evidence includes peer-feedback forms and discussion protocols
Unit of earning outcome: 3.1.2. Creating gender-inclusive STEM curricula			
Describe the principles and criteria of gender-inclusive curricula in STEM education	Identify the differences between gender-inclusive and non-inclusive curricula and propose strategies to make curricula more inclusive	Promote gender-equitable educational pathways by addressing knowledge gaps and social inequalities	Learners present the value of gender-inclusive curricula through group work and oral presentations. Evidence includes discussion minutes and peer feedback
Learning unit: 3.2. Implementing workplace equality initiatives			
Unit of earning outcome: 3.2.1. Developing diversity and gender equality policies			
Explain strategies for promoting diversity and gender equality in the workplace and describe implementation methods	Develop original diversity and gender equality strategies based on personal and contextual analysis	Reflect on feedback and insights to continuously improve strategies for workplace inclusion	Learners present individual strategies in a group setting and evaluate their impact through peer

			assessment and discussion
Unit of earning outcome: 3.2.2. Measuring and monitoring policy effectiveness			
Describe key indicators and tools used to measure workplace equality	Assess the effectiveness of equality policies and monitor implementation measures to support gender-equitable initiatives	Promote transparent and strategic communication regarding how political and organisational measures can improve gender-equitable workplaces	Learners develop a monitoring strategy based on a workplace scenario. Evidence includes group feedback, peer review, or meeting minutes

How?

CPDP implementation

To implement the STEAM Coach CPDP effectively, users should follow a three-part structure, each offering a specific type of learning and engagement:

Competence matrix

- Use this to guide training focus, monitor progression, and maintain quality assurance (EQAVET)

Face-to-face workshops

- Use this ready-made workshops and related resources on interactive training in-person sessions. These sessions are suited for institutional leaders, trainers, HR professionals, and team facilitators.

Self-directed learning

- Use this self-paced component to apply concepts through videos, readings, and assignments available on the STEAM Coach Learning Hub.

Competence matrix

The CPDP Competence Matrix is a practical tool that helps trainers and learners track their progress across three core competence areas: Cultural Competence and Awareness, Inclusive Leadership and Management, and Educational Outreach and STEM Promotion.

Each learning unit (LU) and its corresponding unit of learning outcome (ULO) is aligned with specific knowledge, skills and attitudes. They are also accompanied by clearly defined assessment criteria which describe how learners can demonstrate their competence through reflection tools, scenario analyses, action plans or peer-reviewed activities. These criteria ensure transparency and consistency in evaluation and enable organisations to implement systematic monitoring in line with the EQAVET quality assurance cycle, particularly during the implementation, evaluation and review phases.

The matrix also supports personalised learning, allowing participants to focus on either the core EQF Level 6 or advanced EQF Level 7 components depending on their professional roles and institutional responsibilities.

How to use it?

Trainers	Use the matrix to design lesson plans, create tailored assessments, and ensure learning outcomes are met

A VET trainer preparing girls for technical fields can use the matrix to build a workshop around inclusive recruitment, guiding participants to rewrite biased job ads and evaluate them using the assessment criteria from LU 3.2.

Learners	Use it as a self-assessment tool to identify learning gaps and areas for further development

A female apprentice in a mechatronics course can assess her confidence in promoting gender diversity in STEM using LU 1.1, then follow up with a self-directed learning activity on unconscious bias via the project's Learning Hub

Organisations	Use aggregated results to identify training needs and measure team-wide capacity development over time.

A TVET school leader analyses results across departments and sees weak scores in "Outreach and STEM promotion." They plan a staff CPDP cycle focused on LU 2.3, involving local female role models in tech as guest speakers.

The alignment of learning outcomes, assessment criteria, and progression levels described in the Competence Matrix provides a robust structure for applying the EQAVET quality assurance cycle within CPDP implementation. This integration helps ensure that training delivery is transparent, consistent, and outcome-focused across planning, implementation, evaluation, and review phases.

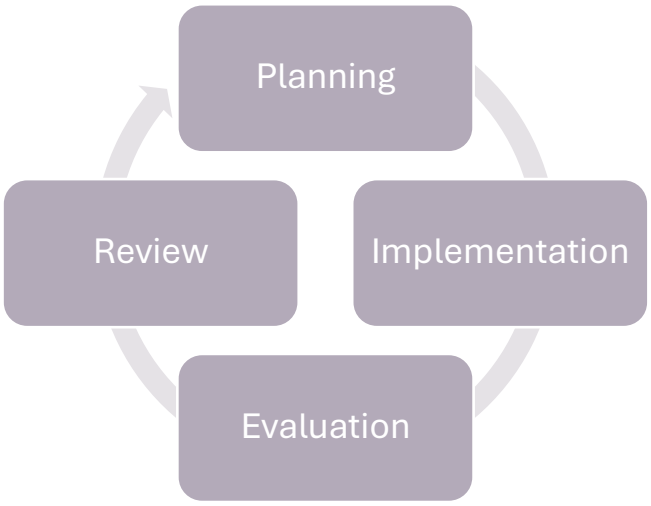

Figure 2 - EQAVET Quality Assurance Cycle

Planning

Use the matrix to define targeted, measurable learning objectives tailored to the CPDP's mission of advancing gender inclusion in STEM-TVET.

Example:

A VET trainer preparing girls for technical fields can use the matrix to build a workshop around inclusive recruitment, guiding participants to rewrite biased job ads and evaluate them using the assessment criteria from LU 3.2.

Implementation

Deliver face-to-face training aligned with ULOs and assessment criteria to ensure standardised delivery and equity-focused pedagogy

Example:

A trainer working with an engineering department uses LU 2.2.1 (Inclusive recruitment practices) to guide participants in revising job postings. Outputs can include annotated job descriptions and bias audits, fostering systemic change in hiring processes.

Evaluation

Apply assessment criteria to measure learning impact and workplace application.

Example:

Learners completing LU 3.2.2 (Measuring and monitoring policy effectiveness) may submit gender equality monitoring strategies tailored to their organisations. These can be evaluated using evidence such as KPIs, policy drafts, or peer review notes, supporting structured feedback and improvement.

Review

Use aggregated data from assessments and reflections to inform ongoing improvements in CPDP delivery and policy development

Example:

A VET provider collects results from LU 3.1.1 (Designing effective outreach programs) across departments. Identified gaps in outreach to girls in ICT are addressed through new STEM ambassador partnerships and adjustments to training modules in future CPDP cycles

Face-to-face workshops

The face-to-face workshops form the core of the CPDP's contact learning phase and are structured to facilitate critical reflection, peer exchange, and the co-construction of inclusive practices in STEM-TVET environments. Each workshop is aligned with specific LUs and ULOs from the Competence Matrix, supporting the development of competences in cultural awareness, inclusive leadership, and STEM outreach. These sessions are conducted across three days, each focused on one competence area, and are delivered in small group formats to promote active engagement.

The workshops use a blend of scenario-based activities, structured dialogue, and collaborative problem-solving. They are designed to help participants connect theory with their organisational realities—for instance, revising gender-biased recruitment materials, evaluating outreach strategies, or responding constructively to microaggressions in the learning or work environment. Learning outputs generated during workshops—such as action plans, audit tools, or peer-reviewed scripts—can also be used as evidence for assessing learning outcomes as defined in the Competence Matrix.

How to use it?

Trainers	Use the workshops to facilitate hands-on activities that help participants apply inclusion concepts in realistic scenarios.

A VET trainer delivering a session on unconscious bias in STEM education asks participants to identify biased feedback in real classroom examples and guides them to rewrite these using inclusive language, aligned with LU 1.2.1.

Learners	Participate in group tasks and discussions that translate theoretical knowledge into practical, job-relevant strategies

A TVET instructor attending a session on inclusive leadership collaborates with peers to map gender gaps in their institution's leadership team and develops an action plan for mentoring underrepresented staff, addressing LU 2.1.1.

Organisations	Integrate workshops into institutional training cycles and use participant outputs to inform broader inclusion goals

A school leadership team includes CPDP workshops in its staff training week. After a session on STEM outreach, teams co-create new flyers and posters that highlight diverse female role models in technical fields, contributing to LU 3.1.2 and the institution's gender equality strategy

Self-directed learning

Self-directed learning complements the face-to-face workshops by enabling participants to explore key concepts in greater depth, at their own pace, through guided individual activities. Structured around each Learning Unit and hosted on the STEAM Coach Learning Hub, this component includes reading materials, reflection exercises, workplace tasks, and digital resources. It supports the personal application of inclusive strategies in real work settings and encourages continuous competence development beyond the training sessions.

How to use it?

Trainers	Assign pre- and post-workshop tasks to reinforce learning outcomes and support workplace application

A trainer leading a session on inclusive recruitment shares a self-directed assignment where participants analyse a job ad from their organisation, identify gender bias, and submit a revised version, linked to LU 2.2.1.

Learners	Engage independently with resources and reflection tools to apply inclusive practices to their daily roles

A female engineering student completes a reflection journal on her experience in a male-dominated classroom and develops a short action plan to create a more inclusive peer environment, linked to LU 1.1.2.

Organisations	Monitor completion of tasks and gather insights from learner outputs to support ongoing training evaluation and planning

A training coordinator reviews self-directed submissions on gender-inclusive outreach from multiple departments. Common challenges identified in LU 3.1.1 activities are used to shape the next institutional CPDP cycle and update outreach materials

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