Pedagogy first. From tools to educational visions: The DIYLab project

Juana M. Sancho-Gil
Universitat de Barcelona

Cristina Alonso-Cano
Universitat de Barcelona

Judith Arrazola-Carballo
Universitat de Barcelona
1. What is DIYLab about?

Do It Yourself in Education (DIYLab)
Expanding Digital Competence To Foster Student Agency And Collaborative Learning

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Background

Increasing need of

- understanding and fostering the skills required to make education better suited to meet the challenges of the knowledge society,
- better equipping citizens with key competences
- developing a 21st century lifelong and life-wide learning culture
Lessons learnt

• The introduction of a tool – not matter how powerful it could be –, in educational institutions with deeply rooted organizational and teaching cultures hardly becomes the Trojan horse, as argued by Seymour Papert, or the foothold that will move the world, in this case education (Conlon & Simpson, 2003; Balanskat, Blamire & Kefala, 2006; Condie & Munro, 2007; Law, Pelgrum & Plomp, 2008; Sancho & Alonso, 2012).

• Schools aiming to meet individual and societies learning needs should undergone a profound organizational, epistemological (how knowledge is understood and represented) and pedagogical (teaching, learning and assessment conceptions) transformation (Chen, 2010; Law, Yuen & Fox, 2011; OECD, 2013; Yang, Z., Yang, H. H., Wu & Liu, 2014).
To involve schools, teachers, students (and parents) from the very beginning to guarantee the process and its sustainability.

The pedagogical approach, the learning opportunities and the assessment approaches able to encourage the acquisition of digital and other key competences.
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Philosophy/Perspective

DIY, or Do It Yourself, is a philosophy that puts the student at the center of the learning experience, by turning it into the maker of its own learning materials.

This project aims, develop to foster student’s agency, collaboration and digital skills, using any kind of technology, to make them lifelong and lifewide learners.

Lifelong and Life-wide Learning by expanding students’

1. Creativity
2. Collaboration
3. Self Regulation
4. Digital competence
5. Agency and Sharing
Partners

University of Barcelona
Grup de recerca Esbrina
Barcelona, Spain

University of Oulu
Oulu, Finland

Charles University
Prague, Czech Republic

Escola Virolai
Barcelona, Spain

Oulu University Teacher Training School
Oulu, Finland

ZŠ Korunovační
Faculty School
Prague, Czech Republic
Schedule Planning

2014
- Analysis
- Teacher Training

2015
- Implementation

2016
- Improvements
- Socio-economic Evaluation
Collaborative Action Research circle

Steps 1 and 2 Design
- WP1 Building DIYLab from participants' experience and expertise
- WP2 Formation in support of DIY Education and design of the DIY Lab

Steps 3 and 4 Implementation
- WP3 Launch Digital Hub
- WP4 DIY Labs in Action at School and Higher Education

Steps 5 and 6 Evaluation and improvement
- WP5 Building on experience: making improvements to the DIY Lab
- WP6 Socio-economic evaluation
Where schools were where

13 documents were analysed:
• National curricula.
• Schools syllabi

School equipment
Students access digital technology
## Where schools were: Focus Groups

<table>
<thead>
<tr>
<th>Level</th>
<th>Teachers</th>
<th>Parents</th>
<th>Students</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary &amp; Secondary</strong></td>
<td>5 Primary, 6 Secondary</td>
<td>6 Primary, 6 Secondary</td>
<td>6 Primary, 6 Secondary</td>
<td>Spain</td>
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<tr>
<td></td>
<td><strong>8 Combined</strong></td>
<td><strong>10 Combined</strong></td>
<td><strong>8 Combined</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Primary &amp; Secondary</strong></td>
<td>8 Primary, 7 Secondary</td>
<td>5 Primary, 6 Secondary</td>
<td>10 Primary, 6 Secondary</td>
<td>Czech Republic</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
<td><strong>23</strong></td>
<td><strong>36</strong></td>
<td><strong>93</strong></td>
</tr>
</tbody>
</table>
Where schools where

1. Autonomous and self-regulated learning
2. Inquiry-based teaching and learning
3. Transdisciplinary or interdisciplinary knowledge, links and connections
4. Digital competence
5. Collaborative learning

Opportunities and limitations for anchoring DIYLab to the curriculum
Towards the implementation of DIYLab

Training workshops for participants
Towards the implementation of DIYLab

Perspective

• Increasing our understanding of DIY perspective/philosophy/culture

Digital Technology
- What have we done?
- How has it been done?
- What have we learnt?
Towards the implementation of DIYLab

Pedagogy

• WHERE: at what times and in which contexts of the syllabus would we implement the DIYLab?
• WHERE: what timing do we forecast: continuous hours, fractioned time, specific moments, etc.?
• HOW: ideas about how the project can be implemented.
• WHO: who should be involved: one teacher per classroom, several, external agents...
• WHAT: what we need to be able to work. What tools and resources.
• EVALUATION: how we envisage it.
• DIFFICULTIES AND ADVANTAGES: of implementing the project.
**Implementing DIYLab**

<table>
<thead>
<tr>
<th>Primary and secondary school</th>
<th>Num. of Pupils</th>
<th>Num. of Teachers</th>
<th>Num. of Subjects</th>
<th>Num. of projects</th>
<th>Num. of Digital objects published on the DIYLabHub</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>95</td>
<td>15</td>
<td>9</td>
<td>2</td>
<td>32</td>
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<tr>
<td>Finland</td>
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<td>14</td>
<td>18</td>
<td>9</td>
<td>56</td>
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<tr>
<td>Czech Republic</td>
<td>269</td>
<td>7</td>
<td>13</td>
<td>20</td>
<td>20</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>478</strong></td>
<td><strong>36</strong></td>
<td><strong>40</strong></td>
<td><strong>31</strong></td>
<td><strong>108</strong></td>
</tr>
</tbody>
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DIYLab in primary and secondary schools described by numbers
Making DIYLab sustainable

The philosophy
• Strengths, valuables, Weaknesses of DIY culture at school level

The activities
• What has been done? What has been done differently than before? Strengths and valuables; Weaknesses and problems

The future
## Making DIYLab Sustainable

<table>
<thead>
<tr>
<th>Level</th>
<th>Teachers</th>
<th>Parents</th>
<th>Students</th>
<th>Country</th>
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</thead>
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<tr>
<td><strong>Primary &amp; Secondary</strong></td>
<td>4 Primary 5 Secondary</td>
<td>3 Primary 5 Secondary</td>
<td>4 Primary 7 Secondary</td>
<td>Spain</td>
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<td>6 Primary 6 Secondary</td>
<td>6 Primary 4 Secondary</td>
<td>34 Primary 6 Secondary</td>
<td>Finland</td>
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<tr>
<td></td>
<td>4 Primary 4 Secondary</td>
<td>3 Primary 5 Secondary</td>
<td>5 Primary 10 Secondary</td>
<td>Czech Republic</td>
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<tr>
<td><strong>Total</strong></td>
<td>29</td>
<td>26</td>
<td>66</td>
<td>121</td>
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<td>Pedagogy</td>
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<td></td>
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<tr>
<td>• Further exploring with students the implications of DIY philosophy in the teaching and learning processes</td>
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<tr>
<td>• Fundamental transformation of students’ role from consumers to prosumers</td>
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<td>• Requires reflection spaces between students and teachers to enhance a pedagogical relationship build on mutual trust and responsibility</td>
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Making DIYLab sustainable: conclusions

DIGITAL TECHNOLOGY

The need of further developing and improving:
• The intensive use of technology (not only digital but understood as all available resources) from an educational and critical point of view.
• The use and development of multi-literacies and modes of expression and communication.
• Contemporary approaches to diversified representations and conceptions of knowledge.
Making DIYLab sustainable: conclusions

Organizational

The need of:

• Inviting more teachers to join in the adventure, making possible more transversal implementations.

• Include these issues in all institutional instances, which deal with curriculum matters (coordination meetings, Boards of Studies, etc.).
REFERENCES

The consolidated research group Esbrina — Subjectivities, Visualities and Contemporary Learning Environments (2014 SGR 632).

http://esbrina.eu