

TheDexterLab: Supporting teachers in the context of social distancing, reinforced health protocols and hybridization of educational modalities



TheDexterLab project aims to develop simple and affordable solutions to maintain scientific experimentation activities within and outside the classroom stimulating students' creativity and digital tools.

TheDexterLab project started on the first of April 2021 under the coordination of the University of Aix-Marseille. Funded by the Erasmus + programme as part of the extraordinary calls for proposals launched in 2020 to support the preparation for digital education in the face of the COVID-19 challenges, it will last 2 years, with a dedicated budget of 250 913 EUR.

PROVIDE THE SAME OPPORTUNITIES FOR EVERYONE TO ACCESS SCIENCE EXPERIMENTATION ACTIVITIES

Access to scientific instrumentation in secondary education is often hindered by the unequal availability of resources in the educational world between countries and schools across Europe. This leads to a low diversity of experimentation tools available, complicating the possibility for teachers to develop large- scale STEAM (Science, Technology, Engineering, Arts, Mathematics) activities, in an interdisciplinary logic and focused on a better understanding by the students of the societal challenges of our century, illustrating the link between scientific and technical issues and their impact on the citizens' daily life.

In addition, the current COVID-19 crisis has accentuated the inequalities between students because of the necessary but complex hybridization of the learning modalities regarding, for instance, the access to educational material and to digital resources.

Today impacted by both sanitary and distance learning issues, experimental activities are hence heavily affected, yet crucial in the understanding scientific processes.

TheDexterLab project was designed to respond to this short- and long-term challenge by creating several resources associated with scientific experimentation protocols, making it possible to maintain and stimulate the use of active pedagogies in secondary education. These resources include :

- The **development of scientific instruments for data collection and analysis**, available to all at low cost , modular and reusable, conceived through a Do-It-Yourself approach for being easily replicable at school, within fablabs or at home.
- The **development of simulation tools**, making it possible to overcome the lack of financial resources and to maintain scientific activities without degradation, whether the material is available for the student / class, with the underlying objective of stimulating digital programming skills of the learners.
- Finally, **supporting documentations and guidelines** allowing the proper understanding and implementation of TheDexterLab protocols under ideal conditions, within formal and informal learning ecosystems.

PARTICIPATE IN THE DEVELOPMENT OF CURIOSITY FOR SCIENCES

Nowadays, interest in science education is experiencing a decline shared by all the European educational systems. This situation is worrying as it affects the choice of students to undertake scientific careers after secondary school and creates new inequalities among learners in motivating everyone, particularly young women and audience less attracted by technical issues, in the subjects concerned, yet crucial in the understanding of societal issues often guided by underlying scientific issues.

In this context, TheDexterLab wishes to provide tools tailored for the teachers in order to support the development of active and meaningful teaching practices, i.e. how the experience carried out allows the students to better understand a larger societal issue, in order to stimulate the learners' interest in the STEAM learning spectrum .

Promoting students' active position is enabling them to feel they are impacting and mastering both the content of their learning. Being involved actively in the creation, handling and use of the experimental tools will even more stimulate their motivation. As such, TheDexterLab will act as a great lever to improve the way in which the learners perceive themselves within scientific experimentation, by jointly providing curiosity and a feeling of mastery.

IN DETAILS

The project will be based on 4 achievements leading to the following results:

- The production of a **compendium of 25 scientific protocols** aimed at sustaining STEAM activities during the COVID-19 crisis and beyond .
- The **creation of scientific instruments** to be created under DIY strategies and modalities thus mixing electronics, computational thinking, programming, and manufacturing skills.
- The creation of **simulation scenarios** associated with each protocol and made available to all on an open-source platform.
- The creation of **additional documentary resources** to support teachers, families, and actors of non-formal (extracurricular) training to facilitate the implementation of TheDexterLab strategy, backed by training content, webinars, and the implementation of an individual assistance service.

KEY INFORMATION

Leader: Sébastien NEDJAR

Coordinating partner: Aix-Marseille Université

Starting date: 01/04/2021

Ending date: 31/02/2023

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Willing to learn more or join our working groups? Find your local contact here:

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