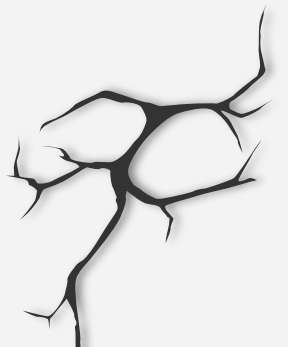





# Informatics/CS Teacher Training in EU

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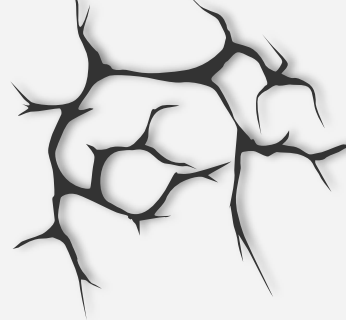
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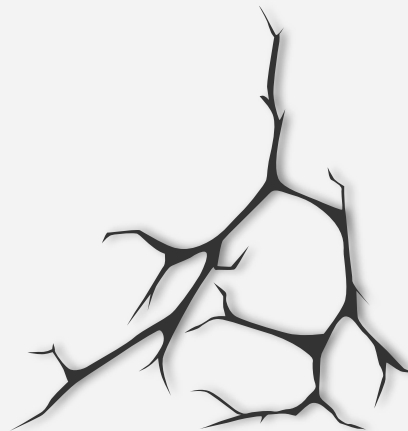
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01

# Introduction

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# Purpose statement



## What is the objective of the research?

- In an increasingly digital world, the role of computer science educators is paramount in shaping the future of technology and innovation. This report aims to delve into the landscape of computer science teacher education across several European countries, exploring the strategies, approaches, and challenges faced by educators in preparing the next generation of tech-savvy professionals.
- By examining the varied methodologies and policies implemented in different educational systems, we seek to identify best practices, potential areas for improvement, and opportunities for collaboration to ensure that computer science education remains robust, inclusive, and adaptable to the evolving demands of the digital era.

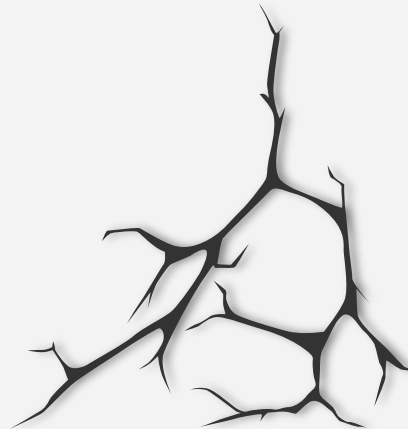
## Data

The data is gathered from CEPIS IE Expert Group members, WoS, and various reports on the Web.

02

# Cases from EU Countries

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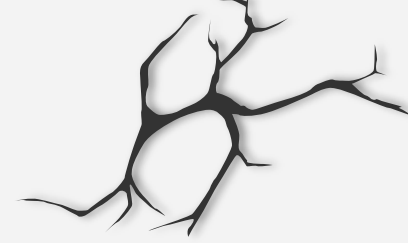


# Germany



- **Programs:** Master of Education (Lehramt) with a specialization in Informatics.
- **Universities:** Numerous universities offer the program, including TU Berlin, TU Munich, RWTH Aachen, University of Hamburg.
- **Curriculum:** Typically includes coursework in computer science, didactics, educational psychology, and subject-specific pedagogy.
- **Accreditation:** Programs require state approval.

# Netherlands



- **Programs:** Bachelor's in Education with a specialization in ICT (Informatie en Communicatie Technologie).
- **Universities:** Universities of Amsterdam, Utrecht, Leiden, Groningen.
- **Curriculum:** Combines computer science with educational theory and practice, focusing on ICT integration in education.
- **Accreditation:** Programs are accredited by the Dutch Accreditation Organization.

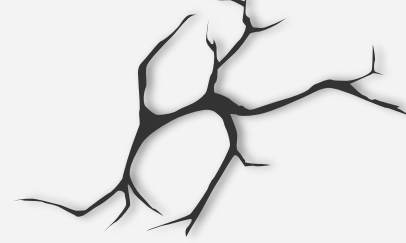
# Austria



- **Programs:** Diploma degree in Teaching Informatics and Economics Education (Lehramt für Informatik und Wirtschaftliche Bildung).
- **Universities:** University of Vienna, Graz University of Technology, University of Klagenfurt.
- **Curriculum:** Covers various aspects of informatics, economics, pedagogy, and didactics.
- **Accreditation:** Programs require national accreditation.



# Slovakia



- **Programs:** Bachelor's degree in Teacher Preparation Program (Comenius University), Master of Education in Informatics (Učiteľstvo informatiky).
- **Universities:** Comenius University, University of Žilina, Matej Bel University.
- **Curriculum:** Focuses on theoretical and practical aspects of informatics, including programming, algorithms, and computer networks.
- **Accreditation:** Programs require accreditation by the Slovak Accreditation Commission.
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# Kosovo



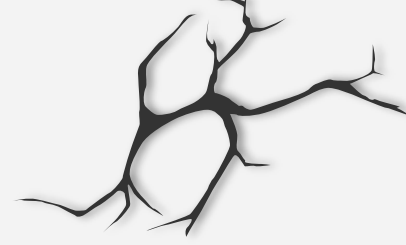
- **Programs:** Bachelor's and Master's degrees in Computer Science Education (Informatika e Aplikuar në Edukim).
- **Universities:** University of Prishtina, University of Mitrovica, University of Gjakova.
- **Curriculum:** Emphasizes computer science fundamentals, software development, and pedagogical skills for teaching informatics.
- **Accreditation:** Programs require accreditation by the Ministry of Education, Science, and Technology of Kosovo.

# Ireland



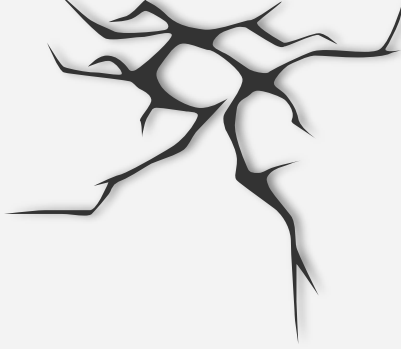
- **Programs:** There are two pathways within Teacher Education to qualify for Informatics (Computer Science) to students aged 11–18.
  - Path1: Degree in Informatics plus a post-graduate certificate in Education (6 modules 180 CATS/year)
  - Path2: 4 year BEd degree in Computer Science as a main or subsidiary subject (4x180 CATS). 200 CATS in Computer Science.
- **Universities:** University College Cork, Dublin City University, National University of Ireland Galway
- **Curriculum:** Blends computer science with educational theory and practice, focusing on innovative teaching strategies for informatics.
- **Accreditation:** Programs require accreditation by the Teaching Council of Ireland.

# Türkiye



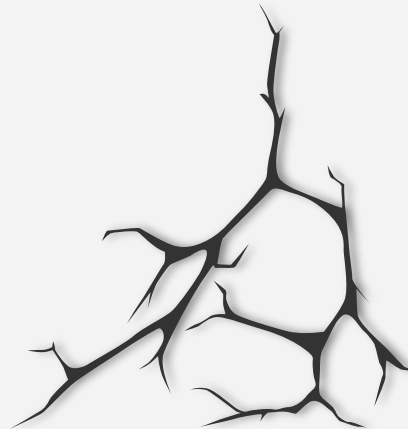
- **Programs:** Bachelor's in Computer Education (Bilgisayar Öğretmenliği) or Master's in Educational Technology and Instruction with a specialization in Informatics (Eğitim Teknolojileri ve Öğretim Anabilim Dalı).
- **Universities:** Numerous universities offer the programs, including Boğaziçi University, Middle East Technical University, Istanbul Technical University.
- **Curriculum:** Covers computer science fundamentals, educational technology, and pedagogical approaches for teaching informatics.
- **Accreditation:** Programs require accreditation by the Council of Higher Education (YÖK).

03

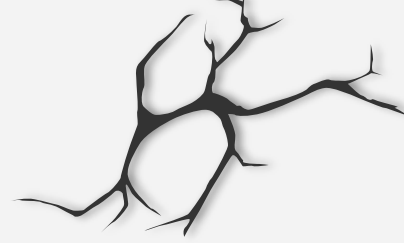


# Comparisons

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# Comparisons



## Similarities:

- Curricula typically include computer science, pedagogy, and subject-specific pedagogy.
- Programs aim to equip graduates with the knowledge and skills to effectively teach informatics in schools.
- Most programs require a Bachelor's or Master's degree.

## Differences:

- Program duration and structure vary across countries.
- Specific course offerings and curriculum emphasis may differ.
- Accreditation requirements and procedures might be distinct.

# ...Comparisons



- The table below gives a comparison of Informatics Teacher Undergraduate programs in some countries represented in the CEPIS IE working group in terms of program duration, total ECTS and distribution of subjects.
- Here, the subjects and related courses are classified as
  - **Pedagogy (P)** courses
  - **General education (GE)** courses
  - **Domain knowledge (DK)** courses and elective courses.
  - For example, Mathematics, Science and Foreign Language courses were evaluated under GE, and courses related to Informatics and Informatics teacher education were evaluated under DK.



University/Dept-Program	#Sem	Degr.	ECTS	P	GE	DK	Elect.	Remarks
METU, Türkiye, Computer Education & Instructional Technology	8	BS	269	69 %26	59 %22	111 %41	30 %11	
Univ. Of Vienna, Austria Teching Education	8	BS	240	36 %15	-	Subject1: 97-107  Subject2: 97-107 %75	12-22  12-22 %10	Education in two school subjects
Comenius Univ., Slovakia Teacher Preparation Prog.	6	BS	180	47 %26	56 %31	55 %31	22 %12	



University/Dept -Program	#Sem	Degr.	ECTS	P	GE	DK	Elect.	Remarks
Germany		BS	180	30 %17	60 %33	90 %50		30 ECTS Teacher training  60 ECTS Secondary subject  90 ECTS core subject
Kosovo	8	BA  MA	240 for pre-primary and primary education  300	%30	%70  Ref. Ed.by B. Shehu, E. Eisenschmidt, F. Kaçaniku, <b>Current practices of teacher education in Kosovo in light of the intended teach professionalism</b> , The Palgrave Handbook of Teacher Education in Central and Eastern Europe, December 2023, Palgrave Macmillan			
Ireland Maynooth U.  U. College of	8	BS  BS	180 + 60 (Education)					

03



# Motivation & RQs

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