Interreg CENTRAL EUROPE
European Union
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FabLabNet

PILOT ACTION EVALUATION

DT252 - PP9 - Partner Report on Pilot 3
Workshops 18.10.2017., 25.11.2017. 07.12.2017.

Version 2
05 2019

1. Short overview of the Pilot Action

Pilot Action related to education is organized in collaboration with associated partner Primary school Borovje, and with Primary school Lovro pl. Matacic both in Zagreb. Therefore all activities were targeted children in schools, 6-7y to 14-15y. Over 80 childrens were involved in those workshops, not only from those schools, but also from other schools and even kindergarten.
Idea was to offer hands on experience with various digital tools which can be use to bring their ideas to tangible objects.

The pilot 3 workshops was composed by three different course:

1. **Workshop 1: Make-a-Tie**, 18/10/2017 (National Tie Day) - activity were made for around 40 childrens on National Tie Day. Intention was to bring together at least two subject, art and technical subject, and including informatics teacher.

2. **Workshop 2: Mobile Pets**, 25/11/2017, as part of Knowledge Chain initiative - using 3D printers in school for their projects was topic of second workshop. We engage teachers from biology, geography and technical subjects to work together.

3. **Workshop 3: Build LED Lamp**, 07/12/2017, as part of Science Night workshop was even more ambitious. Children should design lamp case in TinkerCad for 3D print, but also make simple electric circuit, consist of battery, switch, resistor and LED lamp. Technical subject teachers from two schools work together on this workshop with around 20 childrens.

Workshop 1: Make-a-Tie, 18/10/2017 (National Tie Day)

First Pilot activity were made for around 40 childrens on National Tie Day. Intention was to bring together at least two subject, art and technical, and including informatics teacher. After shart theoretical background children made individual drawing on Tie topic, and follow procedure to digitize, trace image, cut with vinyl cutter to get cutted designs which then were transferred to their T-Shirts.






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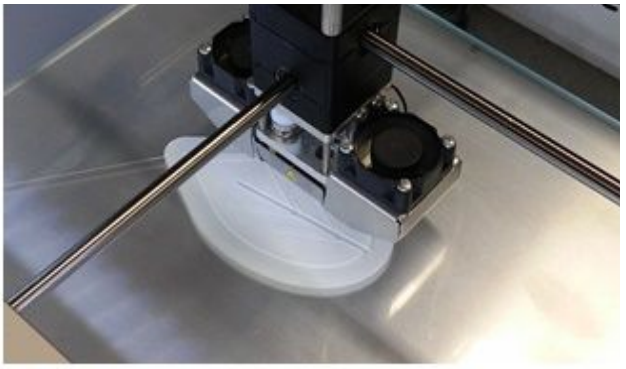
Workshop 2: Mobile Pets, 25/11/2017, as part of Knowledge Chain initiative

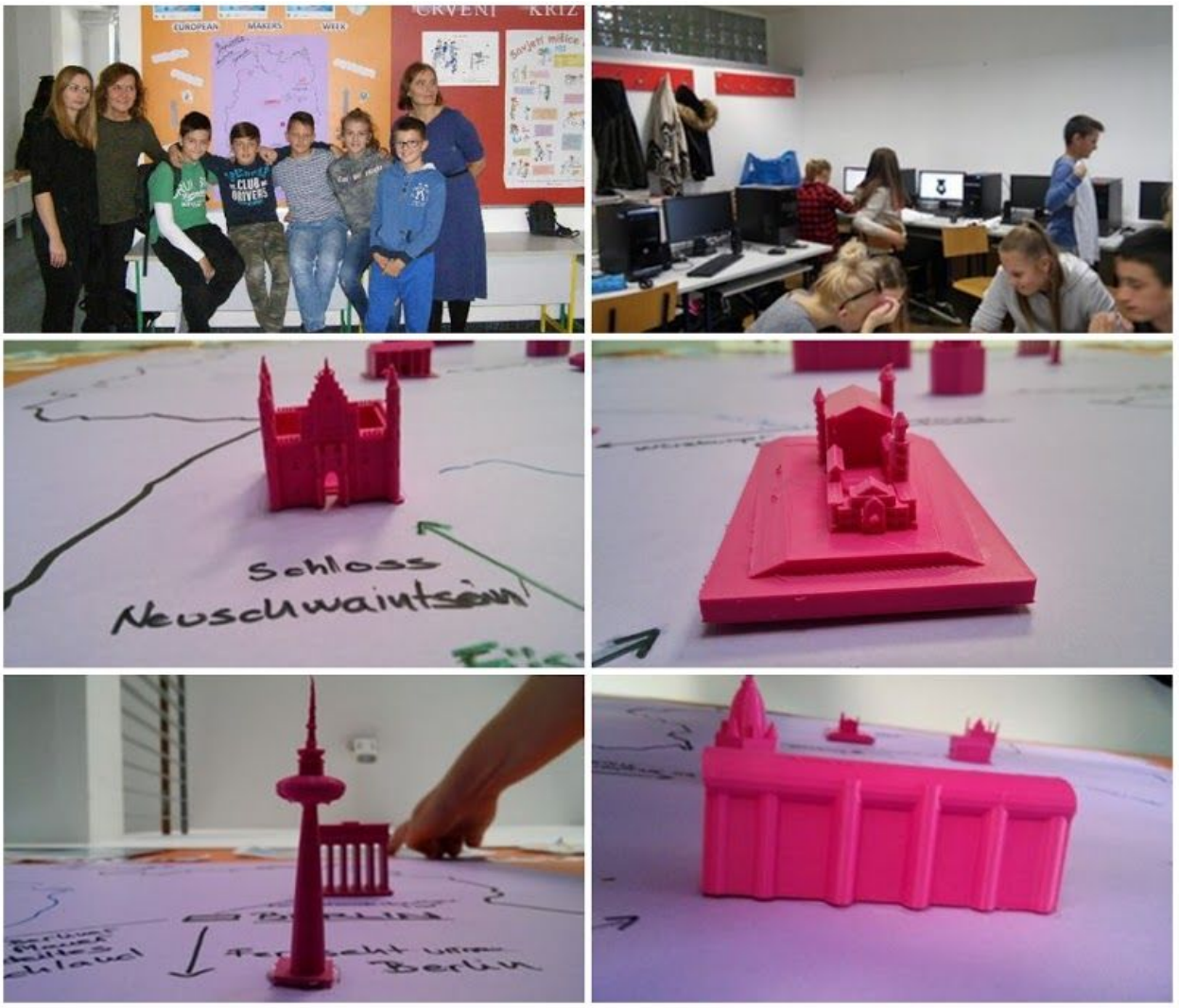
Using 3D printers in school for their projects was topic of second workshop. Either for pets or for buildings, kids use TinkerCad and SketchUp as 3D modeling tools, and 3D print their models as part of the workshops. Same intention like in previous workshop, here work together, teacher from biology, geography and technical subjects.

After short introduction and theoretical background,kids build their 3D models, and use 3D printer to print them. Both 3D modeling and 3D printing was assisted with few students from Faculty of Architecture, as part of Knowledge Chain initiative where we bring students from university to mentor and work together with primary school pupils.



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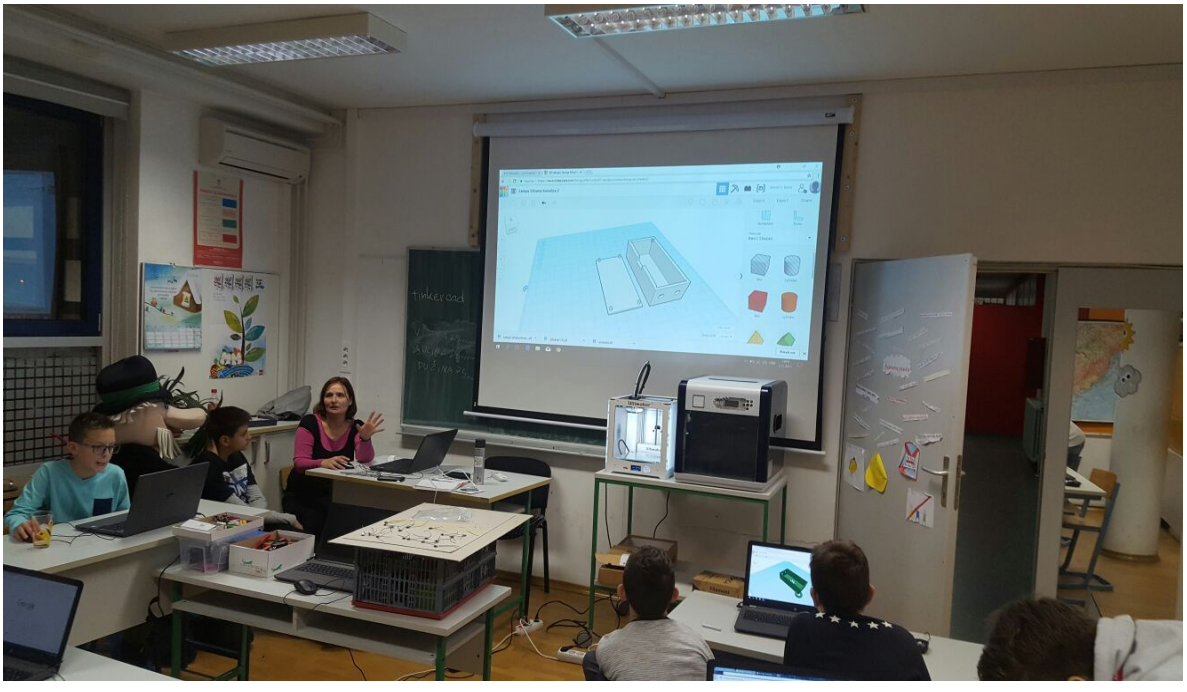
Workshop 3: Build LED Lamp, 07/12/2017, on Science Night

Third workshop was even more ambitious. Children should design lamp case in TinkerCad for 3D print, but also make simple electric circuit, consist of battery, switch, resistor and LED lamp. Technical subject teachers from two schools work together on this workshop with around 20 childrens.



2. Lessons learnt

Community does not necessarily mean a homogeneous whole where everyone knows.
This activity this activity showed how a community can work actively for social integration.

Keep doing

- Inclusion of various subject teacher was great. Higher quality of designs (Make a Tie), when art teacher was involved!!!
- Explore intentional inclusion of kids with disabilities, they should be involved together with others, but special intention is necessary to keep them motivated
- Open and free access to the technology is necessary as part of overall changes in education which include STEAM skills and project based learning
- Perform activities as part of other common events (National Tie Day, Science Night) bring more interest and have more impact

Start doing

- Review evaluation and survey. It is hard to get children's attention after workshop is over, and they made something. Survey is usually filled very quick. Maybe in form of vblog or video interview? However, extended survey can be demanding. Before and after survey can show progress.
- Brining topic from SDG (Sustainable Development Goals), can improve project results and bring students to real life challenges.

Stop doing

- Workshop should not be just technology course, but should have project topic.
- Stop emphasizing just STEM fields! Avoiding inclusion of Art in STEM is destructive for kids development, because social and human skills beside creativity are neglected

3. Outcomes

Bringing different ages working together (Workshop 2), had great impact, can contribute developing soft skills of students, helping pupils to easier adopt new skills. Bringing teachers from different subjects, especially involving art subject teachers can improve results and overall impact on some project based courses.

4. Sustainability

All workshops are with very low economic cost, but higher number can have more financial pressure. Use of 3D printer should be prepared, and overall, higher number of participants is not good for 3D printer, even with several of them. We will offer free FabBox use, to offer schools easy access to technology, but also with workshop process description to develop appropriate skills and help teachers.

In the meantime (since this is revision made in 5/2019 of the report from 2018) more than 20 schools use, or visited for workshops related to FabBoxes.