



USER GUIDE

Getting Started with eCraft2Learn



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Overview

eCraft2Learn is an EU funded project centred around researching, designing, piloting and validating an ecosystem based on digital fabrication and making technologies for creating computer-supported artefacts.

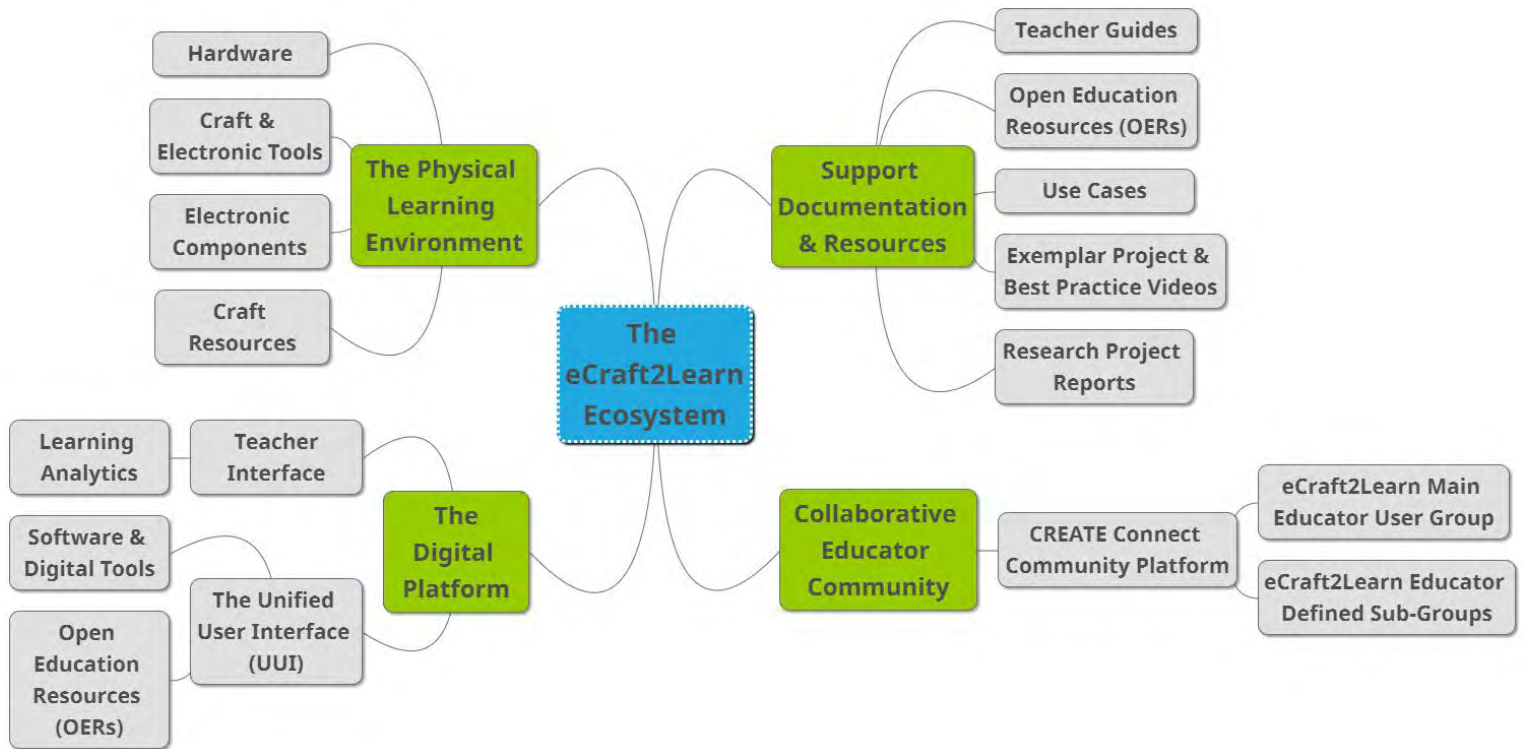
You can learn more about the eCraft2Learn Project in Teacher Guide 1 Introducing eCraft2Learn which can be downloaded at: <https://project.ecraft2learn.eu/introducing-ecraft2learn/>

This getting started guide has been created to assist you in the process of learning about eCraft2learn in order for you to ultimately be able to deliver eCraft2Learn projects to groups of students. The guide will take you through the following:

- Familiarisation with the eCraft2Learn ecosystem
- Setting up an eCraft2Learn workspace
- Developing your own knowledge and skills
- Your first eCraft2Learn project
- Next steps

You can learn more about the eCraft2Learn Project in Teacher Guide 1 Introducing eCraft2Learn which can be downloaded at: <https://project.ecraft2learn.eu/introducing-ecraft2learn/>





Familiarisation with the eCraft2learn ecosystem

When starting out with eCraft2Learn, it is important that you are familiar with the eCraft2Learn ecosystem.

The ecosystem consists of four main elements; support documentation and resources, the physical learning environment, the Unified User Interface (UI) and the collaborative educator community.

SUPPORT DOCUMENTATION AND RESOURCES

Teacher Guides

These are the best place to start, each of these guides provide detailed information and support around a specific element of eCraft2Learn.

The Teacher Guides can be downloaded at:

<https://project.ecraft2learn.eu/getting-started-with-ecraft2learn/>

Open Education Resources (OER's)

These are for educators and students to learn about the various eCraft2Learn tools and technologies including electronics, programming, 3D modelling and 3D printing. These are provided within the UI for learners to access whilst working on their eCraft2Learn projects, allowing them to manage their own learning.

The Open Education Resources can all be accessed from within the eCraft2Learn Project Platform (The UI) at:

<https://ecraft2learn.github.io/ui>

Use Cases

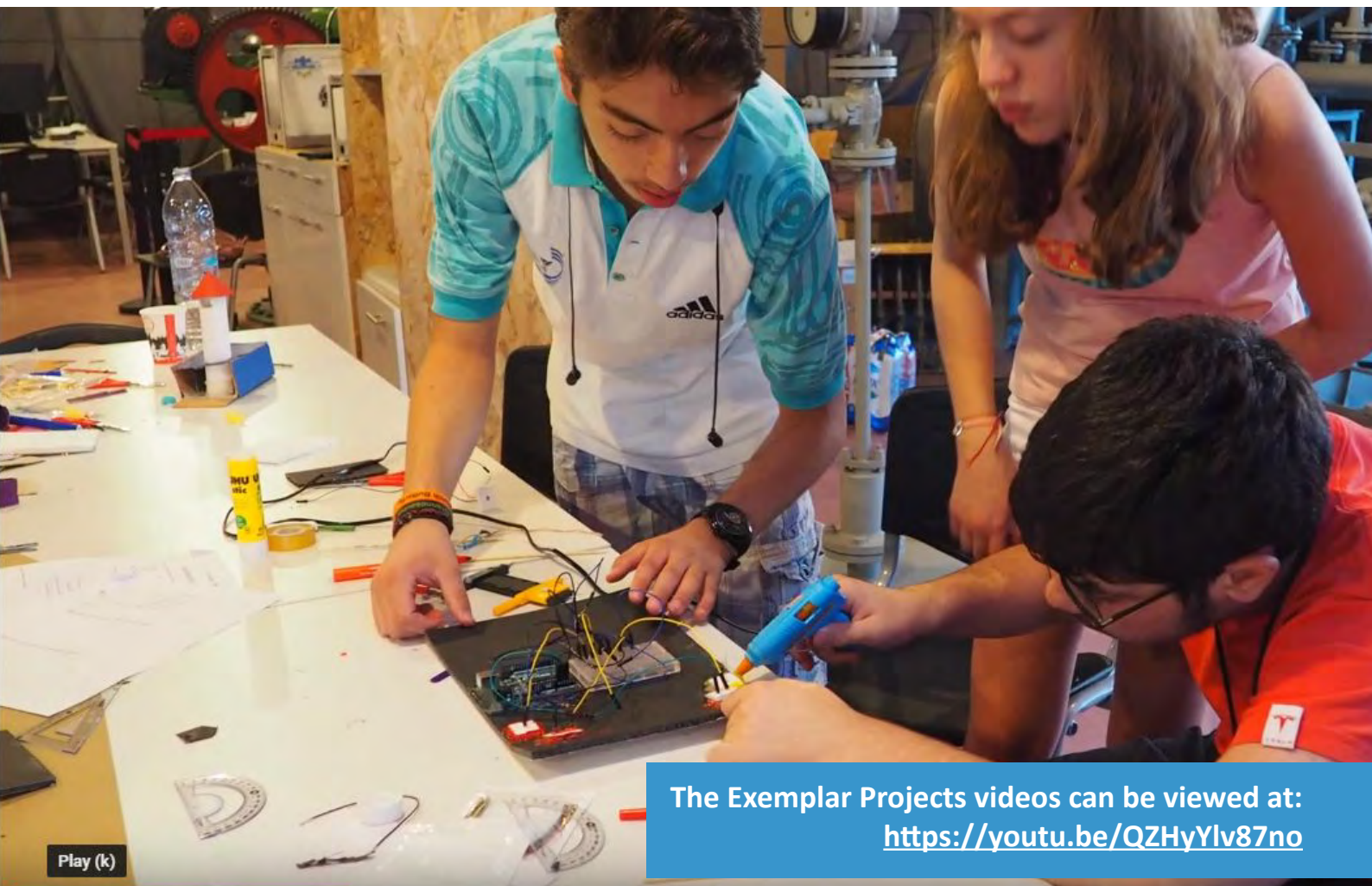
A number of Use Cases have been produced, to illustrate and allow educators to understand some of the scenarios and potential projects that are possible with eCraft2Learn.



The Use Cases can be downloaded at:
<https://project.ecraft2learn.eu/use-cases/>

Exemplar Projects & Best Practice Videos

During the eCraft2Learn project pilots, students participated in a variety of exemplar projects. These are available as short videos which illustrate the outcomes of these projects. A series of best practice videos were also produced that illustrate the eCraft2Learn pedagogical model. You can also learn about the exemplar projects and best practice videos in more detail in the project report D5.5, section 4.



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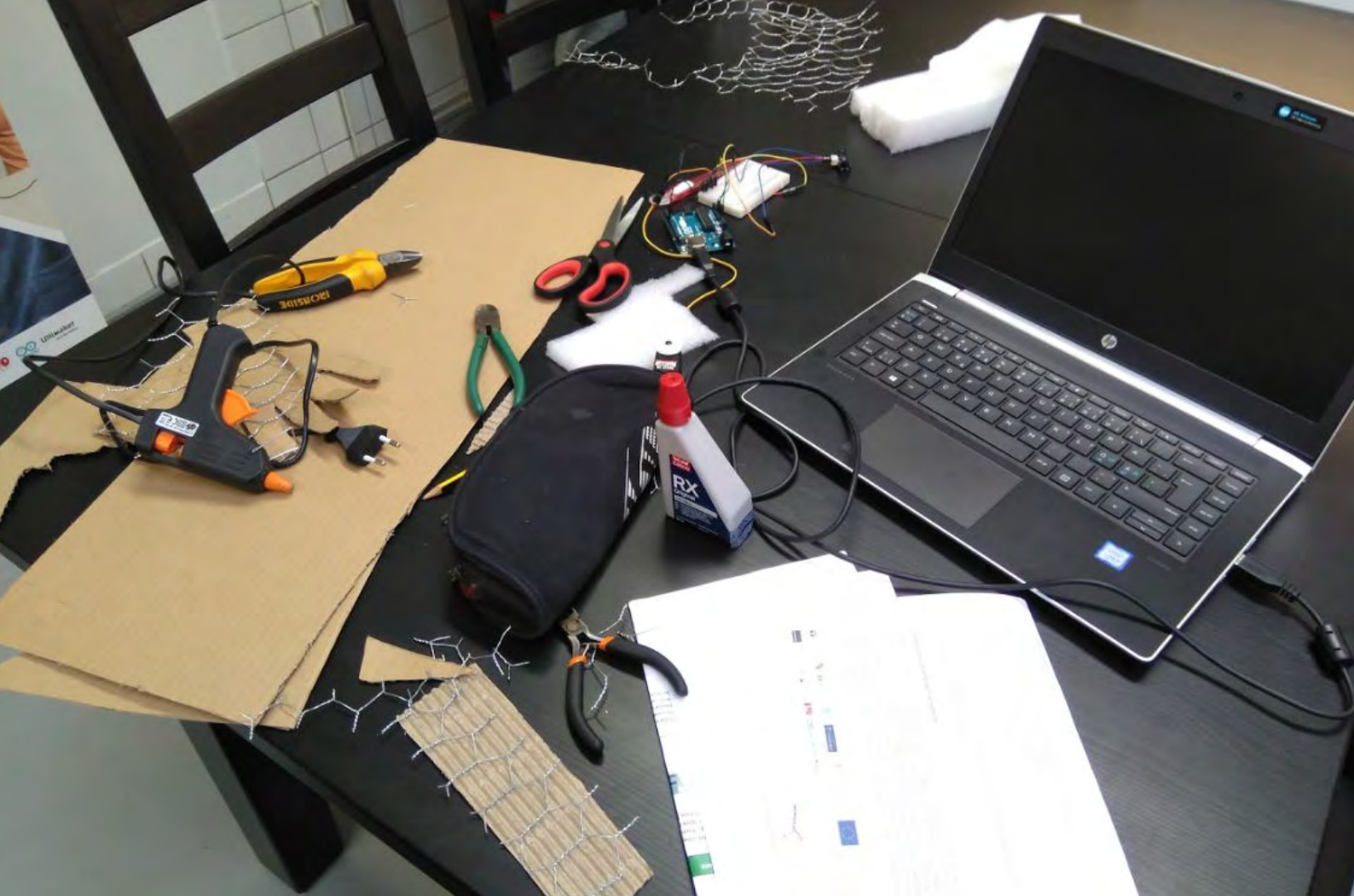
The Best Practice videos can be viewed at: <https://www.youtube.com/playlist?list=PLgKtrHOACe-I448iS4eAzpvFEbT3lDD20>

You can access exemplar projects and best practice documentation in Project Report D5.5 Section 4 at: <https://project.ecraft2learn.eu/wp-content/uploads/2019/01/D5.5-Small-scale-case-pilot-report-and-good-practice-videos.pdf>

Research Project Reports

During the two year eCraft2Learn research project and pilots, a number of detailed research reports were produced. These are useful for learning in more depth about a particular aspect of the the eCraft2Learn ecosystem, pedagogical model and outcomes. However we recommend you start with the teacher guides as these are more concise and perhaps explore the research documents at a later stage when you are more familiar with the eCraft2Learn ecosystem to develop your own knowledge and practice further.

The Research Project Reports can all be accessed at:
<https://project.ecraft2learn.eu/reports/>



THE PHYSICAL LEARNING ENVIRONMENT

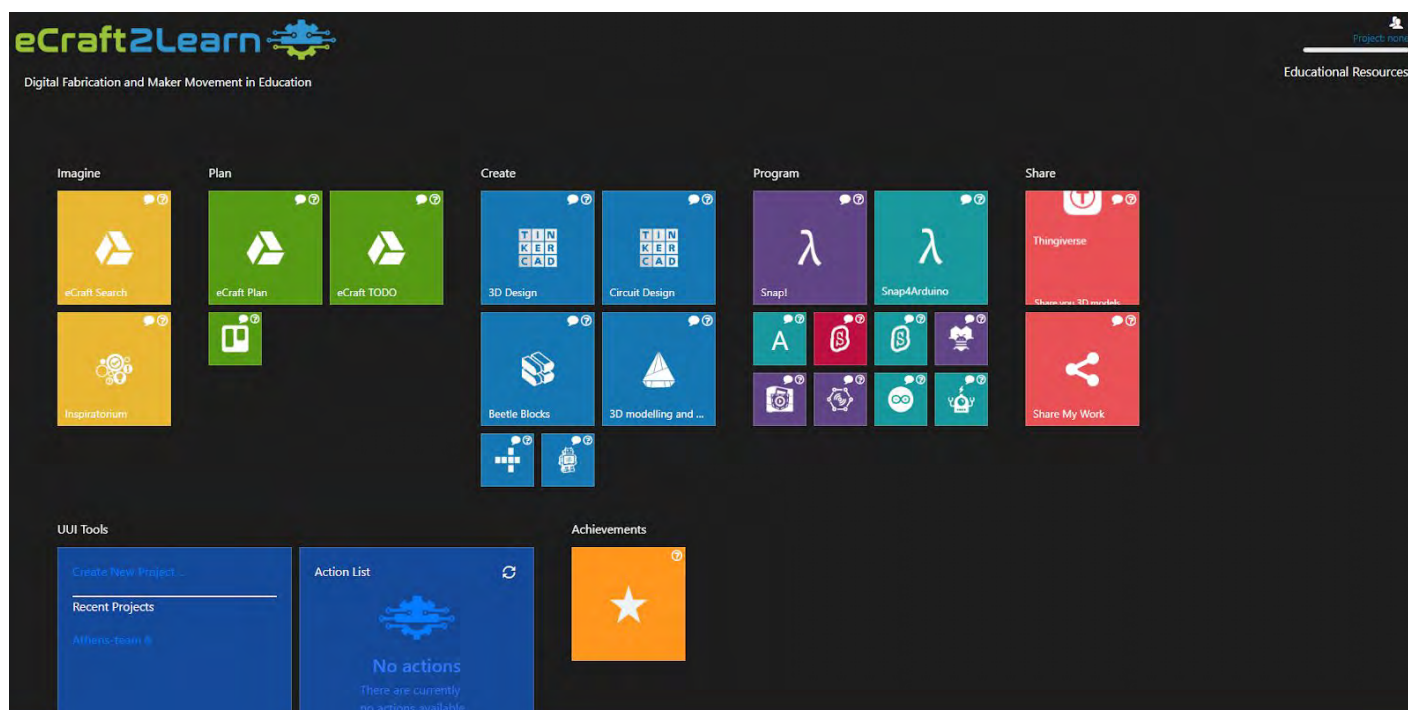
The physical learning environment consists of all the hardware, craft resources electronic components and tools required for working on an eCraft2Learn project.

Please refer to **Teacher Guide 3 Setting up an eCraft2Learn learning environment - hardware, software, tools and materials** to learn more at: <https://project.ecraft2learn.eu/setting-up-an-ecraft2learn-learning-environment/>

THE DIGITAL PLATFORM

The digital platform consists of a Unified User Interface (UII) that provides a single user gateway to all the digital tools, software and resources students and teachers will require when participating in eCraft2Learn projects. It also consists of a teacher interface where the UII can be configured for different student sessions/projects and the learning analytics tool can be accessed.

The UII is the core of the eCraft2Learn ecosystem. We recommend that you take some time exploring both teacher and student interfaces and the various software, tools and resources available within the platform to familiarise yourself with this prior to embarking on a project with students.



The UII can be accessed at:
<https://ecraft2learn.github.io/uii/>



[Download manual for LA](#)

[Refresh dataset from server](#)

[Load dataset from file](#)

[Create new session](#)

[Reset all](#)

Real-time classification off



The Learning Analytics teacher interface can be accessed at:
<https://ecraft2learn.github.io/learning-analytics>

THE COLLABORATIVE EDUCATOR COMMUNITY

CREATE Connect is an open-source social community platform for STEAM educators. This allows like minded educators to connect, communicate and collaborate with each other. Within the platform a specific user group has been set up for eCraft2Learn. Educators will be able to join the eCraft2Learn group and connect with each other. It will provide a platform for sharing projects and examples of student outcomes, discussing experience and expertise. Users will also be able to set up their own private eCraft2Learn sub-groups within the community to collaborate on specific projects or initiatives or to connect with local educators also using eCraft2Learn.

We recommend that you join the eCraft2Learn user group as over time it will provide a valuable source of inspiration, ideas and community support.



Access CREATE Connect and join the eCraft2Learn project group at:
<https://connect.createeducation.com/>

Please refer to Teacher Guide 9 Collaborating and sharing in the eCraft2Learn connected community at: <https://project.ecraft2learn.eu/collaborating-sharing-ecraft2learn-connected-community/>



Set up an eCraft2Learn workspace

SELECT A SUITABLE WORKSPACE

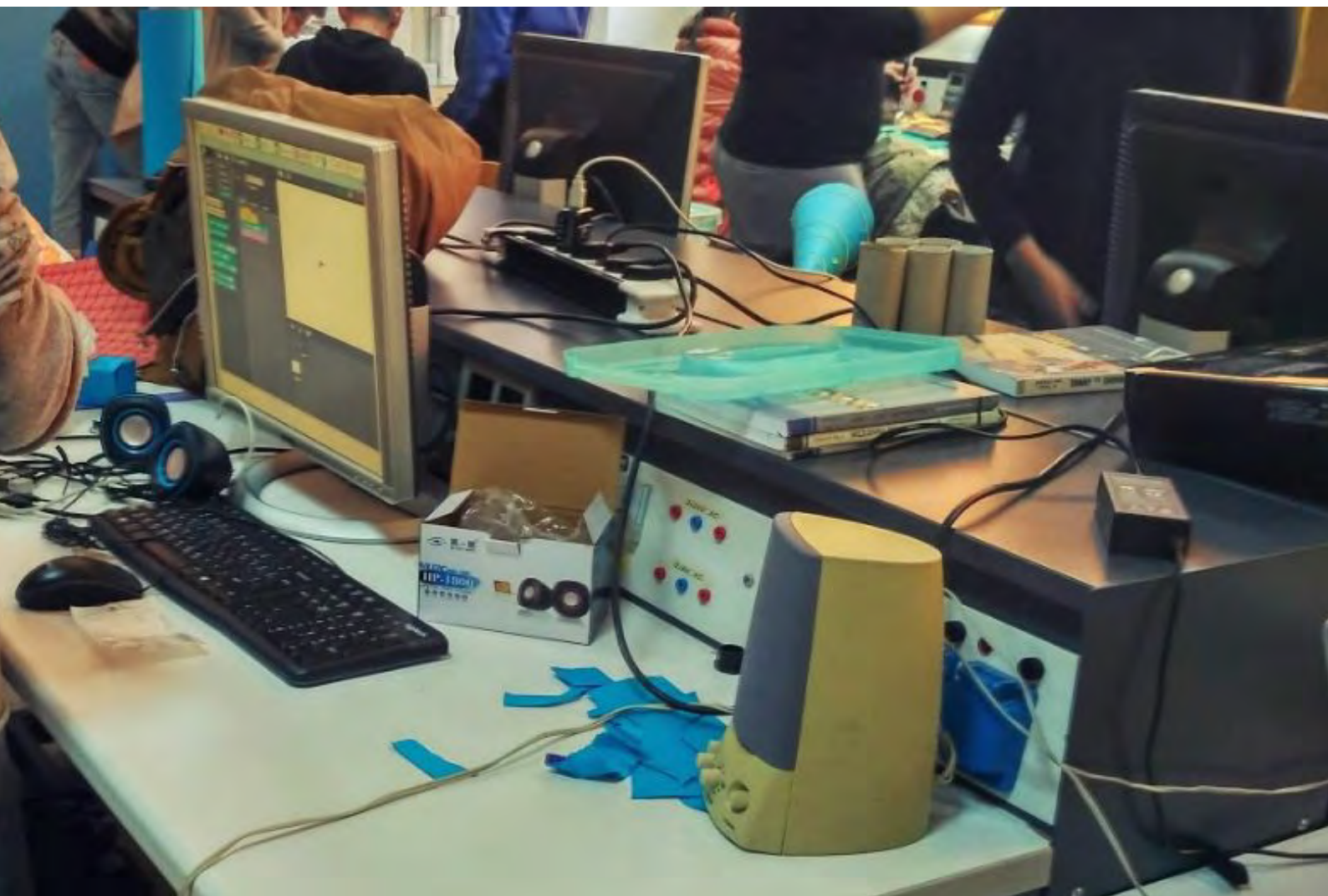
First of all you need to identify a suitable workspace for running eCraft2Learn projects. This can be an existing classroom or a dedicated space. The room will need to accommodate the number of students taking part in the project at any one time.

The room will need to have enough workspace to accommodate all of the hardware with enough electric power points in suitable locations around the room.

The room should also have suitable storage to accommodate the electronics and craft resources, materials and tools as well as a safe space to store and/or display the students project work.

ORGANISE THE WORKSPACE

The workspace should be organised to provide a workstation for each group of students. This would need to consist of a table or group of tables that are large enough to accommodate all the technical hardware as well as providing enough space for students to organise craft and electronics materials and resources and use the tools.

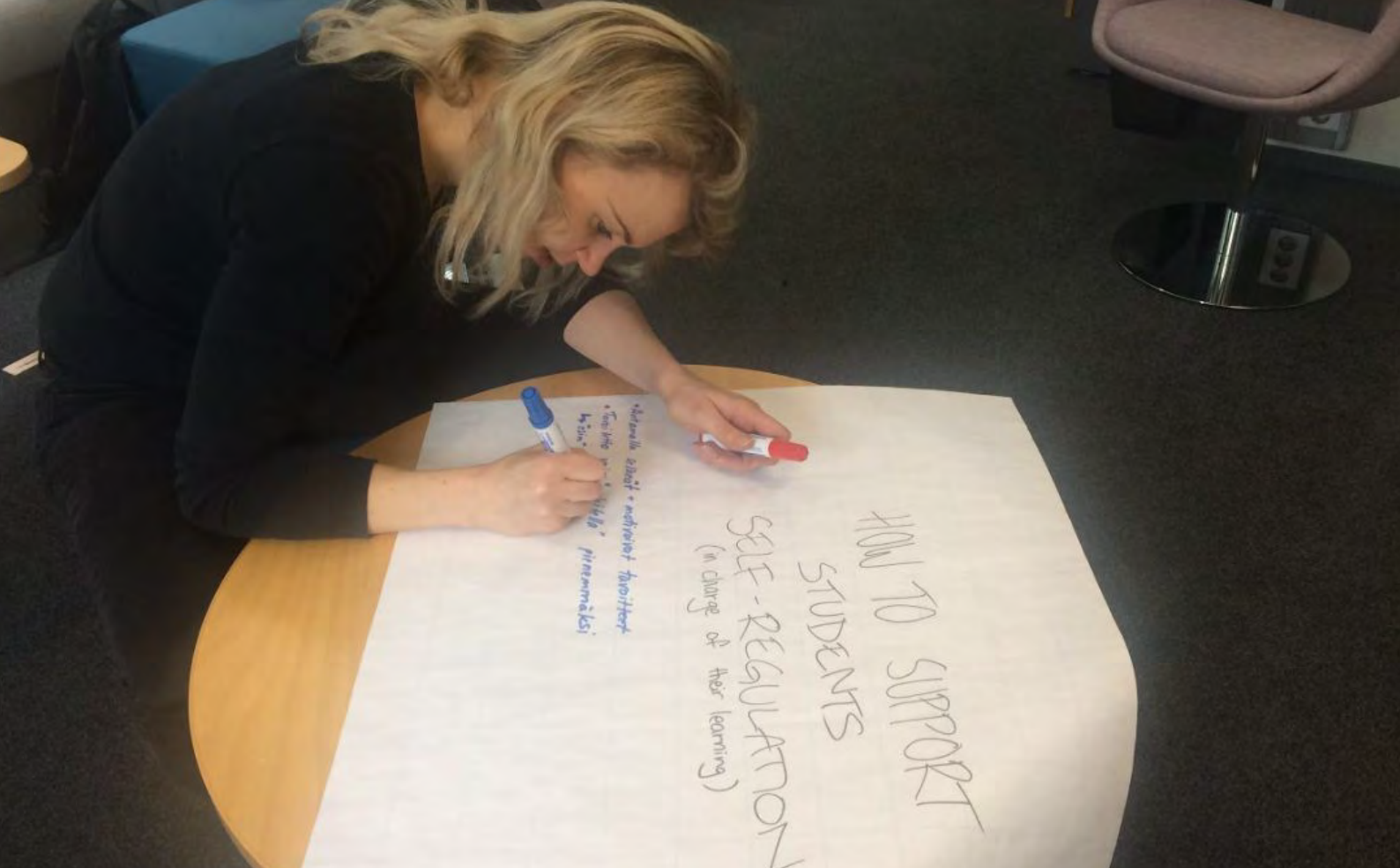


Where possible each group of students working on a project should be able to sit together, ideally they should be able to sit around a table rather than in rows as this will encourage collaborative working.

SET-UP THE GROUP WORKSTATIONS

Finally each group workstation will need to be set up with the required hardware configuration.

To access a list of recommended equipment and detailed instructions for setting it up, please refer to Teacher Guide 3 Setting up an eCraft2Learn learning environment - hardware, software, tools and materials at: <https://project.ecraft2learn.eu/setting-up-an-ecraft2learn-learning-environment/>



Develop your own knowledge and skills

We recommend that you spend some time initially in developing your own knowledge and skills prior to running a project, especially if you are new to DIY electronics, maker technology and project based learning methods. Then you can develop your skills further along with the students during a project.

UNDERSTAND THE PEDAGOGICAL MODEL

It is important to understand the eCraft pedagogical model before embarking on an eCraft2Learn project. The key elements are:

- Project and inquiry based learning approach
- Students working collaboratively in project teams
- Role of the teacher as a coach
- The five stage eCraft2Learn project framework

A good overview of the pedagogical model is provided in Teacher Guide 1 Introducing eCraft2Learn: <https://project.ecraft2learn.eu/introducing-ecraft2learn/>

Teacher Guide 5 Designing and Running an eCraft2Learn Project, provides much more detail, practical examples and advice for implementing the pedagogical model: <https://project.ecraft2learn.eu/designing-running-ecraft2learn-project/>

REVIEW THE DOCUMENTATION AND RESOURCES

The eCraft2Learn Project has produced a wealth of documentation to support the project. Alongside the various teacher guides a good source of reference are the open education resources and the teacher training manual.

The Teacher Guides can be downloaded at:

<https://project.ecraft2learn.eu/getting-started-with-ecraft2learn/>

The Open Education Resources can all be accessed from within the eCraft-2Learn Project Platform (The UII) at: <https://ecraft2learn.github.io/uii/>

You can access technical training documentation in Project Report D3.4 Section 3 at:

https://project.ecraft2learn.eu/wp-content/uploads/2018/05/eCraft2Learn_D3.4_M16_Manual-of-Craft-and-Project-based-Learning-STEAM-Training-for-Teachers.pdf

PRACTICAL ACTIVITY

Finally we recommend that you experiment with the various software tools and hardware. The best way to do this would be by working through a series of practical tasks or trying out one of the exemplar eCraft2Learn projects yourself.

Alternatively perhaps you could work with a small group of colleagues on a joint project, this will allow you to learn from each other, help and assist each other through the process.



Your first eCraft2Learn project

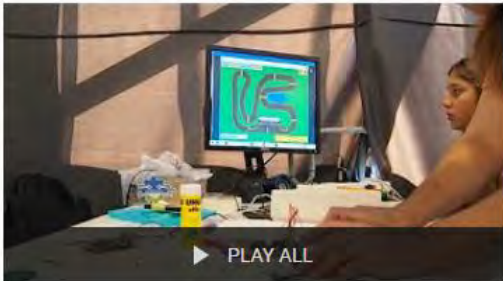
Running an eCraft2Learn project is likely to be very different to running your usual curriculum projects and activities. Primarily because the projects will be more free flowing and not as structured as what you will be used to.

This section gives a brief overview of the key areas to consider, however please refer to Teacher Guide 5 Designing and running an eCraft2Learn Project to learn more at:


<https://project.ecraft2learn.eu/designing-running-ecraft2learn-project/>

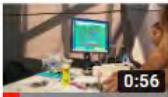
PROJECT PLANNING


When planning your first eCraft2Learn project it may be beneficial to either run one of the eCraft2Learn exemplar projects as these have been successfully trialled with teachers and students during the eCraft2Learn project pilots.

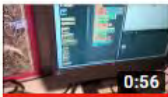



eCraft2Learn Projects
12 videos • 147 views • Last updated on Nov 6, 2018


 eCraft2Learn **SUBSCRIBE 20**

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1 eCraft2Learn Good Practices - The 'Video Game Joypad' Project
eCraft2Learn 0:56
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2 eCraft2Learn Good Practices - The 'Sunflower' Project
eCraft2Learn 1:00
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3 eCraft2Learn Good Practices - The 'Solar Panel' Project
eCraft2Learn 0:56
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4 eCraft2Learn Good Practices - The 'Small Village' Project
eCraft2Learn 0:41
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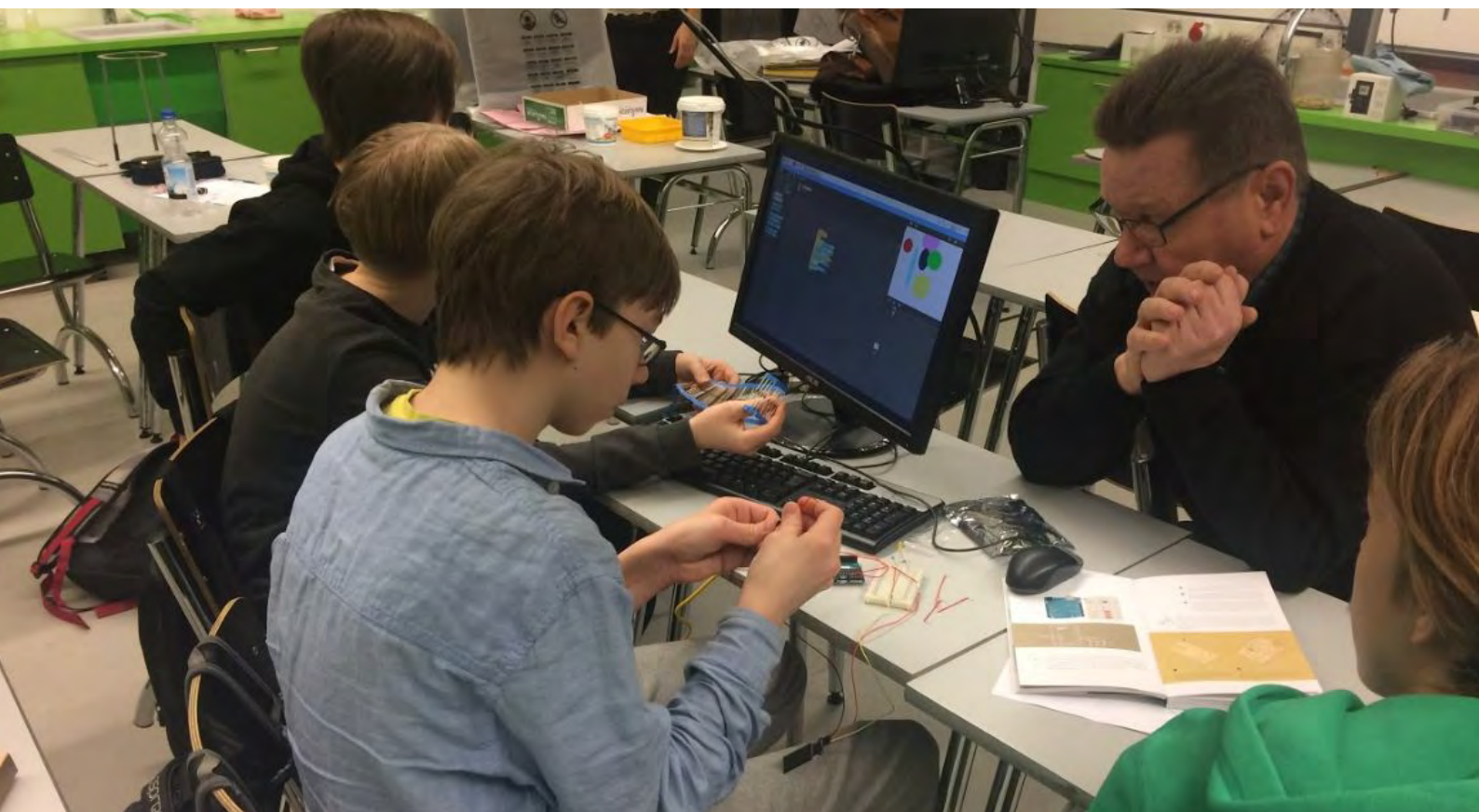
5 eCraft2Learn Good Practices - 'Shy Rabbits' Projects
eCraft2Learn 0:53

The Exemplar Projects videos can be viewed at: <https://www.youtube.com/watch?v=QZHyYlv87no&list=PLgKtrHOACe-J6bvq-ka5ue4ERs142f4De>

Alternatively if planning your own project, you may wish to plan it around an existing project or curriculum topic you are already familiar with, as this will allow you to focus on adapting to the role of a coach rather than focusing on the subject matter.

Running the project

When running the project with groups of students, the main consideration is in your role as a coach. Your role will be to encourage students to choose their learning paths and to learn on their own or in small groups, whilst guiding students and provide them with real-time feedback. In this way, students are supported to become more self-regulated and in charge of their own learning processes.



When working through the project, students will follow the 5 stage pedagogy, however it should be highlighted that this is not a strictly linear process, they should be constantly reviewing their project and encouraged to go back and revisit stages as the project dictates to make refinements and changes using the experiences gained up to the current stage.

Evaluation and further project development

As your first project draws to a close it is important that as well as the students reflecting and evaluating on their project, that you do the same. Use lessons learned from using this different pedagogical approach to inform on future projects and think about allowing students more freedom in selecting their own project topics.

Next Steps

SHARE AND COLLABORATE

Once you have run your first eCraft2Learn project, it is a good time to share your experiences and project outcomes with other educators. This will not only help other educators but also give you the opportunity to showcase your students work and receive feedback and practical tips. Being actively involved in the eCraft2Learn educator community group will help the group to thrive and you will benefit and learn from each other. You may also choose to collaborate with educators in developing and running joint projects between different organisations.



Access CREATE Connect and join the eCraft2Learn project group at:
<https://connect.createeducation.com/>

Please refer to Teacher Guide 9 Collaborating and sharing in the eCraft2Learn connected community at: <https://project.ecraft2learn.eu/collaborating-sharing-ecraft2learn-connected-community/>

DEVELOP YOUR PRACTICE FURTHER

Once you have completed your first set of student projects, running the next project will be easier. Take what you have learned from the first project and develop your practice further with these suggestions:

- Develop your role as a coach even more in the next project, providing less teaching input and directing students to find their own solutions.
- Consider providing even more freedom to students with less guided projects or even allowing individuals to investigate their own projects.
- Learn a new aspect of the technology e.g. a software tool in the UUI that you haven't used yet or how to do something different with the technology e.g. how to integrate different electronic components.

EARN BADGES

Self evaluate and track your own development and progress in eCraft2Learn and earn eCraft2Learn Educator badges through the eCraft2Learn CREATE Connect Community.





<https://project.ecraft2learn.eu/>

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