

WHAT IS PELARS?

Practice-based Experiential Learning Analytics Research And Support (PELARS) is a project that aims to generate, analyze and provide feedback for analytics derived from hands-on, project-based learning activities.

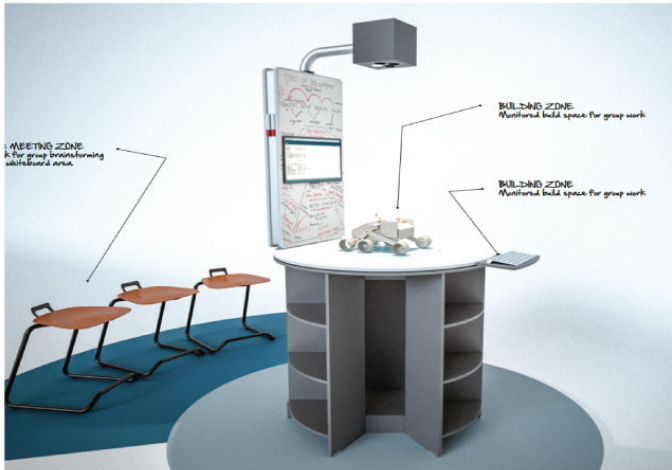


Figure 1: Design Sketch of the smart furniture

AIMS AND GOALS

The overall research aim of the project can be summarized as:

How can physical learning environments and hands on digital fabrication technologies be designed to support ambient and active data collection for analytics?

The goals of the project are to explore:

- Can contextual computing, tracking and tracing technologies help empower learners and teachers towards more hands-on practices inside the classroom (STEM/STEAM)?
- What new data analytics can be derived from the hands-on learning in these workshop like environments?
- How could such data inform constructivist and diverse practice-based learning models?

APPROACH

PELARS uses a design-research approach that includes contextual user studies, diverse prototyping with different stakeholders that combine iterative processes to generate the user and system requirements.

The project captures the work-flows and learning traces for generating analytics. Ambient data streams are collected from computer vision, furniture, and programming environments. The PELARS system provides simple logic and reasoning supported by visualisations.

Additionally active data from user generated content via mobile devices and web is collected and stored temporarily. The reason for combining both types of data (ambient and active) is to better understand the different research problems by converging both quantitative (broad numeric trends) and qualitative (detailed views) data.

NEXT STEPS / DISCUSSION

One implication of the poster is to explore how the PELARS learning analytic system can be used to investigate face-to-face collaboration by capturing traces from the system while supporting open ended and hands-on learning in lab settings.

The current work in the project raises questions for the CSSL community across the design of the learning environments, the technological system, and the design of the educational activities.

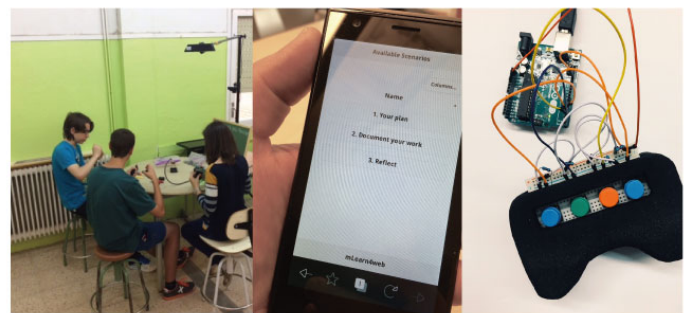


Figure 2: Typical lab environment, mobile tool, & student project