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. |