Workshop 3 – Games and Tools for Programming

Session 3: Learning programming with games and stories

**Expected Learning Outcomes**

* Recognise the meaning of Computational Thinking (concepts, practices, perspective) development
* Understand the role of Scratch community and the process of creation in the Scratch community
* Find, analyse and compare different examples of games and digital stories in Scratch
* Change and remix a story/game

**Teaching Methods/Approaches**

* Teacher presentation and demonstration
* Discussion
* Individual activity
* Group activity - collaboration

**Sources of Training Materials**

* ScratchEd teaching resources: <http://scratched.gse.harvard.edu/resources/all> (4.1.2019.)
* Computational Thinking with Scratch-developing fluency with computational concepts, practices and perspectives: <http://scratched.gse.harvard.edu/ct/defining.html> (4.1.2019.)
* Brennan, K. A. (2013). Best of both worlds: Issues of structure and agency in computational creation, in and out of school(Doctoral dissertation, Massachusetts Institute of Technology), <http://hdl.handle.net/1721.1/79157> (4.1.2019.)
* Brennan, K., Balch, C., Chung, M. (2014). *Creative Computing*. Harvard Graduate School of Education. Retrieved from <http://scratched.gse.harvard.edu/guide/files/CreativeComputing20140806.pdf> (4.1.2019.)
* Brennan, K. (2015). Beyond right or wrong: Challenges of including creative design activities in the classroom*. Journal of Technology and Teacher Education*, 23(3), 279-299. Waynesville, NC USA: Society for Information Technology & Teacher Education, <https://www.learntechlib.org/primary/p/151249/> (4.1.2019.)
* CS First, <https://csfirst.withgoogle.com/en/home> (4.1.2019.)

 **Duration:** 2 hours (90 minutes)

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| **Topic/Sub-topics** | **Learning Objectives** | **Evaluation** |
| **1. COMPUTATIONAL THINKING (CT)** | *Participants will be able to recognise the meaning of CT and to identify its concepts, practices, and perspectives.* | Learners give examples of computational thinking development from their practice and describe the computational thinking dimensions: concepts, practices, and perspective. |
| 1.1. Introduction to Computational Thinking concepts | Describe the meaning of CT  |
| 1.2. Practices and perspectives of CT | Identify the concepts, practices, and perspectives of CT development |
| **2. COMPUTATIONAL THINKING DEVELOPMENT WITH SCRATCH**  | *Participants will be able to understand the role of Scratch community and identify existing digital stories and games for the development of CT.* | Learners will search Scratch projects  (games and stories) with own keywords, “run” the game and explain some functionalities, remix games and stories.Learners will explore and analyse others’ projects of stories/games in Scratch.Learners will create a studio, add a project and think how to “unstuck” while developing Scratch projects with the support of community. |
| 2.1. Scratch community | Explore the Scratch community and the process of creation in the Scratch community |
| 2.2. Scratch for creating games and stories | Change and remix existing digital stories and games in Scratch for different didactic purposes |
| 2.3. Workshops for developing games and stories  | Analyse the presence of computational thinking concepts in the Scratch projects (stories and games) and workshops. |