European R&I and Digital Learning
Overview and orientations

EC-TEL 2016
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European Commission
DG CONNECT
Unit G3 "Learning, Multilingualism & Accessibility"

EUROPEAN COMMISSION
HORIZON 2020
H2020
ICT Work Programme 2016-2017
Call 1 results
What was the challenge?

Technologies for learning and skills (ICT-22)
Gaming and gamification (ICT-24)

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What was the challenge?

Technologies for learning and skills (ICT-22)
Gaming and gamification (ICT-24)
Learning and skills: ICT-22-IA

- Open, interoperable components / cloud-based digital learning infrastructure / primary and secondary education / personalised, collaborative or experimental learning
- One or several of the following areas:
  - easy creation, mix and re-use of content, services, applications and contextual data for interactive learning processes
  - environments for new learning experiences and experimentation
  - educational support services
- Clearly defined learning context
- Dynamic real-time assessment of learner's progress
- Tested through very large pilots
Learning and skills: ICT-22-RIA

- Deeper learning of Science, Technology, Engineering, Mathematics combined with Arts (STEAM) / innovation and creative capacities of learners / new role of teacher as a coach
- Foundational research and/or component and system level design with pilot testing / real-life intervention strategies / new enabling technologies
Gaming and gamification: ICT-24-IA

- Technology transfer / small scale experiments / developing and validating open gaming technologies and mechanics / non-leisure situations and scenarios / training and motivational purposes.
- Gaming technologies / learning and behavioural triggers / social science aspects
**Work programme 2016-2017**  
**H2020 Call 1 - results**

- **15 April 2016 18:58**

Submission of proposals to 20 topics in this call closed on 12 April 2016. A total of 1080 proposals were submitted in response to these topics. The breakdown per topic and type of action is as follows:

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ICT-22 had the highest submission rate of the entire call:  
- 13% of total  
- 142 proposals out of 1080
Work programme 2016-2017
H2020 Call 1 - results

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ICT-22-RIA: Selected for negotiation
ICT-22-RIA (1/4)

1. Multisensory development, Arithmetic, Geometry, Music, Drawing, Serious Games, Social interaction, Multi-sensory technology, Embodiment, Affective computing

2. Based on the renewed neuroscientific understanding of the role of communication between sensory modalities during development: specific sensory systems have specific roles to learn specific concepts

3. Learn arithmetical concepts from multisensory rhythm exploration and music and geometrical concepts from body movement and multisensory drawing

4. Multisensory technology and three serious games

5. Application to typical children and visually impaired (space and geometry) and dyslexic (rhythm)

6. 24 months, 9 partners
ICT-22-RIA: (2/4)

1) Physics, Geometry, Mathematics, Technology and Music for secondary school students (aged 12-16);
2) 3D design environment for personalized virtual musical instruments, advanced music generation and processing technologies to apply and interpret related physics and mathematics principles
3) Gesture and pen-enabled multimodal interaction functionality for music co-creation and performance, 3D printing for realizing the actual/tangible physical instrument.
4) Suite of interdisciplinary project/problem based educational scenarios for STEAM for creativity and deeper learning
5) Pilot-tested and evaluated in Belgium, Greece and France
6) 30 months, 8 partners
1) **Storytelling**, e-books, deeper learning students profiles in STEAM, technology-enabled science education, student-driven learning, Virtual & Augmented reality, 3D printing, creativity

2) **Interactive e-books for 10-12 years olds** through a platform for children's artistic expression and scientific inquiry / advanced interfaces to augment characters, buildings / detecting and tracking outcome

3) Tested in Germany, Greece, Portugal, France, Finland, Japan with 3000 students

4) **Novel cooperation** between creative industries and electronic publishing, educational research institutions in the field of STEM, schools and informal learning centres

5) 30 months, 15 participants
1) Research, design, pilot and validate an ecosystem based on digital fabrication

2) Technologies for creating computer-supported artefacts to reinforce personalised learning and teaching in science, technology, engineering, arts and math and to development of 21st century skills

3) Formal and informal learning by providing the appropriate digital fabrication, making technologies, programming tools and mechanisms for personalised and adaptive learning.

4) 24 months, 12 participants
ICT-22-IA: Selected for negotiation
ICT-22-IA: (1/4)

1) Hybrid formal and informal learning, Project based learning, Peer-to-peer learning, Student skills, Teacher trainings, Secondary schools (11-19 yrs olds)

2) Bridging the gap between secondary schools and higher education and research, better integration of formal and informal learning scenarios, adapting technology and methodology to those used in universities.

3) Intersection of formal and informal spaces, a dynamic hybrid learning environment where synchronous activities meet in both virtual and real dimensions.

4) Open, more effective and efficient co-design, co-creation, and use of digital content, tools and services adapted for personalised learning and teaching of high school students preparing for university.

5) 36 months, 18 participants
ICT-22-IA: (2/4)

1) Scalable, cloud-based software infrastructure of open, interoperable components, including real-time user modelling and domain knowledge components, to support children's reading skills.

2) Domain models for English, Greek, German and Spanish (i) typically developing readers, (ii) English and Greek readers with dyslexia and (ii) learners of English as a Foreign language.

3) Orchestrated applications for supporting learning (literacy games, interactive e-books, Reader app) for personalised learning services and experiences, learning analytics, personalised content classification metrics that “enable reading” for use by electronic publishers and libraries.

4) Large-scale evaluation pilots across European countries.

5) 48 months, 17 partners.
ICT-22-IA: (3/4)

1) Collection of interactive online (virtual and remote) laboratories that can be combined by mixing and re-use / dedicated support tools and multimedia materia / open, cloud-based, shareable educational resources with an embedded pedagogical structure.

2) Localisation and personalisation / analytics facilities for monitoring progress / co-creation with users in combination with rapid development and testing cycles.


4) Primary and secondary education / pre-service teacher training programs

5) Very large-scale pilots with in-depth, qualitative, case-based, assessments.

6) 36 months, 12 participants
1) Digital learning ecosystem for guided acquisition, evaluation and certification of digital competences in primary and secondary education, scalable to other educational levels.

2) Adaptive learning solution / supported by advanced pedagogical methodologies and technologies / tested with 25,000 students and over 2,000 teachers

3) Support schools and educational institutions in the definition and creation of a curricular programming

4) New learning experiences and methodologies / creative and motivating use of technologies / minimizing the distance btw. digital competences acquired at school and needed for labour market.

5) Learning analytics module for unique student ICT Dynamic Profile

6) 36 months, 14 partners
ICT-22-IA: Selected for negotiation
ICT-24-IA: Gaming and gamification

- 12 proposals selected for negotiation
- 5 main areas:
  - learning
  - social inclusion
  - citizens' participation
  - behavioural change
ICT-24-IA: Selected for negotiation

Learning

1) Innovative gamification framework targeting both typical as well as special education and social inclusion activities based on Serious Games. Potential of the IoT paradigm to directly link actions, decisions and events happening in real-life with in-game educational progress.

2) Pioneering the use of mainstream PlayStation VR technologies for innovative educational applications which engage world-wide audiences in the Europe’s rich historical and scientific heritage.

3) Solution towards optimizing the learning process in virtual labs and therefore maximize their impact in education. Migration of knowledge from the neighbouring domain of digital games to reach its objectives.

4) Serious game-based training platform, in order to train professionals across the agricultural value chain on the use of Smart Farming Technologies (SFT), thus allowing deploying its full economic and environmental potential in European agriculture.
ICT-24-IA: Selected for negotiation

Social Inclusion

1) Disruptive and innovative game-based intervention, relying on agent-based game mechanics that incorporate learning schemes for mental and motor skill acquisition and behavioural change. It will be tested for ADHD management.

2) Online service platform to personalise games to enhance the living adjustment of people with Cerebral Palsy (CP) avoiding a gamification process where one fits for all.
ICT-24-IA: Selected for negotiation

Citizens' participation

1) Based on scientists in all fields increasingly relying on active public participation for experiments and analyses of complex and/or massive data, and the outreach and education possibilities of citizen science, to develop and validate a reference platform enabling the injection of scientific tasks into on-line communities, such as gamers.

2) Develop, validate and demonstrate a gaming and social network platform for educating energy consumers and virtual energy communities towards evolving EU energy markets’ operation.

3) Innovative and interactive Serious Games platform that will empower and guide users to adopt an eco-friendly driving style.
ICT-24-IA: Selected for negotiation

Behavioural change

1) Platform to fosters an ecosystem of games and applications that help people stay motivated to lead **socially engaged, physically and cognitively active lifestyles.**

2) An **exergame** which requires movement to be played, and can have great potential to promote **energy-related behaviours** (physical activity, sedentary behaviour) especially among adolescents and those of lower socio-economic status.

3) Test a methodology that includes several models for **game development methodology combined with Applied Behaviour Analysis and Learning Analytics** in order to design serious games able to promote behavioural changes in the user.
Towards 2017
Where do we stand?
No new call on learning in 2017
Other activities and funding possibilities
Assistive technologies, anyone?

**ICT-23-2017: Interfaces for accessibility**

- Intelligent, affordable and personalised interfaces and affective computing for people with cognitive disabilities (RIA)
- Solutions, models and algorithms to improve (and act upon) information extraction from brain and neural signals, including through advances on state of the art electrodes and implantable devices (RIA)
- develop and demonstrate decision support tools for the assessment of compliance to websites accessibility standards and guidelines (IA)
- **RIA 10 mio € / IA 4 mio €**
Pilot projects (PP) and Preparatory Action (PA) of the European Parliament

- **Pilot project**: an initiative ‘of an experimental nature designed to test the feasibility of an action and its usefulness’

- **Preparatory action** - normally the successor of a successful pilot project on the same matter - is designed to prepare proposals with a view to the adoption of actions like EU policies, legislation, programmes etc.

- Funded from EU budget, not H2020 budget

- Proposed by the Members of the European Parliament

- Executed by the Commission
PPs and PAs in 2016

In negotiation:

• (PP) Open Knowledge Technologies: Mapping and validating knowledge “Digital up-skilling platform for European young unemployed” (2 mio €)

To be published:

• (PP) Employability skills for citizens at risk of exclusion, in particular migrants, by matching the interests and the current knowledge of these with the most demanded labour market skills and suggest possible learning roadmaps (1,5 €)

• (PP) Digital tools for children with attention deficit and hyperactivity disorder (400K)
PPs and PAs in 2017

Tentatively in 2017:

• European platform on vulnerable people in the Information Society: mapping best practices and socio-economic impact for the empowerment of vulnerable communities through ICTs (PP)

• Application of web accessibility requirements in web-authoring tools and platforms by default (Web Access By Default) (grant to support pilot projects)

• Open Knowledge Technologies: Mapping and validating knowledge (PA, follow up)

• Framework of best practices to tackle child sexual abuse online (PP)
Where are the PPs and PAs published?
Studies procurement (ongoing)

- **Satellite Broadband** in Schools Feasibility Study - SMART 2015/0061
- **2nd Survey of Schools**: ICT in Education SMART 2015/0071
- Feasibility study on cross-border use of eID and authentication services (eIDAS compliant) to support student mobility and access to student services in Europe – SMART 2016/0064
Where to find calls for tenders?
Some key policy documents

- **Digitising European Industry** - Reaping the full benefits of a Digital Single Market (COM(2016) 180 final)

- **A New Skills Agenda For Europe** - Working together to strengthen human capital, employability and competitiveness (COM(2016) 381 final)
Last but not least...
Appointment of Marco Marsella as Head of Unit CNECT.DDG2.G.3 "Learning, Multilingualism & Accessibility"

Created 2 months ago by Julia GURAU in CONNECT Organisation Chart

R1 is pleased to announce that Marco MARSELLA is appointed as of 16 July 2016 to the post of Head of Unit in DG CNECT.DDG2.G.3 "Learning, Multilingualism & Accessibility" following publication of the vacancy notice COM/2016/234. We wish him all the best in his new function.
Thank you!

LIINA MUNARI
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Technology-enhanced learning

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