

# D. 2.2. DIYLab Specifications: **Spanish University**

(English version)



**Do It Yourself in Education:** Expanding Digital Competence To Foster Student Agency And Collaborative Learningy European Commissiony Educations Audiovisual and Culture Executive Agency -71400ALLPA4A3541A4AESAKA1MP



## 2.2. DIY Lab Specifications - Spanish University

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## INTRODUCTION

This report reflects the process and the outcomes of the Formation in support of DIY Education and design of the DIY Lab. Its aim is to synthesize the explorations and decisions made by the University of Barcelona's teaching staff in charge of the implementation of DIYLab (WP4). The formation is part of the action-research cycle initiated in WPI.

The formation has been recognised by the Institute of Professional Development for Education of the University of Barcelona, responsible for the initial and permanent professional development of the teachers. This has enabled the attendance of other university teachers interested in the question. 19 teachers have taken part in the process, eleven of them directly involved in the DIYLab<sup>1</sup> and eight<sup>2</sup> interested in exploring the DIY philosophy in their educational practices. The activity, from its planning to its development, took place between July and December 2014. The work with the teachers was specified in 6 in situ meetings between October and December 2014. During this time there was permanent virtual contact. The individual dedication of all the participants was at least 3 hours per week.

## 1. Development of the formation

The formation was based on the generation dialogic processes starting from the background and experiences of the participants and the analysis of available literature (McKay, 1998; Spencer, 2005; Kamenetz, 2010; Guzzetti, Elliott & Welsch, 2010; Knobel & Lankshear, 2010; Kafai & Peppler, 2011) and practical examples of DIY<sup>3</sup>. In this way we have endeavoured to ensure the sustainability of the philosophy of the project

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3 <https://www.youtube.com/watch?v=i6MLLkmXee0>; <https://www.youtube.com/watch?v=JyeW2zZSr8k>; <https://www.youtube.com/watch?v=5c-bOgVh3mw>

beyond its completion. The undertaking of the formation was considered a collective success by all the participants<sup>4</sup>.

## 1.1. General organisation

Considering the proposal established for the formation period and the subjects to be dealt with (see table 1) –common for the whole consortium–, work blocks were planned, in the form of workshops (in situ and virtual) “do it yourself together”, to ensure that the questions, ideas, proposals and reflections were generated in a context of collaborative learning.

EXPLORATORY MOMENTS			DECISION-MAKING
<b>1. What do we understand by DIY philosophy?</b>	<b>2. DIY philosophy and education</b>	<b>3. Technological tools and resources</b>	<b>4. Pedagogic specifications</b>
Common reflective focus in relation to the DIY philosophy.	What happens when we introduce the DIY philosophy into an educational institution?	Debates around the technological design of the DIYLab.	When and where will the DIYLab take place? How is it integrated into the syllabus?, etc.
RESULTS			
<b>Pedagogic principles</b>		<b>Use of the ICT in DIYLab</b>	<b>DIYLab &amp; Syllabus + Implementation Plan</b>

Table 1: Distribution of the contents into four blocks, agreed with the members.

This form of work has enabled all the participants to make significant contributions to the shaping of the pedagogic and technological implications of the DIYLab, as well as to the implementation plan.

This report is based on all the evidence gathered (video, photos and text) during the meetings and also on the contributions made in the virtual space.

## 2. Pedagogic principles

After a debate regarding the personal experiences of the participating teachers, it was agreed to understand the DIY philosophy as a movement:

- *Maker*
- Self-run

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<sup>4</sup> The University teachers and those of the Escola Virolai organised a joint session to share our processes in which both the value of the results and the collaboration between the two institutions was highlighted.

- Not school-centred
- Not regulated by the institutions
- Anarchic
- It goes beyond the simple fact of sharing hobbies.
- It comes from youth culture
- Based on the interests of the learners
- With the desire to share

Reaching this agreement, in the second block, an approach was made to some of the main pedagogic principles of the project.

## 2.1 The DIY philosophy in relation to formal education

This was one of the most debated points of the formation. Initial questions arose about the characteristics of the DIY philosophy, important for the implementation of the project and a core of doubts were also identified: *how to articulate an innovation generated openly and take it to a controlled institution*. In this setting the following questions were approached:

### a) Initial questions:

- What does the DIY concept in the university mean for us?
- How do we move something developed in the sphere of youth culture to the University?
- How is the DIY philosophy in the University embodied?
- What pedagogic implications can it have?
- What can we do with the current structure of the university?

### b) Important features of the DIY philosophy for its passing to the institutions and pedagogic application:

- **Creativity:** What do we understand by creativity? Transformation, appropriation, authorship, etc.
- **Collaboration:** *DIY together*.
- **Self-regulation:** it seems to be the less worked feature in the university, since the university system does not usually consider it. It is linked to problems related to the compartmentalisation of the syllabus and evaluation/self-evaluation.
- **Technology:** intensive use of technology, which must not only consider digital technologies, but also analogical, artefactual and symbolic ones.
- **Explain and share:** interest in explaining to others what I know and sharing it.

These features are already worked on in some university classrooms, although generally separately, something that generated new questions:

- What is really done so that we can say we are developing a project based on the DIY philosophy?
- How can all the characteristics enounced in educational projects be fitted into an institution?
- How can we promote a genuinely DIY philosophy into our courses?
- What is distinctive about the DIY philosophy that can help us promote both the students' and our own learning?

All the above led us to formulate the contradiction mentioned above in the following terms:

### **c) The core of the doubts**

If we try to introduce a learning philosophy that comes from a spontaneous and self-run movement into an institution that does not usually favour self-regulation, will the institution *swallow up* the DIY philosophy and turn it into an *as if*, into a sham, or will the DIY philosophy be able to transform the university?

Thanks to the debate, we could see that the participants had the sufficient tools, arguments and experiences to take on and attempt to confront this contradiction:

- Through the creation of new frameworks of action: learning environments and projects.
- Guaranteeing that the teacher also participates in the project. Something that deactivates the role of *I command and you do*.
- Boosting the capacity of the student to choose what, why and how they want to work.
- Guaranteeing not to work with school-centred formats.
- Questioning finalism.
- Recognising the need for a process of preparation of the students, before starting the projects, understanding that one reaches DIY, does not come from it, nor is it imposed.

Implementing the DIY philosophy in the university serves as a trigger to: help find spaces, advance in ideas we already have, and even reach and do things that we did not know or expect (Atkinson, 2011). But it is also necessary to be aware that to develop a project with DIY characteristics it is necessary to follow a process and that perhaps not all students can achieve it.

## 2.1.1 The tension between suggestion and interest

We know that in general teaching goes top down. It is assumed that teachers have to propose subjects with disciplinary marks and pre-established concepts that the students have to learn. However, would it be possible to find a point of contact between that which has to be learnt, how it must be learnt, and the interest of the students?

This reflection, posed by one of those attending the formation, was specified in the following question:

**Is it possible to start from the interest of the students when undertaking a project in the classroom?**

Which generated a debate about the importance of:

- Teachers thinking of themselves as creators of circumstances.
- Boosting the trust between student and teacher to back the project: trust – motivation – involvement – choice – motivation.

I believe the teacher develops a type of multi-coaching, because as with some students the subject-interest connection can be quite immediate (as regards the contents), in others the interests must be looked for or awoken in other dimensions of the person.

- Connecting the inside and outside of the university.

Our challenge is to connect their world/life outside the university with that inside. The outside one is more important, more meaningful, has more relevance and, in short, is the one that matters. If we could ensure that every subject was linked to their daily experience it would be a success. In other words, that each subject gives an answer to each of their concerns...

- Favouring interrelations between:
  - Limits / freedom / uncertainty

I think the trick is to leave a margin where [the students] can include their own interests on the condition they want to. What we need to ask as teachers is how much margin we are prepared to give.

- Having / wanting, understanding by having what I already know; and by wanting what makes it possible for me to learn what I don't know.

One of the challenges of university teaching is to generate more possibilities for learning about what is unknown (Atkinson, 2011).

In short, the DIY philosophy in university learning means:

- Sharing.

- Forming part of a horizontal learning community,
- Questioning the idea of *expert* and tending towards *doing it for oneself* (with others).
- Critical capacity: questioning the syllabi, including my questions in them, etc.
- Authorising oneself within the discourse: from considering oneself not being an expert, from the need to learn.
- Deconstructing the power that decides what has to be studied.

### 3. Use of the ITC in the DIYLab

Technologies, and not only digital technologies, have a leading role in the DIY philosophy. Nevertheless, the fact that the project is linked to the development of the technology and the digital competency has involved the need to explore its immense possibilities.

#### 3.1 Digital tools

Taking into account the current massive development of digital technologies and the multiplicity of possibilities, applications and resources available, the generalised feelings among the teachers are:

- Disorientation
- The need to be up to date but without stress.
- Group work as a strategy to get further.
- The combination of different resources in order to be able to achieve the objectives.

Although a major task of exploration has been done by the participants, and starting off from freedom as a characteristic of the DIY philosophy, the idea is that the students can also decide on the tools they wish to use, according to what they need to explain.

In the formation we offered a general vision of the existing resources (see image 1) and a document that detailed how each of them could help create DIY projects. For example: a) photography and video resources (Stop Motion, Time Lapse, Machinima, Animació 2D, Art 2D, Animació and Art 3D); b) audio and music resources (production of podcasts, musical production); c) software and video games (Minecraft, Kerbal Space Program, Portal 2, Stencyl and GDevelop, Scratch); d) web production and digital art (Processing, Webmaker, WordPress).



Image 1: Summarising map of some possibilities of tools and resources.

As a group we decided to take an in-depth look at three of the tools proposed: **Blender** (it seems that using this programme in the contexts that are generated with the DIYLab may be a little complex. It is a piece of software with possibilities but complicated to use and not very intuitive); **Webmaker** (an interesting tool but which requires quite a lot of time to be able to explore it in depth). **“Pop Corn”** seems to be the option that could have most use within the DIYLab, although we have to take into account that the material used has to be original, otherwise it does not allow video editing. **Wordpress** seems to be a good solution for students, although if the complete version is chosen it must have a server. Other tools were explored that did not appear in the initial document such as **Pow Toon**, **Camtasia** and **Idroo**.

#### 4. Diylab & Curriculum

Throughout the formation the DIYLab was related to the syllabi of the different subjects, suggesting possible scenarios and proposals for implementation. The doubts that arose were:

- How can the project be fitted into the current Teaching Plans?
- What should the results be?



- What processes/knowledge will be shared through the DIYLabHub?
- Is it necessary to clarify the context?
- How and what should be evaluated?
- How can the inside and outside of the classroom be related?
- How can a group idea be constructed?

The goal is to be able to respond to the following aspects:

- 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 in the university.

## **5. Implementation plans of the DIYLab in the university**

The analytical and collective reflective path taken has enabled us to outline the pedagogic and technological specifications for the implementation of the project in the university.

Guidelines have also been specified so that the teachers and students can follow and evaluate digital competence during the implementation process.

It is important to take into account the prescriptive and segmented character in subjects (basic, obligatory and optional of between 3 and 6 credits) of the formative syllabi. In the University of Barcelona the Teaching Plans are prepared several months before starting classes and must be approved at Departments and Faculty levels.

This situation makes it practically impossible to propose transversal and interdisciplinary projects that bring the students closer to real problems in their fields of study, and which can connect and broaden their interests better. This has meant that only in the Social Education degree where there are three teachers who share in different courses, has it been possible to propose a transversal strategy. Specifically, the DIYLab will be implemented in the following subjects (table 2):

<b>SUBJECT/S</b>	<b>DEGREE</b>	<b>TEACHERS</b>	<b>STUDENTS</b>
Environments, processes and technology for learning	Pedagogy	3	70
Communication in Education	Pedagogy	2	50
Teaching and learning in the digital society	Pedagogy	2	50
Digital and visual culture in socio-formative processes	Pedagogy	3	30
Contemporary Visualities	Fine Art	2	50
Psychology of art and gender studies	Fine Art	1	30
Musical Dynamism	Primary Education	1	15
External practices I Didactic foundations Uses, possibilities and limits of technologies in social education	Social Education	3	70

Table 2: Scenarios of implementation of the DIYLab in the University of Barcelona.

Despite this syllabus availability all these subjects share a conception of teaching and learning based on:

- Self-regulated learning.
- Autonomous learning.
- Collaborative learning.
- Meta-reflection.
- Transference.
- Evaluation of the learning.
- The use of all learning tools and resources (digital or not) available and relevant in each case.

In all the subjects the students do research-based projects in groups that articulate their goals and contents. The DIYLab will incorporate the process of production, reflection and transference linked to these projects.

### **5.1. Base for the implementation of the DIYLab**

The scenarios of implementation of the DIYLab are adapted to the framework of the subjects but have five base points as regards what the DIY philosophy involves in education:

1. The idea of a focus of interest.
2. Collaboration.
3. The fundamental role of technologies, although they do not have to be the main focus.
4. Creative decisions, breaking the mould. Adapting, transforming, experimenting.
5. Feeling like an author.

In all the cases:

- The students will be introduced to the DIY philosophy and the DIYLab project.
- The importance of sharing their own learning processes will be valued.
- It will be suggested that they share a multimedia production individually or in group.
- That this production reflects what they have done, how they have done it and what they themselves have learnt.

The strategy to use will be:

- There will be an introduction to the project at the beginning of the subject.
- It will be pointed out that they are collaborating on a European project of innovation.
- They will be given recognition for their collaboration.
- The importance of visually documenting their processes will be emphasised.
- It will be proposed that they link it to one of the research-based projects done in the different subjects.
- The importance of feedback and accompaniment by the teacher will be stressed.
- It will be clarified that the intellectual property belongs to the authors and an ethical agreement will be established.
- The criteria of evaluation will be shared.

So that the productions of the students to be included in the DIYLabHub must comply with the following minimum conditions:

- Last for a maximum of five minutes.
- Their content has to be comprehensible for a person not connected with the project.
- Have a visual component.
- Move between the descriptive and the reflective.

- Have a story board as a base.
- The title and author or authors are specified.
- Have a summary.
- Be subtitled in English.

## 5.2 Transversal strategy in Social Education

La articulación del trabajo coordinado y transversal entre las tres asignaturas del grado de Educación Social queda sintetizada en la tabla 3.

<b>“External practices I” (3rd course)</b>	<b>“Uses, possibilities and limits of technologies in social education” (1st course)</b>	<b>“Didactic Foundations” (2nd course)</b>	<b>ALL</b>
From their practices emerge “histories”. Choice of cases	Visualisation and publication of the case.	Work on the case	Presentation of the cases prepared, reflection: possibilities, limits, proposals for improvement.
Joint reflection. Preparation of scripts.	Between experiencing and recounting: reflection about the languages, possible tools for the production of the cases.		
Compilation of visual material for the contextualisation of cases. Images of daily life.	Visualisation of examples. Presentation of tools.	Elaboration of the story board or graphic script. Production and edition of the material.	
ALL: compilation of the process	Elaboration of video-personal diaries. Recording of some sessions. Photographic registry. Virtual space to share cases, comments, doubts and reflections.		

Table 3: Articulation of the work in the three subjects of Social Education degree.

## 5.3 The diffusion of this stage of the project

As we have progressed, the fact that the formation is done as an activity of professional development of the Institute of Professional Development for Education of the University of Barcelona enabled the attendance of any university teacher interested in the question. So a teacher from the University of Cuenca Ecuador, who is working on a doctorate, also thought about a scenario of implementing the DIYLab for pre-professional practice in the teacher training course for maths and physics at his University. This teaching and learning perspective can contribute, on the one hand, to the learners increasing their knowledge, getting up to date, and undertaking proposals about their needs as a teacher; and on the other hand, to collect information from the schools that enables the degrees to develop research and feedback their activity for purposes of accreditation.

## 6. Conclusion

As reflected in this report, the set of goals of the formation for the introduction of the DIY philosophy in education and the design of the DIYLab in the university have been achieved. The activities undertaken by the university teachers have enabled us to concretise the plan of action in its organisational, pedagogic and technological dimensions, which will be put into practice in the next stage of the project (WP4).

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