



## DigiEduHack Solution Padua - Digital Learning Innovation Challenge: Padua - Digital Learning Innovation Challenge 2020

# DALP: DIGITALLY AUGMENTED LEARNING PRODUCTIVITY

## Introduction

Facing new educational challenges needs open mind approaches, upscaling learning productivity by means of innovative use of novel digital tools and media. **DALP** promotes a strategy for this, through “education walks” in which teacher and learners manage together their respective improvement.

## Team: DALP Team

### Members roles and background

Franco Bonollo - *President of Scuola di Ingegneria - University of Padova*

Monica Fedeli - *Padova University*

Felicity Parsisson - *Futurelearn*

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Patrik Svanängen - *RISE - Research Institutes of Sweden, Jönköping*

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## **Contact details**

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## **Solution Details**

### **Solution description**

The DALP proposes a new learning paradigm that overcomes the obstacles posed by the current pandemic (see solution context) and fosters the growth of productivity of educational institutions, especially universities, and of their students' learning.

The project is based on restructuring the relationship between teachers and students, according to new organizational modalities and timing education differently.

The DALP plans to develop educational activities in three phases:

**1 - Early distribution** of multimedia contents to students.

**2 - Follow-up Q&A sessions:** further and deeper discussion of these contents between students and teachers.

**3 - Periodical presentations by the students** of the contents they have developed.

**Phase 1:** educational materials (pdf documents, videos, software applications, power-point presentations, etc.) are made available previously to students to stimulate their self-learning, a habit they have acquired by surfing the web in search of content that interests them. Self-assessments tools for the learners are included into the learning platform in which the learning content is stored, in order to enhance their self-responsibility.

**Phase 2:** the Q&A sessions consolidate the relationship between teachers and students, fulfill the need to complete the educational process that has already begun through the initial self-learning phase, and address the students' doubts and curiosities. This blended approach involving less lecturing and more discussions and problem solving activities facilitates the assimilation process.

**Phase 3:** the students' presentations of the contents they developed also test their understanding of the subject. Accurate and exhaustive presentations require clear and comprehensive knowledge, which is the actual purpose of learning.

## **Solution context**

The current pandemic is having a double effect on education.

On the one hand, it has made the traditional face-to-face educational setting impossible. It has therefore separated and alienated the students from their teachers.

On the other hand, this crisis has induced us to rethink the actual value of the traditional classroom and reflect on the alternative possibilities of distance learning.

We are facing the need to conceive new modes of education by employing modalities and technologies that are still largely unexplored in teaching.

This particularly critical context is turning into a crucial opportunity to revisit our belief and knowledge about education and its relationship to new technologies of virtual communication.

During these last few months of separation between learners and instructors all over the planet, we have clearly realized that merely moving the class to a virtual platform cannot replace face-to-face learning.

The almost total elimination of the relational, emotional and motivational aspects of learning deprives the educational experience of its most crucial dimension, i.e. what Gianni Rodari, one of the most important educators and authors of children's literature, defined as the meeting "of the humanity of the student through the humanity of the teacher".

The radical change in the context of training activities requires an equally radical change in the paradigm of traditional training: the proposal of the DALP Project will maintain its value even when the pandemic will cease to take effect.

## Solution target group

Education is a fully transversal process, involving persons from primary schools (and even before), through high schools and Universities, to professional career (and even later), both in the role of learners and teachers. Thus, the first-level target groups of the DALP solution are widely distributed:

- Teachers & School Students
- University students and Professors
- Professionals and trainers involved in lifelong learning

Education is also a process working on a higher scale, which has a fundamental role, in a societal context, for the development of Institutions and Companies. They can be identified as the second-level target groups for DALP solutions.

The ambition of DALP is to offer customisable digital strategies and methods, which can enhance, improve and exploit the learning productivity both of first- and second-level of target groups of the overall education process.

## Solution impact

Impacts of the DALP solution can be estimated on different levels, and are the result of using new tools and strategies for augmenting quality of learning processes, avoiding the detrimental effect of using new tools with old and closed mind approach. DALP **is not a platform** supporting education initiatives, but **a new framework and approach** which, since its pilot-scale validation, aims an integration among all the key-players along the education chain.

Having high productivity learning processes means speeding up all education stages, with increased performance in students and professionals careers. Flexibility and customisation of learning routes will implicate learners to be more responsible and teachers to be always part of a continuous improvement process. Persons will be central in education process, and digitally supported interactions and crosscutting approaches may have enormous societal impact.

Digital classes,

- if properly managed, can be constituted by a high number of international students,
- with new and innovative tools and methodologies can receive high quality education,
- with commonly established criteria for self- and external evaluation.

Quantifying these impacts at long term is really impossible, but the size of the pilot-scale potential impacts of DALP is however impressive, thanks to the involvement of

- Universities with thousands of students,
- various well established providers of lifelong learning programs addressed to thousands of professionals, workers and companies,
- digital platforms devoted to multi-level education paths.

## Solution tweet text

DALP: a new learning paradigm

## Solution innovativeness

DALP is a methodology suitable for the main stages of the educational process, designed to take advantage from, integrate and “coordinate” experiences and tools developed by the work team.

**Phase 1. Anticipated distribution of multi-media contents**, blending innovative tools:

- **Lightboard** for empathic, easy-to-make video lectures, with no post-production
- Virtual ICT labs as **Taliercio2020**, accessible anytime and everywhere by learners and equipped with the state-of-the art software
- **IdeasGym** Advanced learning platform to build Technology Capacities, offering the sensation of hands-on experience by simulations and gamification
- **Federica.eu**, “digital factory” for continuous innovative learning, offering Higher Education programs as MOOCs
- Short videos explaining experimental and real-life concepts
- Re-arranged conventional textbooks, with roadmaps supporting the study, and e-books containing text and links to online activities and multimedia

**Phase 2. Performing Q&A sessions:** humans are driven by the curiosity of things. Often, “orderly learning” is boring and “punishing” for students. The innovative concept is to make students ask questions first, let them think from a logical perspective and finally discussing topics and ideas. In this way, students and teachers walk together and are focussed on issues really relevant for both of them. This “education walk”, due to ICT and AI tools, can involve a potentially unlimited number of persons, without losing quality of information. Learning process becomes learners- centered. Students “make” instead of just “listen”, having the time to pose the right questions.

**Phase 3. Continuous presentation of the elaborated contents** finalises the “education walk”. Learners are fully free in terms of media for contents elaboration, using lightboard and virtual labs, but also producing videos, documents, presentations by themselves. Formative assessment is performed to give continuous feedback to learners. By peer review learners acquire evaluation competencies and critical thinking.

## Solution transferability

DALP solution transferability is maximum, since the key-idea is that of taking advantage and coordinate systems and tools which are already tested and can be made available in short time. Obviously, some pilot-experiences are needed to assess the strategy and the methodology. The competitive advantage of DALP is that of involving in the work team all the players of the educational chain (see solution team work): Universities and students, Schools, providers of professional and lifelong education, companies, associations of companies. Contacts with other reference persons and institutions are in progress to develop a **Working Agenda for Digitally Augmented Learning Productivity**, based on the already existing “Teaching4Learning” group established at Padova University.

For the DALP team, it is clear that a so-systemic concept is not simple to be introduced, tested and validated, and that it is not a short-term task. But, on the other side,

- The process has already started, with specific experiences,
- The work team to start activities has been already identified,
- This team, involving well reputed international Universities and Institutions, already has a relevant dissemination potential, to support solution transferability,

- The roadmap for solution transferability is already part of the Working Agenda for DALP.

## **Solution sustainability**

The sustainability of DALP can be described from different perspectives.

**Environmental sustainability:** digital solution makes possible world-wide international classes, without the need of travelling; a Life Cycle Assessment of the education process may be conducted, certainly demonstrating its reduced environmental impact with respect to conventional approaches.

**Economic sustainability:** DALP approach supports training initiatives performed optimising time and distribution of effort, both for learners and teachers; the advantage, especially for companies and workers involved in lifelong learning courses is evident.

**Technological sustainability:** tools adopted for DALP solutions are innovative, but already at an advanced development stage; DALP integrates and optimises novel and upgraded instruments, enhancing their potential.

**Societal sustainability:** quality of life of all the persons involved in DALP-targeted initiatives will be increased: more time available, flexibility, involvement in own education with an active role; this may be the key for a knowledge- and self-commitment-based societal changes.

**Institutional sustainability:** Education and Trainings Institution can strengthen their mission and become worldwide visible; sustaining the DALP approach can be a part of their development strategies.

## **Solution team work**

The team work of DALP is highly international (14 Countries represented) and collects all the key-players in the education chain:

- Teachers of primary/high Schools
- Students and Professors of Universities
- Professional trainers involved in lifelong learning programmes
- Associations representing a relevant number of Companies

This allowed the collection and comparison of multi-variate viewpoints, which have been managed and harmonised in the DALP vision.