NEWSLETTER

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DATA SCIENCE EDUCATION IN STEAM FOR CIVIC ENGAGEMENT AND SOCIAL JUSTICE FROM THE EARLY YEARS

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Welcome to the latest edition of the **DataScEd4CiEn Newsletter**, where we bring you exciting updates on our progress in **integrating Data Science into STEAM education**! Over the past months, our partners have been actively engaged in **teacher training, international conferences, STEAM scenario development, and the launch of the DataScEd4CiEn platform**.

From **professional development courses** to **hands-on workshops** and **collaborative research initiatives**, we are making strides in equipping educators with the tools to foster **data literacy, civic engagement, and problem-solving skills** in students across Europe. As we continue to expand our reach and impact, we look forward to sharing more milestones with you.

Read on for the latest highlights, achievements, and upcoming activities!

Milestone Reached: The DataScEd4CiEn Conceptual Framework

The **DataScEd4CiEn framework** brings **data science into STEAM education**, helping students aged **9-15** develop essential skills in **critical thinking, problem-solving, and civic engagement**. By working with **real-world data**, students learn to analyze information responsibly and apply it to **societal challenges** like climate change, digital privacy, and social inequality.

The framework emphasizes **hands-on learning**, guiding students through **data collection, analysis, visualization, and ethical considerations**. Using **problem-driven learning** and **digital tools** like **CODAP**, **Google Trends**, **Scratch**, and **Python**, students explore data through interactive, inquiry-based experiences. These tools allow them to identify patterns, interpret trends, and develop **data-driven solutions**.

By embedding **data literacy into STEAM education**, the **DataScEd4CiEn project** ensures that students are prepared for a **data-driven future**, fostering both **technical skills and responsible digital citizenship**.

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DATASCED4CIEN PROFESSIONAL DEVELOPMENT COURSE COMPLETED!

The **DataScEd4CiEn Professional Development Course** is now fully developed and has been successfully implemented in **Cyprus, Spain, and Greece**! This training equips educators with the skills to integrate **data science into STEAM education**, fostering **civic engagement and social justice**.

Course Modules:

📌 **Module 1: DataScEd4CiEn Scientific Framework** – Introduction to the project's conceptual framework and data-driven problem-solving in STEAM.

📌 **Module 2: The STEAM Approach in Data Science Education** – Exploring pedagogical models for integrating data science into education.

📌 **Module 3: Toolkit for Implementing Data Science** – Practical resources for analyzing data, designing questions, and using tools like **CODAP**.

📌 **Module 4: Data Science, AI & Ethics** – Understanding AI, machine learning, bias, and ethical considerations in data use.

📌 **Module 5: Designing Educational Scenarios** – Creating classroom applications that align with the national curriculum.

Next Steps

Following the **successful launch in Cyprus, Spain, and Greece**, the next phase will expand to **Ireland and Germany in Spring 2025**, further strengthening **international collaboration** and **teacher training in data science education**.

DATASCED4CIEN ONLINE PLATFORM LAUNCH AND INITIAL USE

The **DataScEd4CiEn platform** is now **live and in use**! Teachers from partner schools have begun exploring its resources as part of the **Professional Development Course**, marking a significant milestone in the project. This **cutting-edge learning environment** supports **STEAM educators** by providing access to **educational materials, interactive tools, and collaborative spaces** for sharing ideas and best practices. As more educators join and contribute content, **WP5** will continue to expand—becoming a central hub for **Data Science in STEAM education** across Europe.

Stay tuned as we **empower teachers** to bring **data-driven learning** into their classrooms!

Archives: Courses

Module 5: Applying The DataScEd4CiEn Approach In The Classroom And Aligning It To The Curriculum

READ MORE →

Module 4: Machine Learning & AI – Data Science Education For Ethical Use & Active Citizenship

READ MORE →

Module 2: Introduction To Data-Centered STEAM Education

READ MORE →

Module 3: A Toolkit To Implement The DataScEd4CiEn Approach In The Classroom And Aligning It To The Curriculum

Module 1: The DataScEd4CiEn Conceptual Framework

READ MORE →

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PROGRESS ON STEAM SCENARIO DEVELOPMENT

Exciting progress is underway as partner schools design and implement the pilot STEAM scenarios that integrate data science, problem-solving, and civic engagement! These real-world projects empower students to analyze data and address pressing global challenges.

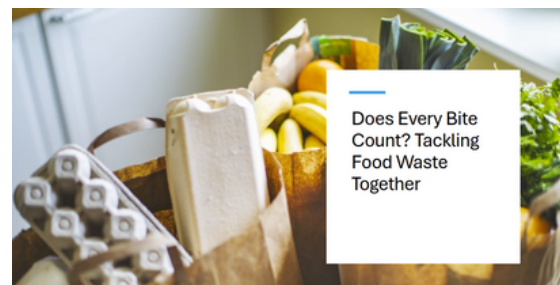📍 La Salle – Buen Consejo (2024-2025)

◆ **"Economy and Justice: Poverty"** (Ages 9-10) – Exploring economic disparities and social justice through data analysis.

◆ **"Design Thinking: Droughts! No?"** – Investigating water scarcity and environmental sustainability using a project-based approach.

📍 The English School, Nicosia (2024 2025)

◆ **"What is the True Cost of Your Clothes?"** – Analyzing the social and environmental impact of fast fashion with Year 2 students.

◆ **"Every Bite Counts: Let's Tackle Food Waste Together"** – A hands-on food sustainability and waste reduction initiative.

What is the true cost of your clothes?

Does Every Bite Count? Tackling Food Waste Together

2ND TPM MEETING IN ATHENS – 27TH SEPTEMBER, 2024

The **DataScEd4CiEn** consortium gathered at the **National and Kapodistrian University of Athens** for the **2nd Transnational Project Meeting (TPM)** to review progress, align strategies, and refine the project's implementation.

Key Highlights:

◆ **Project Management & Administration** – EUC provided updates on administrative processes and the interim report.

◆ **Scientific Framework for Data Science Education** – MIC led discussions on structuring data science integration in schools.

◆ **Teacher Professional Development Course** – WWU introduced strategies for strengthening educators' data literacy.

◆ **STEAM Scenarios for Civic Engagement** – LSBC & ES presented learning activities connecting data science to social justice.

◆ **DataScEd4CiEn Platform & Toolkits** – EUC showcased digital resources supporting data-driven education.

◆ **Research & Evaluation** – NKUA outlined methods to assess the project's educational impact.

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JOINT STAFF TRAINING IN ATHENS – EXPLORING DATA SCIENCE & STEAM FOR EDUCATION

On **September 25-26, 2024**, the **DataScEd4CiEn** partners gathered at the **National and Kapodistrian University of Athens** for a **Joint Staff Training Event**, engaging in **theoretical insights, hands-on activities, and collaborative discussions** on integrating **data science into STEAM education**.

Day 1: Foundations & Digital Tools
◆ **Civic Engagement & Social Justice** – Identifying societal issues and formulating data-driven questions.
◆ **STEAM Pedagogy** – Exploring design thinking and project-based learning for classroom engagement.
◆ **Introduction to Data Science** – Learning data management and cleaning techniques.
◆ **Digital Data Exploration** – Hands-on **CODAP** training for data visualization.
◆ **STEAM Scenario 1: Poverty** – Applying data analysis to understand economic disparities.

Day 2: STEAM Scenarios & Classroom Application
◆ **STEAM Scenario 2: Climate Change & Drought** – Interactive learning on environmental challenges.
◆ **Classroom Adaptation** – Refining and implementing STEAM scenarios for schools.
◆ **Reflection & Next Steps** – Discussing future applications and project goals. This training strengthened **teacher capacity** for **data-driven, problem-based learning**, enhancing **STEAM education** and **civic engagement** in classrooms across Europe!
◆ **Quality Assurance & Evaluation** – EUC & NKUA shared strategies for maintaining high project standards.
◆ **Dissemination & Communication** – ES presented outreach plans to engage educators and stakeholders.

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FIRST DATASCED4CIEN PROFESSIONAL DEVELOPMENT DAY AT COLEGIO LA SALLE-BUEN CONSEJO

On **November 26, 2024**, **Colegio La Salle-Buen Consejo** hosted its **first DataScEd4CiEn training session**, led by **Ana Serradó Bayés and María Lucia Vargas**. This session introduced the **theoretical framework** of the project, emphasizing the role of **data science in STEAM education**.

Teachers engaged in **discussions on key data science concepts** and explored **practical ways to integrate them into classroom learning**. This marks a significant step in empowering educators to **enhance student engagement** through **data-driven, real-world problem-solving**.

DATASCED4CIEN PROFESSIONAL DEVELOPMENT COURSE IN ATHENS, GREECE

The DataScEd4CiEn professional development course was successfully implemented at the **1st Gymnasio of Vyrona in Athens, Greece, with the support of the National and Kapodistrian University of Athens (NKUA)**. Between **December 2024 and March 2025, 12 teachers** from a range of disciplines—including languages, informatics, mathematics, technology, and religion—engaged in five training modules focused on integrating data science education in STEAM, with an emphasis on civic engagement and social justice. The sessions were facilitated by NKUA teacher educators and supported by postgraduate students. Special thanks to **Dr. Chryssavgi Triantafillou and Dr.Dionysia Bakoyianni** for their excellent coordination.

DATASCED4CIEN PROFESSIONAL DEVELOPMENT COURSE AT THE ENGLISH SCHOOL

On **February 24-25, 2025**, **The English School** hosted the **DataScEd4CiEn Professional Development Course**, bringing together **STEAM coordinators from Science, ICT, Design & Technology, Geography, PSHCE, and Mathematics**. Led by **Dr. Maria Meletiou-Mavrotheris (EUC), Mr. Michalis Gavrielides (The English School), and Mrs. Leoni Hadjithoma (The English School),** the **12-hour training** covered all five course modules:

📌 **Module 1:** DataScEd4CiEn Scientific Framework
📌 **Module 2:** Data-Centered STEAM Education
📌 **Module 3:** Toolkit for Implementing the DataScEd4CiEn Approach
📌 **Module 4:** Machine Learning & AI for Data Science Literacy
📌 **Module 5:** Applying DataScEd4CiEn in the Classroom

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EVENTS/NEWS/PRESENTATIONS:

On **8th July, 2024**, members of **Team Münster** attended **ICME14** in **Sydney, Australia**, where they participated in a **discussion group on Teaching Data Science and professional development**. Originally planned as a workshop, the session evolved into a dynamic exchange of **ideas, challenges, and best practices** after the scheduled presenter did not arrive. This unexpected discussion fostered **connections with researchers and projects like ESTEEM,** reinforcing the **growing global interest in Data Science education** and its role in teacher professional development.

Dr. Yianna Danidou from European University Cyprus (EUC) presented the DataScEd4CiEn project at the 1st Interdisciplinary Symposium of the International Digital Economy College on 10th July, 2024. Held in a hybrid format at EUC, the event focused on digital economy and education. Her presentation highlighted the project's role in integrating data science into STEAM education for civic engagement.

On 9th September, 2024, Prof. Dr. Daniel Frischemeier (University of Münster) conducted a 90-minute teacher workshop titled "Focusing on Data and Probabilities" at DoMath 2024. With 30 teachers in attendance, the session explored strategies for integrating data and probability concepts into primary mathematics education. Early ideas from the DataScEd4CiEn professional development program were introduced, providing valuable insights for enhancing data literacy in the classroom.

From September 10-13, 2024, colleagues from the DataScEd4CiEn project participated in the MSc Mathematics Education Summer School in Halkida, organized by the National and Kapodistrian University of Athens. They led a working group on the project's goals, philosophy, and materials, engaging secondary school teachers and mathematics education researchers in discussions and collaboration. The event generated great enthusiasm, paving the way for upcoming teacher training in schools.

On **15th November, 2024**, an **introductory workshop** on the **DataScEd4CiEn project** was held at **The English School**, introducing teachers to its **core concepts and methodology**. The session was attended by **45 staff members** from various departments, including **Mathematics, Science, Geography, History, ICT, and the Arts**. Led by **experts from EUC and The English School**, the workshop covered the project's **scientific framework** and hands-on **CODAP activities**, highlighting ways to **integrate data science across subjects**.

On **17th December, 2024**, **Karlstad University** in Sweden hosted **ROSE Day**, an annual seminar on **subject-specific education**. Representing **DataScEd4CiEn**, **Dr. Dionysia Bakogianni (NKUA)** presented the project's **focus, objectives, and progress** to researchers from **Geography, Biology, Mathematics, Physics, and Language**. The event fostered **interdisciplinary dialogue** and strengthened collaboration on **data science in education**.