

TE4CHING
4 LEARNING @UNIPD

Persone, Ambienti, Didattica:
verso un modello integrato per l'innovazione



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

18 e 19 maggio 2023



**SMART
CLASSROOM
PROJECT**

BCN



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PROJECT
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***Research group and advisory
in innovation of learning
spaces.***

smartclassroomproject.com

Guillermo Bautista- UOC
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This talk...

- The problem
- The solution
- Design
- Research
- Outcomes
- Assessment and advisory

Smart Classroom Project: learning spaces design from research.

Dr. Guillermo Bautista - UOC

Twitter: @smart_open

Instagram: @smartclassroom

Univeristà degli Studi di Padova (19/5/2023)

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om

THE PROBLEM





A classroom according to Google



El curso escolar arranca con 58 aulas y 90 profes...
elbala.com



CSIF exige negociar la vuelta a las aulas...
ceulatr.com



Educación en Baleares: El Gobierno sopesa q...
ultimahora.es



La comunidad educativa celebra la vuelta a las aul...
moncloa.com



Vuelta al cole con aulas climatizadas para un...
solucionesintegralesendesa.com



La modernización llega a las aulas | %bitle...
iday.es



Escuela Técnica Superior de Ingenieros en Topogr...
topografia.upm.es



El ambiente en las aulas, hasta cinco veces...
diariosur.es



Volverán los alumnos a clases? Claves del posib...
20minutos.es



Aulas abarrotadas de alumnos: qué ha...
formacionyestadia.es



Tecnología en las aulas: modelo actual | Elch...
elcheibermatico.com



aulas colegio - Busca de Google (con imágenes) | Ha...
ginterest.es



La Junta amenaza con eliminar 14 puestos de docentes ...
diariodelion.es



La vuelta a las aulas, no tan lejana: Simón pide que est...
lagacetadesalamanca.es



Trasladar las aulas a casa, salvando las distancias | Newtral...
newtral.es



Rebelión en las aulas: Andalucía, Madrid y Murcia rech...
elmparcial.es



Fotos: Guatemala: Aulas que se caen a pedazos | Plan...
elpais.com



Cómo conseguir el doble de aulas (y de maestros) para te...
nuevatribuna.es



El coronavirus vacía las aulas de los centros educativo...
castuera.hoy.es



Cómo y cuándo será la vuelta a las aulas? Hoy podría c...
elcomercio.es



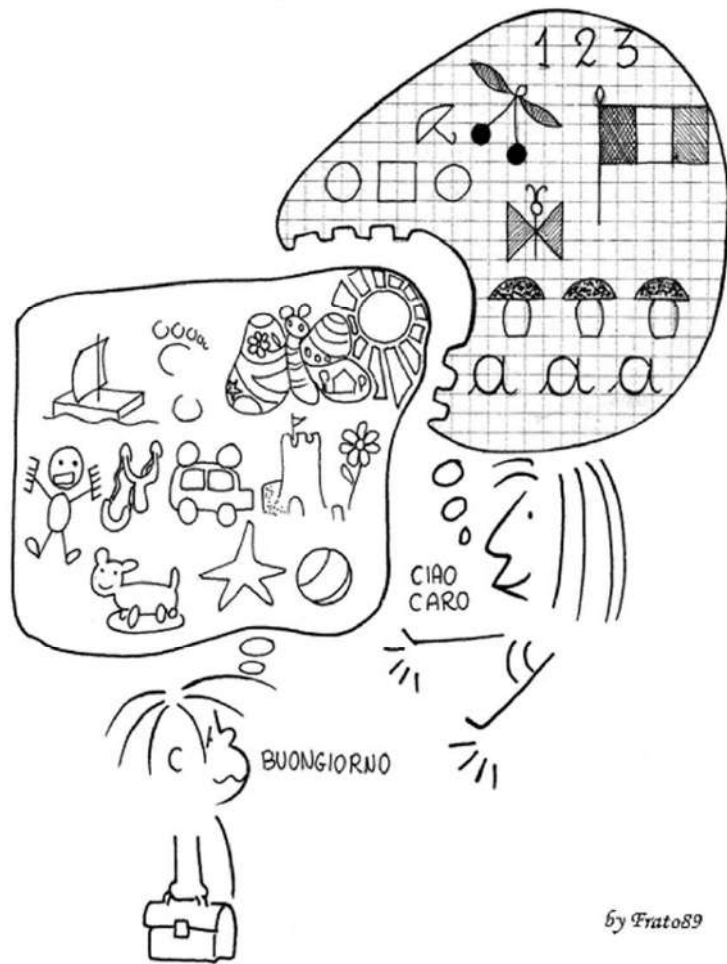
Escuela Técnica Superior de Ingenieros en Topografía, Ge...
topografia.upm.es



Pandemia saca de aulas a más de mil millones de estudia...
matutinografico.com

A smart classroom according to AI





by Frato89



Design learned,
assumed,
not people
centered
from a certain
pedagogical
position

Modern, but still...





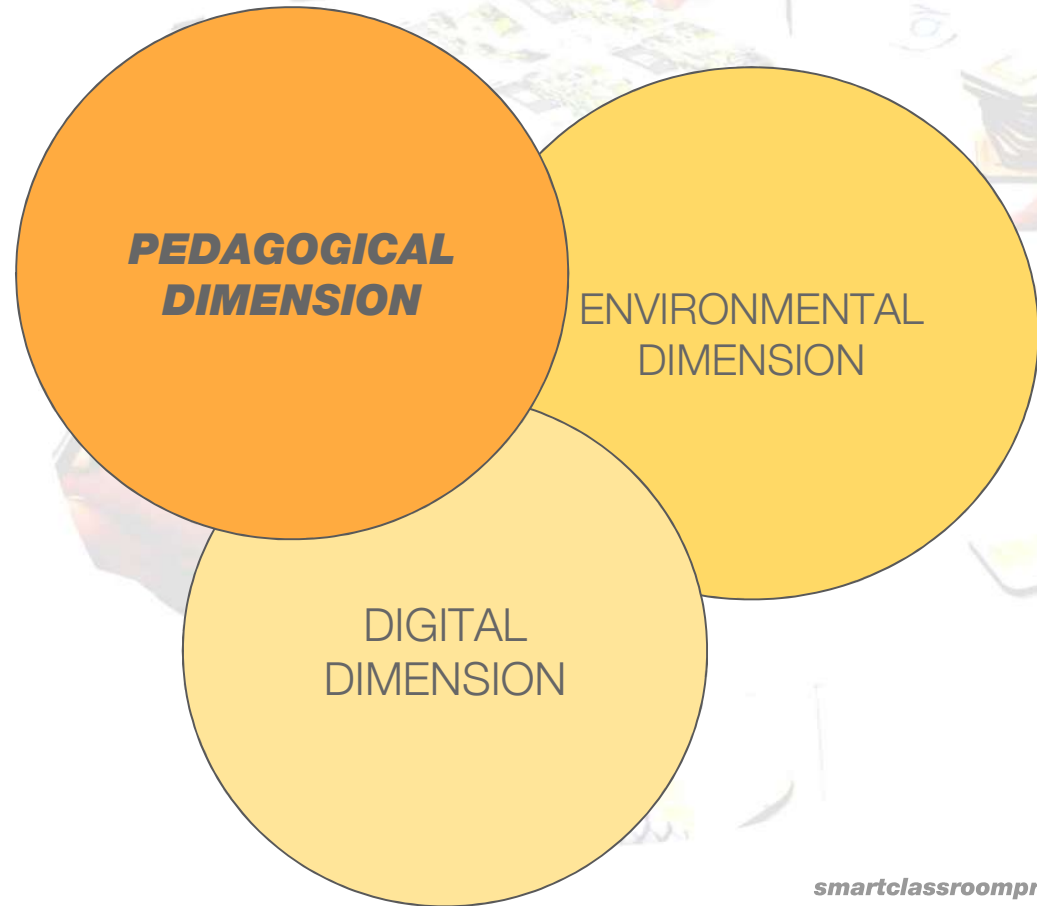
THE SOLUTION

Algunas investigaciones sobre espacio y aprendizaje



- UBIKO Project (2013) - <http://www.ubiko.eu/>- Finland
- Barrett, P.; Zhang, Y. (2010-2015) - ([Report](#) - [Guide](#))- UK
- Byers, T. (2014; 2015; 2018; 2019) - ([ILETC](#)) - Australia
- EDUCAUSE (2017) - ([Book](#)) - United States
- Richardson, C.; Mishra, P. (2018) ([Article](#)) - United States
- Baeta, Z.; Neuza, P. (2018) - ([Future Classroom Lab](#)) - Portugal
- Bautista, G.; Rubio, M.J.; Sánchez, A. (2022) - ([Smart Classroom Project](#)) - Spain.

A multidimensional approach to the investigation of space as a facilitator of learning

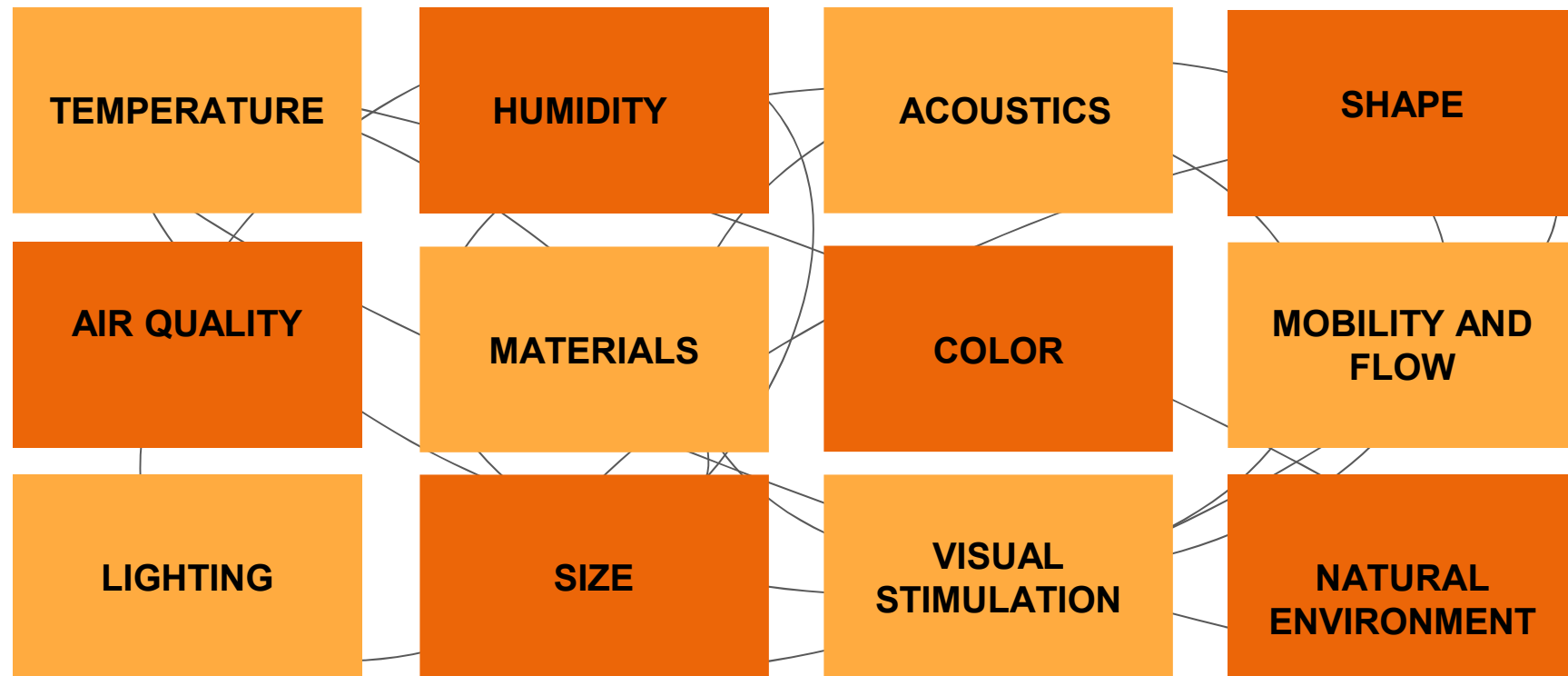




DESIGN

Factors and principles of designing learning spaces





PRINCIPLES FOR THE DESIGN OF LEARNING SPACES

Flexibility



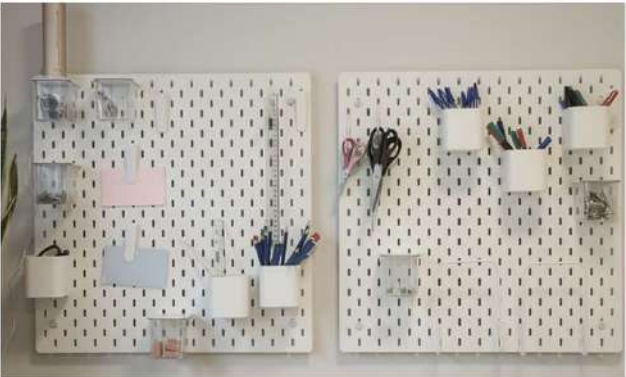
Inclusion and adaptability



Comfort



Multiplicity



Connectivity



Personalization



Order and organization



Opening and connection



Safety and personal well-being



Sustainability





RESEARCH AND OUTCOMES

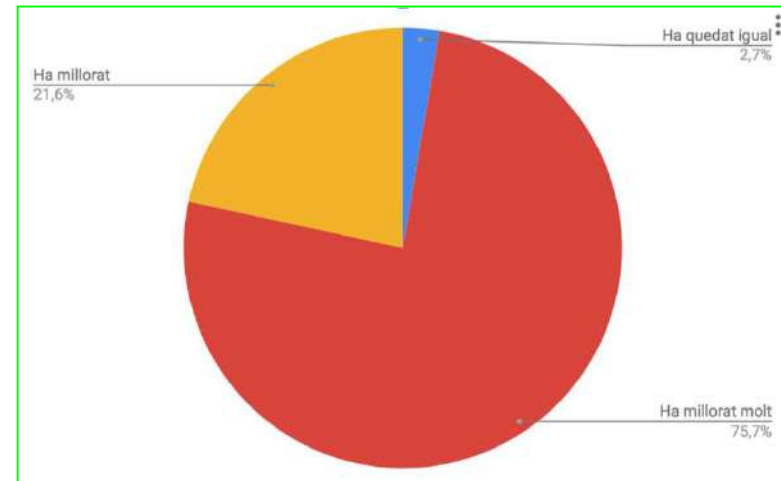
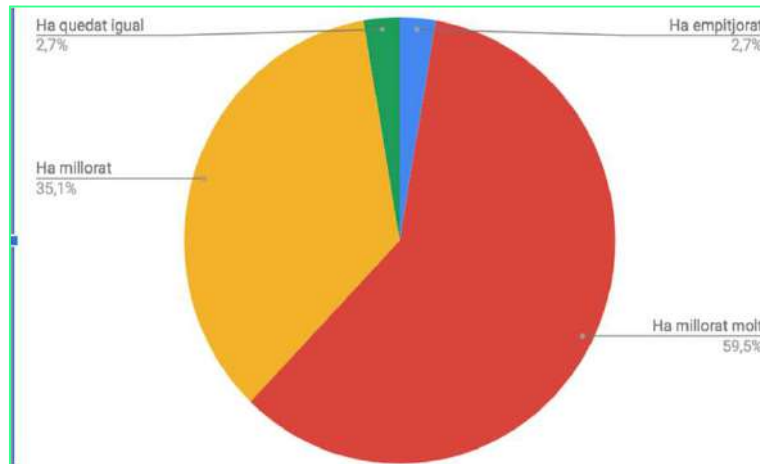
MIXED METHOD EVALUATION

Evaluation of the space base on...

- ***Self reports after use of spaces***
- ***Systematic observation***
- ***Focus groups with teachers***
- ***Focus groups with students***
- ***Measurement of environmental parameters (acoustic level, humidity, temperature and CO2 concentration)***

**** Other data collection systems under study...***

(image, physiological measurement,...)

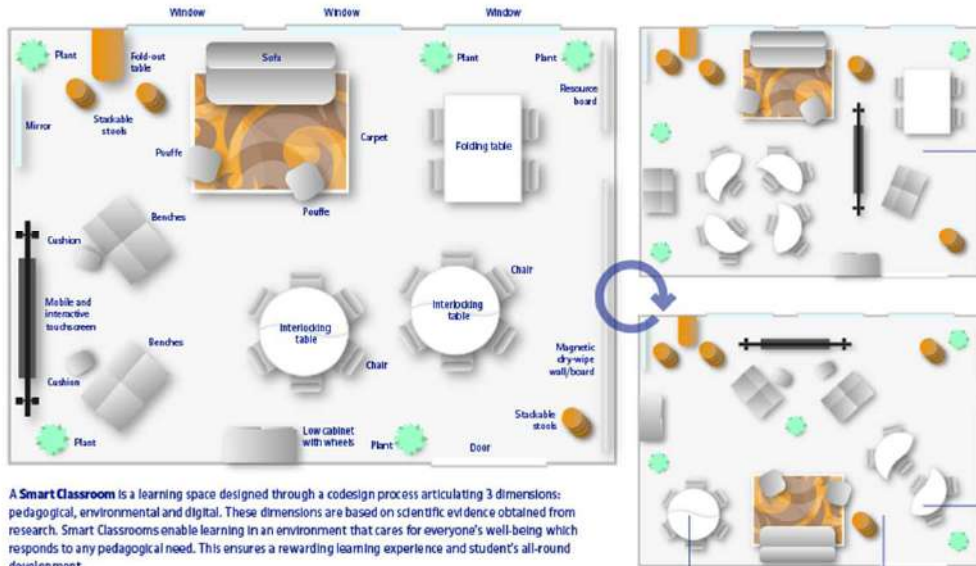


EVALUATED IMPROVEMENTS - SELF-REPORTS

- ***Physical comfort of the classroom (materials, acoustics, lighting, ventilation...)***
- ***Psychological well-being (decoration, naturalization, harmony,...)***
- ***Classroom climate (improves behavior and feeling of care)***
- ***Flexibility***
- ***Attention to diversity and the group as a whole***
- ***Better technology integration***
- ***Improvement of learning (more and better)***
- ***...***

What Is a Smart Classroom?

Learning space design based on research



A **Smart Classroom** is a learning space designed through a codesign process articulating 3 dimensions: pedagogical, environmental and digital. These dimensions are based on scientific evidence obtained from research. Smart Classrooms enable learning in an environment that cares for everyone's well-being which responds to any pedagogical need. This ensures a rewarding learning experience and student's all-round development.

3 dimensions

The main objective of learning spaces research must be pedagogy. This means configuration, design space and environment must be planned, first and foremost, based on pedagogical objectives. Space must also respond to the technological needs and seamlessly integrate solutions always taking into account the specific educational aims.



Flexible spaces
A smart classroom does not set aside specific areas for different activities. Instead, it offers endless possibilities in the same space adapting to the learning needs.



People-centered design and well-being
A smart classroom enhances the learning experience by creating an environment that cares for people and their physical and psychological well-being.



Adaptability to the learning need
A smart classroom allows for a personalized and autonomous learning process and for different dynamics to develop at the same time.



Movement and collaboration in learning
Learning is developed through movement, proactivity and collaboration between teachers and students.

10 key factors for a smart classroom

A guide to designing learning spaces

1. Flexibility
The design and configuration must meet all the learning needs.

2. Adaptability
The classroom and the educational support tools must be able to respond to the wide range of specific educational needs.

3. Comfort
The learning experience must consider physical and psychological well-being. All of the space's environmental parameters must be controlled and regulated.

4. Multiplicity
Adequate models must cover a wide range of educational proposals and learning possibilities.

5. Connectivity
Devices must connect to the internet simply and easily and with top-quality connection.

6. Personalization
Students must identify with and connect to the space and the different dynamics. There must be storage space for their personal belongings.

7. Organization
There must be criteria, strategies, and possibilities to help organize the space's resources and elements and boost their use, accessibility, and functionality.

8. Openness
The configuration and structure must be open to the outside world and other spaces, enabling an unobstructed physical access from indoors to outdoors and vice versa. There must be links to the outside world.

9. Security
Everyone must feel safe and secure when using the spaces and the elements they contain.

10. Sustainability
The spaces must be designed to foster sustainability and recycling, and use non-contaminating, sustainable, environmentally friendly raw materials.



ADVISING AND CONSULTANCY



Phases of investigation and advice



Emergent stage

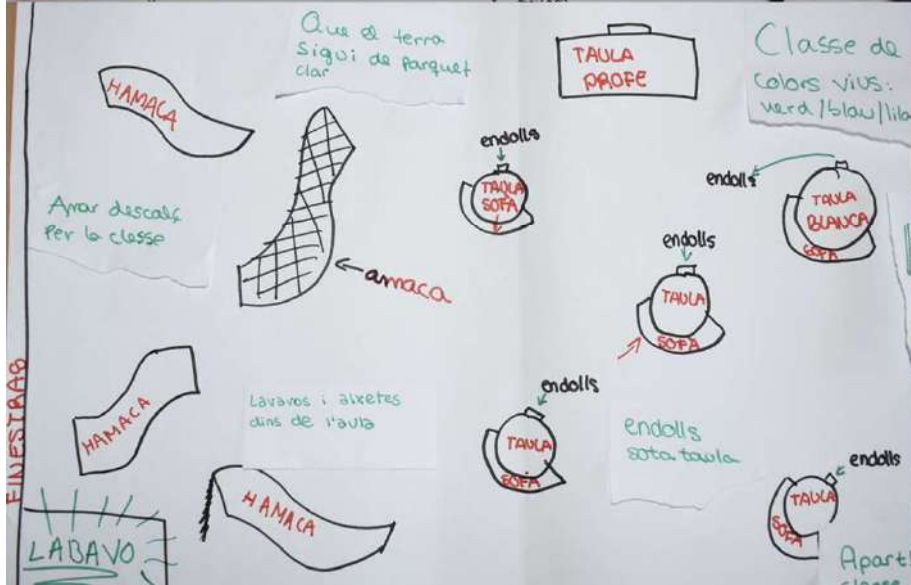
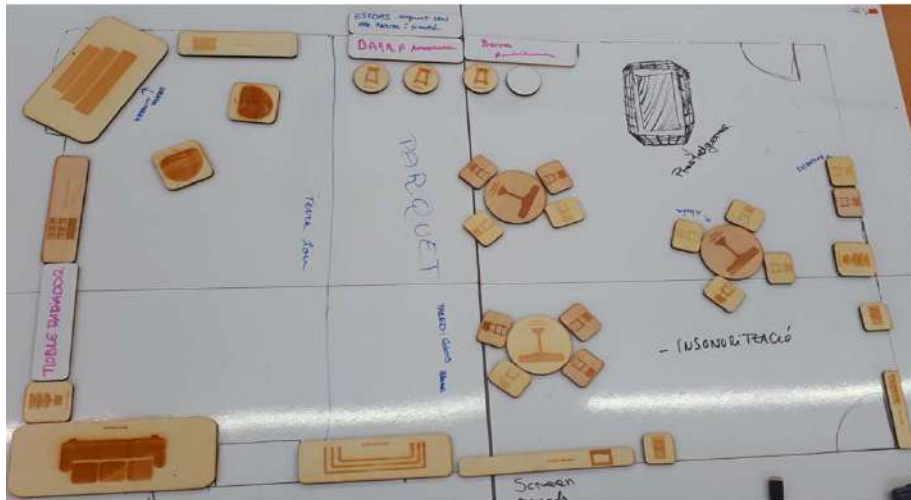




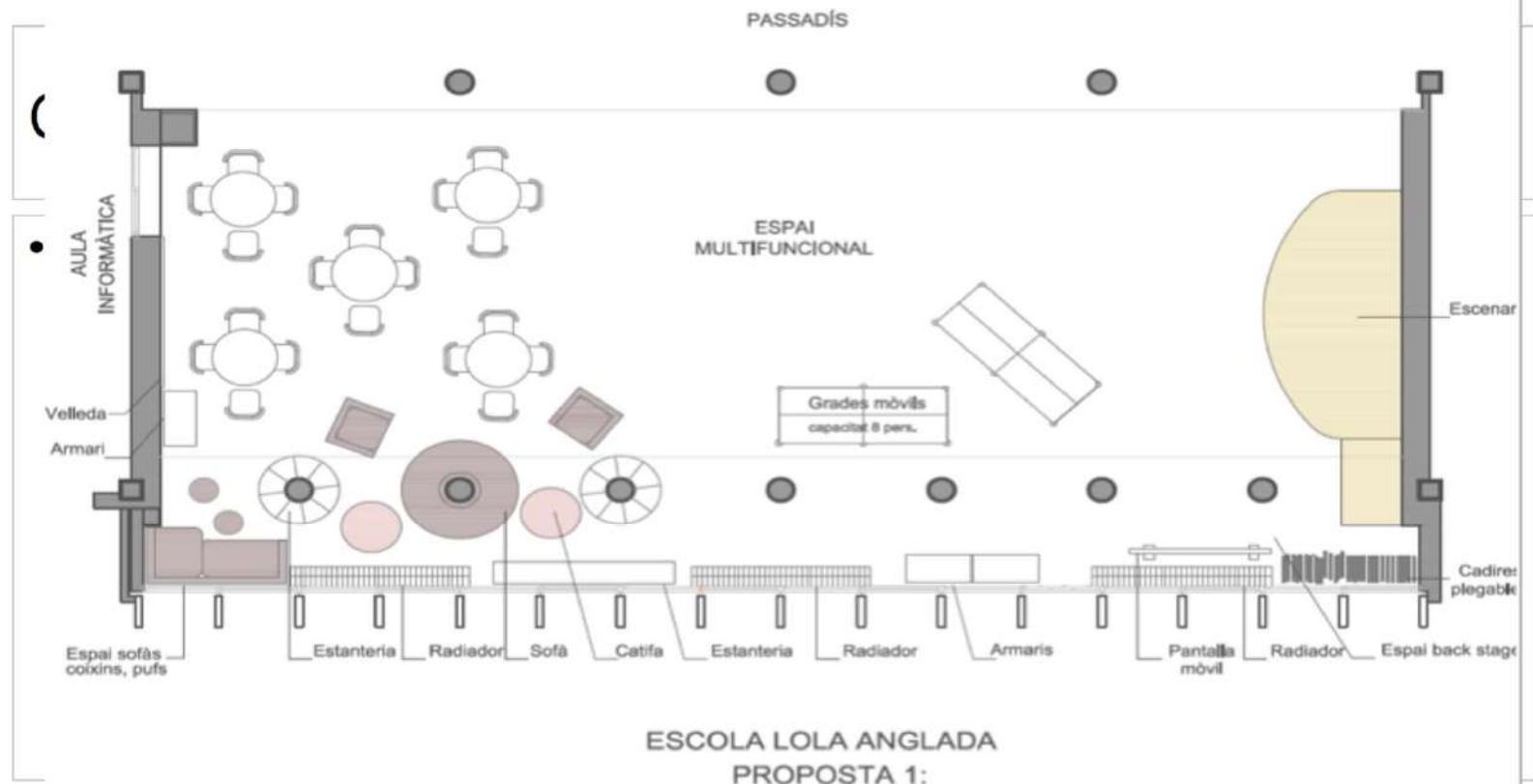
Reflective stage

Arrangement stage









ESCOLA LOLA ANGLADA
PROPOSTA 1:
ESPAI MULTIFUNCIONAL





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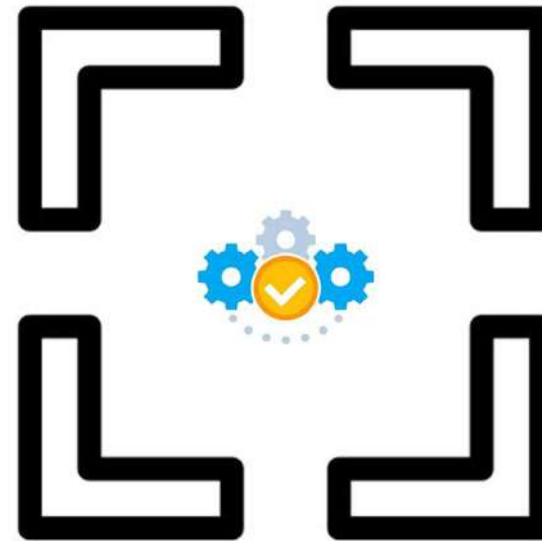
SMART CLASSROOM PROJECT







REAL EXAMPLES



Before...



Before...



After...



After...



After...



After...



After...



Before..



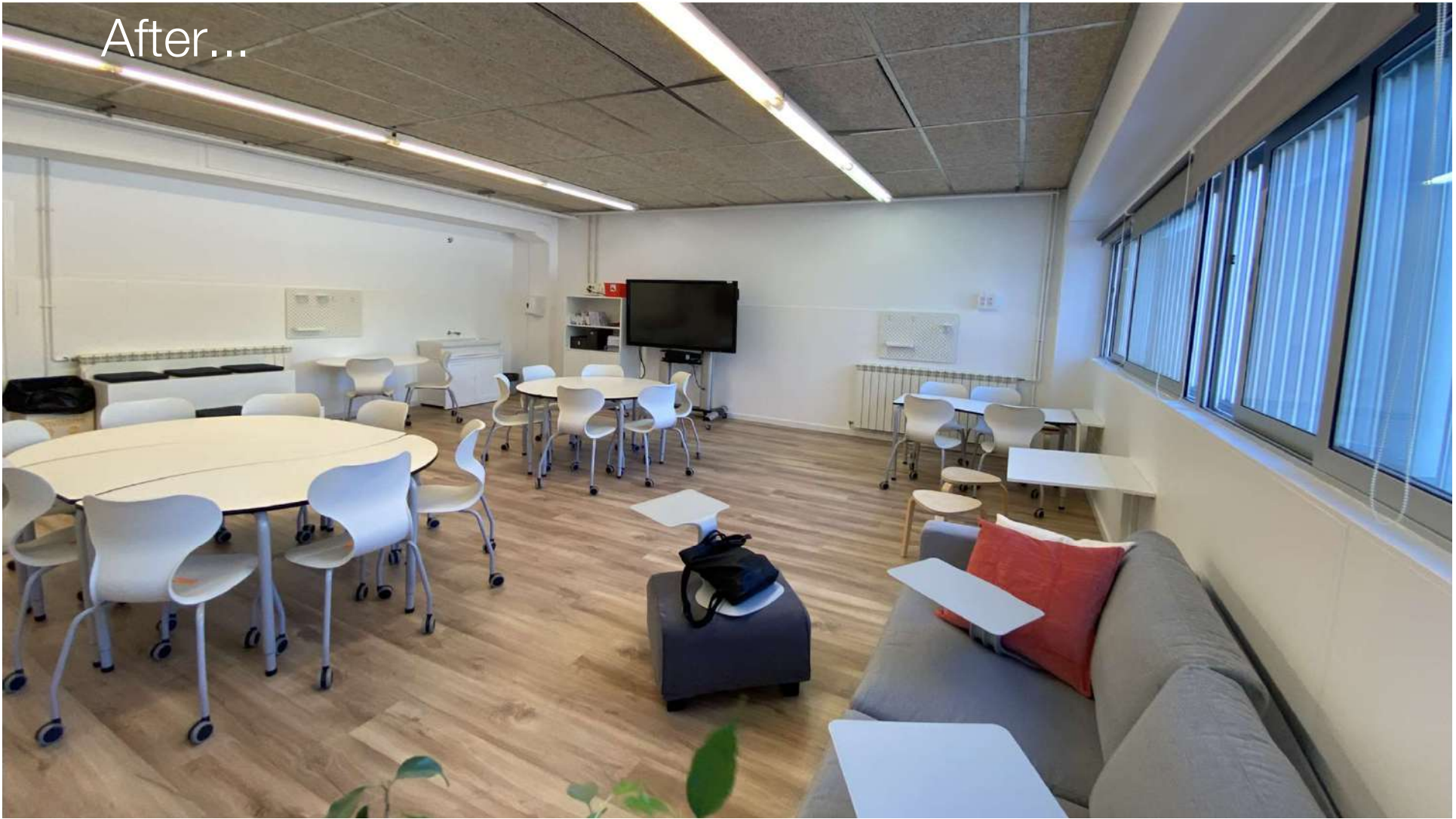
before...



After...



After...





After...



After...



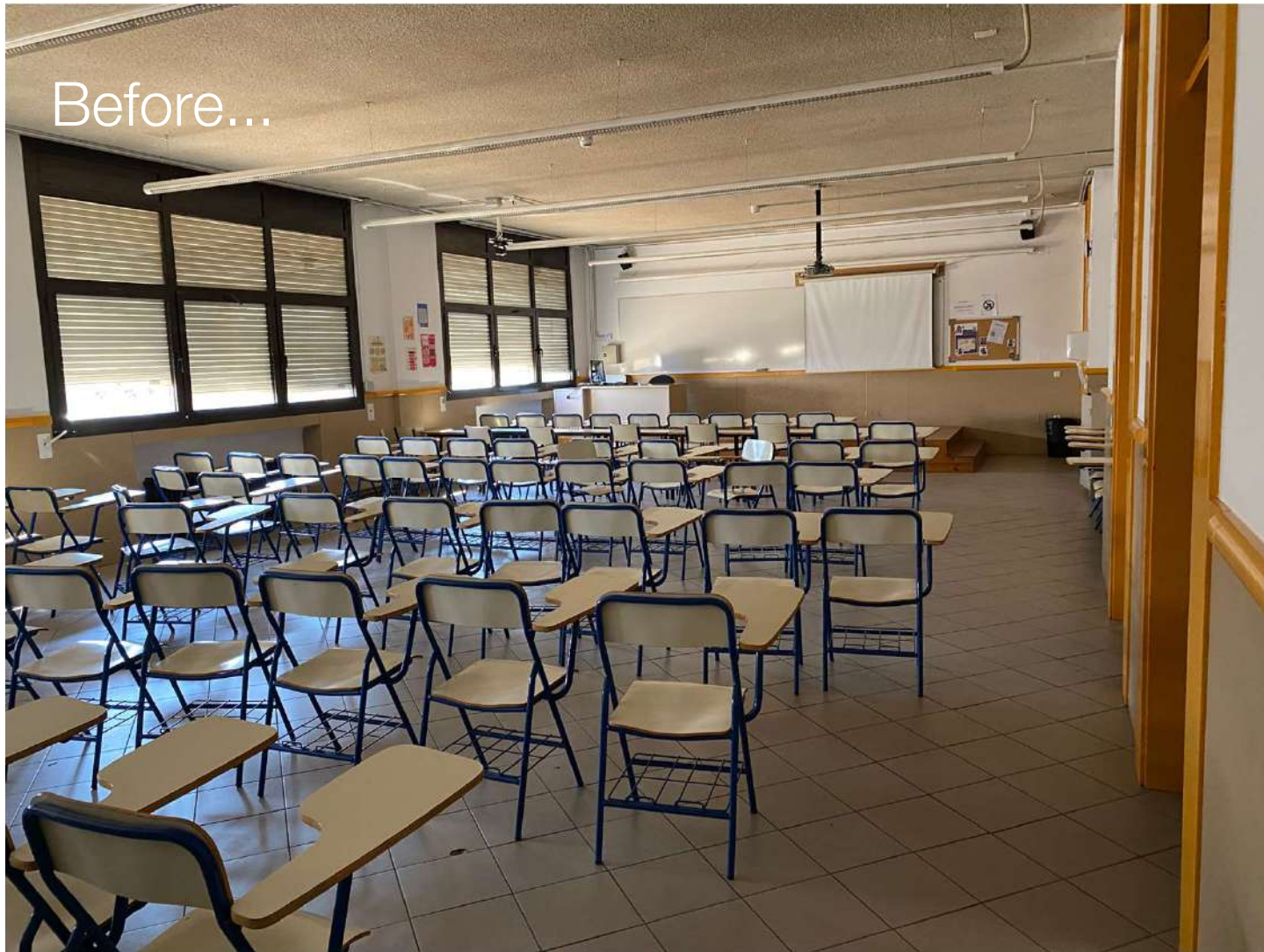
SMART CLASSROOM AT THE UNIVERSITY

Before...



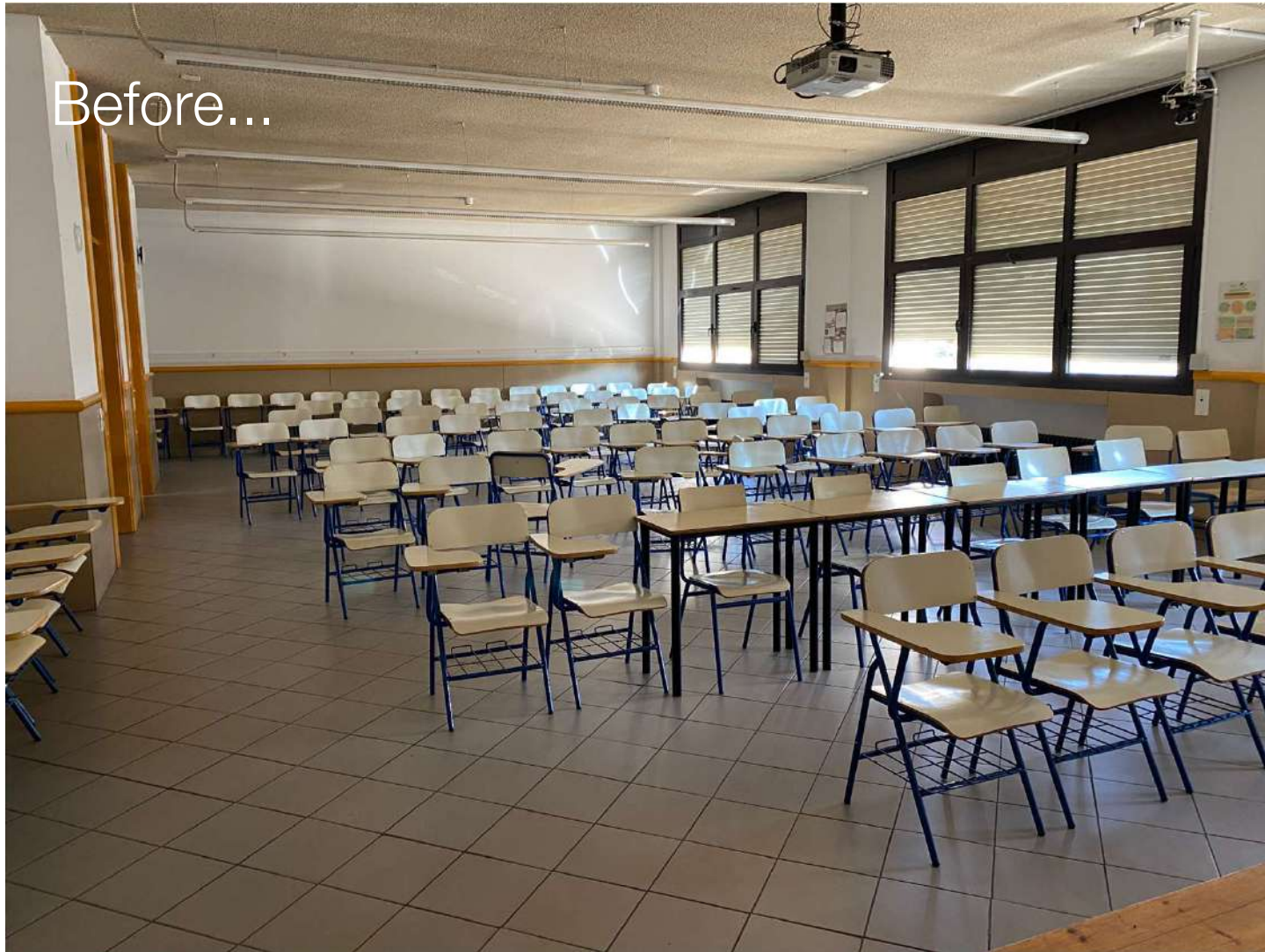
smartclassroomproject.com

Before...



smartclassroomproject.com

Before...



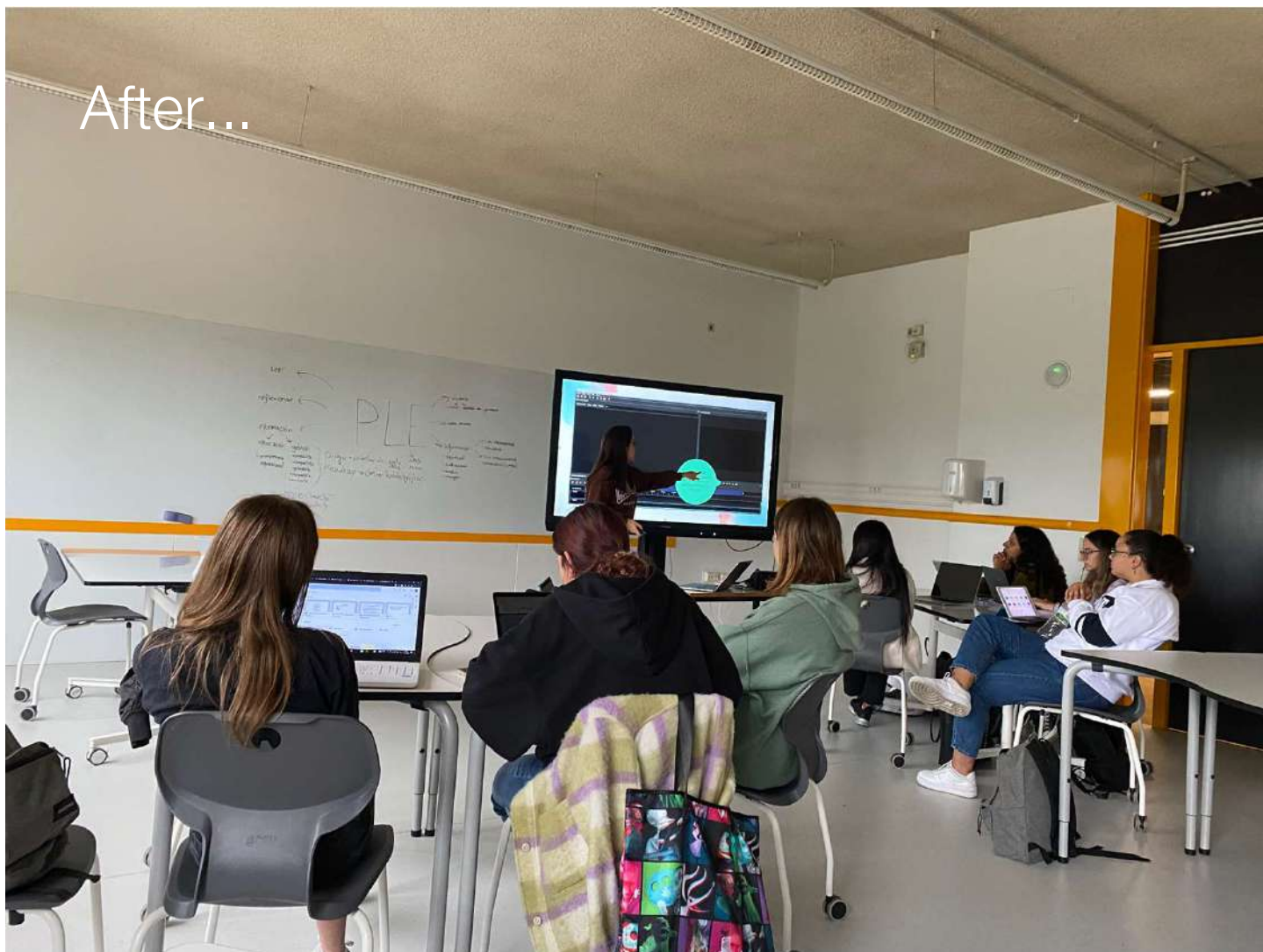
After...



After...



After...



smartclassroomproject.com

After...



After...



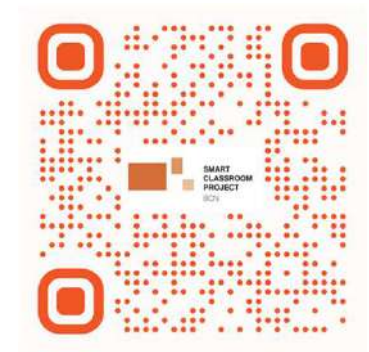


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***Thank you
very much***



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om*