

# Extending Design Thinking with Emerging Digital Technologies

## Newsletter

April, 2025

The Exten.(D.T.)2 Newsletter - April Issue includes reporting on the latest project meeting in Athens, the launch of an OpenLearn Create online course for teachers on "Teaching design thinking with digital technologies, details about the consultation on the Exten.(D.T.)2 framework, the evaluation and development of Authorable Learning Analytics, and Year 3 school interventions involving students in design thinking activities across multiple countries.

### The latest Exten.(D.T.)2 project meeting in Athens

The bi-annual hybrid Exten.(D.T.)2 meeting was held at the National and Kapodistrian University of Athens (NKUA), Greece, from 19-21 March. Attendees included partners from LNU (Sweden), NKUA and Simple (Greece), the OU and UCL (UK), NTNU (Norway), UGhent (Belgium), and TCD (Ireland). The project team discussed strategies to meet key performance indicators (KPIs), the design of an OpenLearn Create course about design thinking, the current status of school interventions, the design of a learning analytics dashboard, project technologies, and professional development activities. A roadmap for publications and other dissemination activities, both during and after the project lifecycle, was also discussed.

In one of the sessions, teachers from Sweden, Greece, and Belgium shared their experiences of developing design thinking projects. They emphasized how design thinking projects using emerging technologies have enhanced students' creativity, critical thinking, and collaborative teamwork skills.



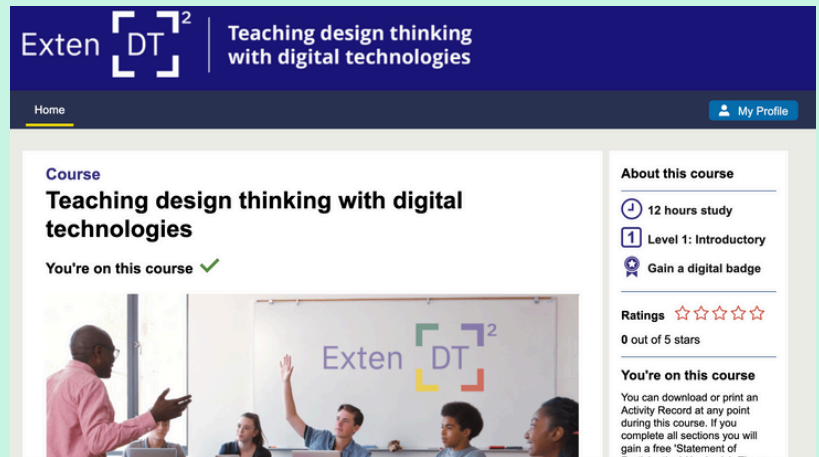
*The project team at NKUA*



*A school teacher from Sweden sharing his experiences of using design thinking activities with students*

## The Project's online course has launched

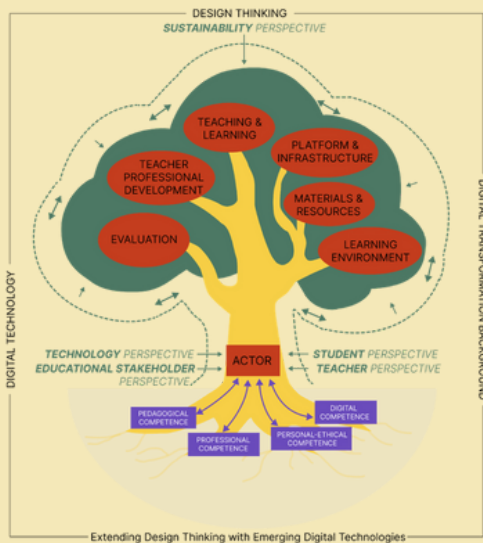
The online course "Teaching design thinking with digital technologies" is aimed at teachers or tutors at any level of education including primary, secondary, further and higher education and other interested educational stakeholders. This is a free online course, hosted on the Open Learn Create platform, owned by the OU, that focuses on helping educators to understand what design thinking is and how it can be used with students with the support of a suite of digital technologies, which enable easy and effective implementation in both a physical and an online setting.



A screenshot of the OpenLearn Create online course

The course requires 12 hours of study. You can join the course here: [www.open.edu/openlearncreate/ExtenDT2](http://www.open.edu/openlearncreate/ExtenDT2)

## Consultation with educational stakeholders on the Exten(DT)2 framework



The tree metaphor used in the Exten.(D.T.)2 framework

The Exten.(D.T.)2 framework identifies crucial elements in relation to the implementation of design thinking supported by emerging digital technologies. It is developed to help teachers, educational designers, policymakers, and all involved educational stakeholders who may be interested in incorporating DT and ET into their practices. The Exten.(D.T.)2 project team has been working closely with stakeholders to improve the framework and associated guidelines. The latest round of consultations involved over 39 participants from across partner institutions that gave feedback and helped to refine and enhance the framework and associated guidelines. This effort aimed to make the materials more comprehensible, actionable, and suitable across diverse educational contexts.

We continue to refine the framework and associated guidelines and we would welcome your feedback. You may take a few minutes to complete our short survey: <https://nettskjema.no/a/456749> (approx. 5 minutes)  
Thank you for contributing to this important work!

## Evaluation and development of Authorable Learning Analytics

Authorable Learning Analytics is the measurement, collection, analysis and reporting of data about learners and their contexts which mostly teachers can author by entering into a learning analytics dashboard. A comprehensive evaluation workshop was held with 20 EdTech experts to assess current authorable analytics tools and guide future development. The workshop used task-based activities and a think-aloud protocol, with participants working individually or in groups.

To address the need for more granular data interpretation and user-friendly design, two intervention studies were conducted:

**Intervention 1 – Expert workshops**

Workshops in Athens and Trondheim focused on creating translation mechanisms between learning tool events and 21st century skills:

Athens: In-person workshop with four experts using physical materials and collaborative tasks

Trondheim: Online session with two experts using Miro boards

Both workshops aimed to develop GUI specifications for the Authorable Learning Analytics (ALA) engine, using simulated data and interface evaluation.

**Intervention 2 – Teacher workshops**

Workshops with teachers were held to co-design the analytics dashboard interface:

Athens: Face-to-face session with nine teachers in small groups, supported by facilitators

Trondheim: Online session with five teachers using a dashboard prototype

Teachers provided feedback through hands-on interaction and open-ended reflections, emphasizing the importance of an intuitive, accessible interface that supports non-expert users.

The findings underline a strong demand for expressive yet easy-to-use analytics tools, particularly for educators without technical backgrounds.

**School interventions in Y3**

Our school-based interventions have so far engaged 978 students across 23 schools in seven countries, implementing 36 design thinking activities with emerging technologies. These projects address real-world socio-scientific issues and aim to foster students' 21st century skills, such as creativity, collaboration, and problem-solving in meaningful educational contexts.

In the interventions that have been implemented in Greece by NKUA, high-school students designed digital games about gender equality, healthy nutrition and recycling, as well as 3D printed models to be used as personalised electronic storage equipment in order to prevent e-waste. In collaboration with the OU, schools in the UK engaged students in the design of digital games about climate change, while in the interventions run by TCD and Learnovate in Ireland, students designed digital games about sustainability and prevention of hunger through sustainable soil cultivation. Students in Sweden designed games about media consumption and sustainability with support from LNU researchers. In Norway, NTNU collaborated with teachers to implement projects focused on traffic management solutions and robotics-based simulations raising cyber awareness.



*Students designing personalised key holders*

During these school interventions, teachers monitor and reflect on student engagement by using an Authorable Learning Analytics dashboard accessed through the Exten.(D.T.)2 platform. The dashboard offers valuable insights to teachers about how learners interact with emerging technologies in authentic contexts.

We are inspired by the strong engagement of school communities in the co-design and implementation of Design Thinking activities with emerging technologies! Stay tuned for more updates and insights from the Exten.(D.T.)2 school interventions!



*Students playing and designing embodied digital games about clothes recycling*



*Students discussing the questionnaires made for gender equality issues*



*Students reviewing 3D printed models*

### **Presentation and participation in academic events**

Sagun Shrestha from the OU presented a paper on 'Promoting 21st Century skills in UK School Students through Design Thinking with Emerging Technologies' in a session organised by The Open University's CALRG (Computers and Learning Research Group) on 24 April.

Isabella Possaghi representing the NTNU team will be participating in the upcoming EDUCON 2025 conference that takes place on 22 - 25 April.

On behalf of the Exten(DT)2 project, Sokratis Karkalas will be leading the workshop, 'Integration of Emerging Technologies into Education and Training (ETELT)' in mis4TEL conference taking place in the University of Lille, France between 25 and 27 June, 2025.

### **Upcoming publication**

Isabella Possaghi, Feiran Zhang, Kshitij Sharma, and Sofia Papavlasopoulou have co-authored a paper entitled: 'Fun Until the Limits: Students' Perceptions of Design Thinking Projects with Digital Tools' which is due to appear on the proceedings of the 2025 IEEE Global Engineering Education Conference (EDUCON).