



Digital Do It Yourself

Digital DIY Community Day, Barcelona, July 7th, 2016

International Research on Education
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Research questions and (some) objectives

- A. What **transformations** is DiDIY producing in the European educational practices and structures?
- B. What are the **effects** of these changes in terms of quality of education?
- C. What **factors** are promoting these (positive and negative) effects?
 1. WHERE & WHO - Define **space** and **actors**;
 2. HOW - Define **explorative tools** to gather and analyse data;
 3. WHAT - Gather and analyse **data**.

Space and Agents

1. Research on EU institutions and DiDIY cultural movements → map of current uses of DiDIY-related technologies
2. Select representative sample of different agents
3. Individual and group interviews to complement WP's background knowledge



Educational Context - beyond

“schools”

WHERE

Formal education (from primary school to university and post-graduate)

Informal education (FabLabs, MakerSpaces, CoderDojos, ...)

Mixed environments (contests such as RoboCup, First Lego League, Museums,...)

Learners

Students, post-graduate researchers

Trainees, coders, makers, hackers, ..

Players

Trainers

Professors, teachers and laboratory technicians

Trainers, researchers

DiDIY expers, trainers, researchers

Managers

School principals, pedagogues, officials from ministries or their provincial/regional offices

Organisers, founders, networks

Managers of museums, organizers of contests, exhibitions, ..

WHO

HOW can we study this emerging phenomenon?

To define **specific explorative tools** to gather and analyse qualitative and quantitative data relevant to determine the transformative effects of DiDIY in European education and research

1. Identify pertinent dimensions (areas of investigation) of the research space to be explored:
2. Define and tailor appropriate explorative tools (the “Methodological plan”):
 - a. **workshops;**
 - b. **focus groups;**
 - c. **questionnaires.**

Areas of investigation

The role of creativity

The role of sharing

The role of teachers

DiDIY and learning flows

How is school as institution responding to the use of DiDIY?

How is research affected by DiDIY?

Ethical issues in DiDIY education and research

DiDIY in education and gender issues

DiDIY and special education

DiDIY: from STEM to STEAM

	The role of creativity									
	The role of sharing		The role of teachers and trainers			DiDIY and learning flows				
	How is school responding to the use of DiDIY?					How research is affected by DiDIY?				
	Ethical issues in DiDIY education and research					DiDIY in education and gender issues				
	DiDIY and special education					DiDIY: from STEM to STEAM				
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Students, post-graduate researchers (FE)	X	X	X	X	(X)	(X)	(X)	(X)	(X)	(X)
Professors, teachers and laboratory technicians (FE)	X	X	X	X	X	X	X	X	X	X
School principals, pedagogues, officials from ministries or their provincial/regional offices (FE)	(X)	(X)	X	(X)	X	X	X	X	X	X
Trainees, Makers, Hackers, Coders, etc. (IE)	X	X	X	X		X	(X)	(X)	(X)	(X)
Trainers, researchers (IE)	X	X	X	X	(X)	X	X	(X)	(X)	X
Organizers, Founders of FabLabs, Networks of Movements, etc. (IE)	X	X	X	(X)	(X)	X	X	(X)	(X)	X
Players (often including also school teachers) (ME)	X	X	X	X		X	(X)	(X)	(X)	(X)
DiDIY experts, trainers, researchers, etc (ME)	X	X	X	X	(X)	X	X	(X)	(X)	X
Management of museums, Organizers of contests and exhibitions, etc (ME)	X	X	X	(X)	(X)	X	X	(X)	(X)	X

The role of creativity

The role of sharing

The role of teachers and trainers

DiDIY and learning flows

How is school responding to the use of DiDIY?

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Ethical issues in DiDIY education and research

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DiDIY and special education

DiDIY: from STEM to STEAM

Online survey

X

X

X

X

Individual questionnaire

X

X

Interview

X

X

X

X

X

X

X

X

X

X

X

Focus Group

X

X

X

X

X

X

X

X

X

X

X

Workshop

X

X

X

X

Online questionnaire

- **Opinion** about:
 - Open questions
 - “**makers**”
 - Scalable questions
 - “**making**” (in general)
 - “**digital** making”
 - “**Internet of Things**”
 - DiDIY and **creativity**
 - DiDIY and flow of **communication**
 - DiDIY and role of **teachers** and trainers
 - DiDIY and role of **sharing**
- Personal details
 - Demographic (age, gender)
 - Educational background
 - Acquaintance with DiDIY instruments (scalable)

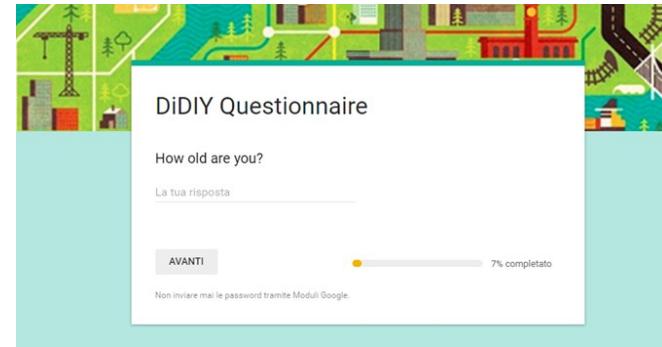
Anonymous

Implemented on Google modules

Language	No. of responses
Italian	41
English	14
Total	55

[English version](#)

[Italian version](#)



DiDIY Questionnaire

How old are you?

La tua risposta

AVANTI

7% completato

Non inviare mai le password tramite Modul Google.

Interview

Selected interviewees based on online survey done and map of contact developed


No. of contact person identified: 166

No. of email sent so far: 56

No. of positive contact: 7

Countries covered: Belgium, Estonia, Germany, Hungary, Ireland, Italy, Spain



WP4 - Analyzing how DiDIY is
reshaping education and research 
Interview of stakeholders

Thanks for taking the time to read this document. With your help we will be able to better assess the status of the DiDIY phenomenon in Europe and its impact on education and research. There is no need for you to address all the questions and points at once: we leave to your judgment the selection of those topics and questions that you feel more appropriate for you to answer.

DiDIY and Education

DiDIY is related to a new generation of students already immersed in new technologies ("digital native"), as well as to the adoption of new pedagogical tools and approaches for the benefit of general/adult learners in acquiring new skills, abilities, and ways of thinking. Thanks to the Internet, we also see learners much more involved in exchanging information and knowledge over the web than ever before. Students are learning much more in these informal environments, making education become less institutionalized and more personalized. Students are thus moving from "consumers" to "producers" of knowledge. Educational institutions are now competing with a more fluid concept of learning, that takes place mainly outside the class and in recreational spaces.

Some research questions

- **The role of sharing** Thanks to the widespread and affordable access to the Internet and the growth of the free software and open source and open hardware movements, pupils work on common projects and share working spaces with their colleagues-friends. Does this lead to new ideas or to conformism? Does DiDIY emphasize individualism? How can the roles of individuals be shaped in DiDIY-related learning processes?
- **Learning flows** Students also share the same working spaces with teachers, thus making it harder to predetermine the flow of communication. How is communication and sharing, reshaping student-teacher and learning/teaching flows? How does the learning process happen during "make to learn" activities? Who are the stakeholders involved and which is their role in the process (teacher, students, educators, DiDIYers, etc.)? What are the similarities with learning flows that happen in other fields (e.g. in companies)? Which formats/contexts for these learning flows facilitated by which tools and led by which roles are the most successful?
- **The role of teachers** How can DiDIY be exploited to ease/emphasize the transition from a teacher/curriculum-centered school to a student/experimentation-centered education ("flipped learning")? Is DiDIY also transforming the role of teachers accordingly? How? What new competences are expected from them? (these questions need to take into account that DiDIY educational activities are also related to environments different from schools – such as labs, museums, robotics academies, etc. – and educators that are not teachers). Is this transition always a desirable outcome? What do teachers need to engage with this and dare to take that step? Do we need to set up spaces where the learners take the lead and demand support from other learners and teachers when they need it? Does the additional excitement that DiDIY can bring to STEM subjects sometimes come at the cost of distorting the way a given discipline is taught?
- **How is school as institution responding to the use of DiDIY?** It has been argued that schools as institutions could have greatly benefited from the computer age, but was somehow reluctant to do so (Papert, 2005). Will DiDIY have better chances to allow for major changes within the educational system, also taking into account the concurrent existence of multiple forms of DiDIY aimed at substituting schools, such as MOOCs? Are there Governmental funds to help schools acquire DiDIY technologies? Is there need of curricular reform? Is there need to have support from the management? How is the governance model affected? Do teachers get the space, freedom and



The DiDIY project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 644344. For further information, please visit www.didiy.eu

(Very!) Preliminary results

1. Too early to say something definitive!
2. However, a few similarities already across countries:
 - a. Recognised phenomenon (“self-awareness”)
 - b. Relevance of topics (sharing, flow of info, etc. - validation)
 - c. It’s not about technology, it’s about people:
 - i. central role of actors: (deans, teachers, students)
 - ii. Didactic approach
 - d. Ethics!

Conclusions and moving forward

1. **Complete data gathering** with interviews, workshops, and online questionnaire
2. Data **analysis** - interpretation of results against reference framework
3. Generation of **strategies** to support positive progress

Online questionnaire – please contribute!

[English version](#)
[Italian version](#)

Thanks!



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**DIGITAL
DO IT YOURSELF**