Escola Superior de Educação

Designação	Professional Learning Programme (PLP): Training for Teacher Trainers - Creativity and Critical Thinking/ Programa de Aprendizagem Profissional (PLP): Formação para Formadores de Professores - Criatividade e Pensamento Crítico

Área de Formação (CNAEF)	ECTS	Nível EQF
140	5	*7-Mestrado*

	Presenciais	Online - síncronas	Online - assíncronas	TOTAL
Horas de contacto	42	16		58
			Horas de trabalho autónomo	77
			Horas TOTAIS	135

Público a que se destina	Primary, secondary and higher education teachers/ Professores do Ensino Básico, Secundário e Superior
Vagas (se aplicável)	Minimum: 20; Maximum: 40/ Mínimo: 20; Máximo:40

1. Equipa docente/ Equipa de Formação

	Grupo Disciplinar	nome	email	Ciência ID
Responsável científico IPVC	Educação e Formação de Professores/ Education and Teacher Training	Fátima Pereira	fatimapereira@ese.ipvc.pt	A11D-C969-8086
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	Outros com certificação no domínio/ Others with certification in the field	A definir/ To be defined		

2. Resumo

This Professional Learning Programme (PLP) aims to build upon and strengthen teacher trainers' competencies to lead impactful and effective professional learning focused on fostering and assessing Creativity and Critical Thinking as part of subject teaching, notably in science and maths.

The programme prepares teacher trainers to design, facilitate, adapt, implement, and evaluate professional learning aligned with the OECD Creativity and Critical thinking frameworks and the Portuguese national curriculum priorities. It combines theoretical foundations with practical design work, modelling, collaborative reflection, and practical application.

The teacher trainers will develop an understanding of how to teach subject knowledge, with an emphasis on science and maths, while developing students' creative and critical thinking by learning about the OECD Creativity and Critical thinking framework, its conceptual underpinnings, and the signature pedagogies that cultivate creativity and critical thinking. Participants will explore classroom dialogue, assessment practices, feedback strategies, facilitation techniques, and approaches to building trust, autonomy, and comfort with uncertainty in pedagogical practice. They will progressively design lesson plans, assessment tools, feedback strategies, locally relevant teacher training materials and a draft professional learning programme implementable in their local context. Participants will also explore the opportunities, risks and implications of both teacher and student use of GenAI to support creativity and critical thinking. The course integrates in-person workshops, synchronous online sessions, and independent personal and collective work.

3. Objetivos de aprendizagem

Knowledge

By the end of the programme, participants will be able to:

- Clearly articulate what creativity/critical thinking does and does not look like in the classroom.
- Identify opportunities to support creativity and/or critical thinking with an emphasis on science and maths classrooms.
- Recognise the relationship between creativity, critical thinking subject knowledge and learning and apply this to future planning and facilitation.
- Understand assessment principles aligned with creativity and critical thinking.
- Recognize design criteria for strengthening Creativity and Critical Thinking in science, maths and other classroom contexts.
- Understand the opportunities and risks of Generative AI in education for fostering creativity and critical thinking.
- Be aware of the OECD frameworks and tools on creativity and critical thinking, how they can be implemented and how they relate to other frameworks.

Skills

Participants will be able to:

- Design and facilitate a professional learning programme that strengthens teachers' ability to foster and assess creativity and critical thinking in the classroom.
- Co-develop contextually relevant facilitation/teaching materials and examples that fit with the local curriculum.
- Model teaching techniques that cultivate creativity and critical thinking.
- Design lesson plans and assessment that develops subject knowledge and fosters creativity/critical thinking in engaging and meaningful ways.

Attitudes:
Participants will be encouraged to:
- Engage in self-reflection as facilitators and pedagogical leaders.
- Value uncertainty, ambiguity and productive struggle as necessary conditions for learning.
- Engage constructively in communities of practice.
- Demonstrate openness to uncertainty, dialogue, and feedback.
- Practice professional judgment toward use of GenAI in the classroom.

4. Conteúdos

In-Person Session 1 (3 Days):
Foundations of the PLP and Design for Creative and Critical Thinking (CCT) (21 hours)

Day 1- Foundations and Conceptual Clarity (7hr)

- Introduction and community-building
- Overview of PLP and the role of teacher trainers
- Working agreements (including use of AI)
- Introduction to OECD CCT framework and rubrics
- Teaching philosophy and personal definitions of creativity and critical thinking
- What CCT means for students, teachers, and society
- What is “novel”? What is “critical”?
- CCT and learning processes

Day 2- Pedagogical Design (7hr)
- Design criteria for strengthening CCT
- Classroom discourse and open-ended questioning
- Signature pedagogies
- Designing learning environments that support CCT
- Learning design- developing/adapting learning resources and applying design criteria to draft lesson ideas
- Use of GenAI to support learning design: opportunities, challenges and considerations

Day 3- Lesson Planning and Application (7hr)
- Summarising Days 1-2
- Modelling activities
- Structured lesson planning workshop
- Iterative drafting with reflection breaks
- Peer discussion and feedback
- Completion of first draft lesson plan
- Next steps and expectations for online phase

Online Synchronous Sessions:
Practice, Assessment, and Teacher Training Programme Development (8x2 hour sessions)

Each session includes:
- Check-in and reflection
- Conceptual framing

- Group and/or individual application task
- Peer discussion and/or group discussion

Session 1- Alternative Perspectives on Classroom Examples (2hr)
- Discussing local classroom examples
- Identifying alternative perspectives (with and without GenAI)

Between session: Refining lesson plan or creating a 2nd lesson plan

Session 2- Building Autonomy and Trust (2hr)
- Strategies to develop autonomy and trust when fostering CCT
- How would you know? And indicators of autonomy and trust in practice

Between session: Improving lesson plan and reflection activity/reading

Session 3- Modelling and Uncertainty (2hr)
- Importance of modeling and debriefing in CCT
- Dealing with uncertainty

Between session: Engaging with research and reflection

Session 4- Designing Assessments (2hr)
- Examples of CCT assessment
- Designing assessment tasks
- OECD assessment criteria

Between session: Adding assessment to lesson plan

Session 5- Assessment Criteria and Rubrics (2hr)
- Discussing assessments and assessment criteria
- Spotting and assessing student work for CCT

Between session: Adding/improving assessment

Session 6- Feedback and Professional Judgment (2hr)
- Writing effective feedback to foster creativity and critical thinking (with and without GenAI)
- Practicing evaluating student work

Between session: Identifying local teacher needs and reflection

Session 7- Facilitation Strategies (2hr)
- Strategies for leading professional learning
- Designing a local PLP training programme

Between session: Drafting/commenting on local programme

Session 8- Designing Teacher Training Resources (2hr)
- Create a teacher training activity/resource
- Prepare for piloting in in-person session

Between session: Improving draft and activity/resource to prepare for in person session

In-Person Session 2 (3 Days):
Reflections and Evaluation (21 hours)

Day 1- Consolidating Teaching and Learning Approaches (7hr)
- Reflection on online phase

- Revisiting core concepts
- Finalisation of lesson plans and training resources
- Refinement of local training programmes
- Revisiting teaching philosophy/theory of change

Day 2- Piloting an Activity (7hr)
- Trial implementation of a PLP activity (micro-teaching)
- Structured peer feedback
- Addressing contextual challenges

Day 3- Final Reflections and Assessment (7hr)
- Administration of final exam and monitoring instrument
- Professional follow-up planning (personal and professional)
- Presentation of local programmes
- Final reflections

Independent Work (77 hours)
Between sessions participants will:
- Design and strengthen lesson plans
- Design and strengthen assessment tools
- Engage with research and readings
- Prepare and revise a teacher training activity to pilot in the final in person session
- Reflect on implementation and contextual adaptation

They will also develop a local teacher training programme and prepare to facilitate it.

5. Metodologias de ensino e aprendizagem

This programme combines in-person workshops, synchronous online sessions, and independent work. The methodologies employed model creativity and critical thinking-oriented pedagogies, as participants experience and analyse the same strategies they are expected to later facilitate with teachers.

Dialogic instruction is implemented through facilitated whole-group discussions, structured questioning/dialogue and small-group discussion. Modelling is implemented as a strategy throughout the programme. Facilitators will demonstrate how to introduce the creativity and critical thinking rubrics, scaffold questioning, structure debriefings, manage uncertainty, provide open-ended discussions and feedback that strengthen creativity and critical thinking.

The creation of artefacts serves both as a mechanism for consolidating learning and as a formative and summative assessment tool. Participants progressively develop and refine various teaching and facilitation resources, including lesson plans and assessment activities aligned with OECD rubrics. They also prepare facilitation activities, and a locally adapted teacher training programme. These artefacts are revisited across sessions and used for discussion and feedback opportunities.

Rubrics are used throughout the training as metacognitive tools. Participants apply them to analyse sample tasks, evaluate draft lesson plans, design assessments, and revise their artefacts. Collaborative learning activities/discussions, such as peer feedback, small-group design challenges, and case discussions, are used as well throughout the programme to support shared professional learning.

Participants will engage in a short micro-teaching session by piloting a selected activity from their locally developed programme. This will allow them to apply and trial their activity and receive feedback. Reflective practices are integrated in every session to ensure that participants are reflecting on their own

learning and practice and to connect to theories discussed so they can adapt their work to their specific local contexts.

Tools: Office 365, translation tools and Zoom.

6. Avaliação

Evaluation will be based on the following requirements:
1. Attendance of at least two-thirds of the sessions
2. Completion of one individual written examination
3. Submission of a lesson plan and assessment design assignment.

Student performance will be assessed using the Portuguese 0–20 grading scale, aligned with the European Credit Transfer and Accumulation System (ECTS) grading framework. The corresponding grade descriptors are as follows: A (Excellent): 18–20; B (Very Good): 16–17; C (Good): 14–15; D (Satisfactory): 12–13; E (Sufficient): 10–11; F (Fail): 0–9.9. Successful completion of the course requires obtaining a final grade equal to or higher than 10 points (E or above). The final grade (0–20 scale) will be determined by the weighted combination of two mandatory assessment components:
- Individual Written examination (40%) – evaluates conceptual understanding and the ability to apply theoretical knowledge to practical or analytical contexts.
- Individual assignment (60%) – requires the submission of a lesson plan and corresponding assessment proposal, demonstrating the student's ability to design coherent learning activities, align objectives and evaluation strategies, and justify pedagogical choices.

Individual Written Examination
Participants will complete an individual written examination composed of multiple-choice questions and short-answer questions.
The examination will assess participants' understanding of:
- OECD Creativity and critical thinking frameworks
- Conceptual understanding of creativity and critical thinking
- Signature pedagogies and facilitation
- Design principles
- Feedback for creativity and critical thinking

Lesson Plan and Assessment Design Assignment
Participants must submit, prior to the final session, a lesson plan and corresponding assessment design integrating strategies for fostering creativity and critical thinking and mapped to the OECD rubrics.
The submission must demonstrate:
- Alignment between objectives, learning activities, and assessment
- Integration of subject knowledge, creativity and/or critical thinking
- Use of OECD rubrics to guide/map learning and evaluation
- Responsible and ethical use of AI (where applicable).

7. Bibliografia (Deve optar apenas por uma norma de referenciação bibliográfica: ex. APA 6ª edição, Vancouver ou NP 405)

OECD (2023*), Supporting Students to Think Creatively: What Education Policy Can Do* by OECD - Issuu, OECD, Paris, https://www.oecd.org/pisa/innovation/creative-thinking/

OECD (2024), *PISA 2022 Results (Volume III): Creative Minds, Creative Schools*, PISA, OECD Publishing, Paris, https://doi.org/10.1787/765ee8c2-en, https://www.oecd.org/pisa/innovation/creative-thinking/.

Shulman, L. (2005), "Signature pedagogies in the professions", *Daedalus*, Vol. 134/3, pp. 52-59, https://www.jstor.org/stable/20027998.

Vincent-Lancrin, S. et al. (2019), Fostering Students' Creativity and Critical Thinking: What it Means in School, *Educational Research and Innovation*, OECD Publishing, Paris, https://doi.org/10.1787/62212c37-en.

Vincent-Lancrin, S. (2021), *Skills for Life: Fostering Creativity*, Inter-American Development Bank, Washington, https://doi.org/10.18235/0003742.

Vincent-Lancrin, S. (2021), *Skills for Life: Fostering Critical Thinking*, Inter-American Development Bank, Washington, https://doi.org/10.18235/0003743

Aprovação em CTC (data):

(parecer)