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Javier Pereira & Irene Brage

CSUN Conference, 12th March 2025

HELLO!

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01.

CITIC

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https://www.youtube.com/watch?v=4AiOWx1K_e0
The University of A Coruña Center for Information
and Communications Technology Research was set up

CITIC

301 RESEARCHERS

Hosts researchers working across a wide range of ICT-related topics. Primarily from the Faculty of Computer Science.

LOCATION

A Coruña, Spain.

FOCUS

ICT applications for disability, developing assistive technologies, intervention tools, and innovations such as artificial intelligence, robotics, and virtual reality.

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As a result of this research line CITIC launched the Inclusive Talents Project in 2020 in collaboration with ASPACE Coruña.

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02.

ASPACE CORUÑA

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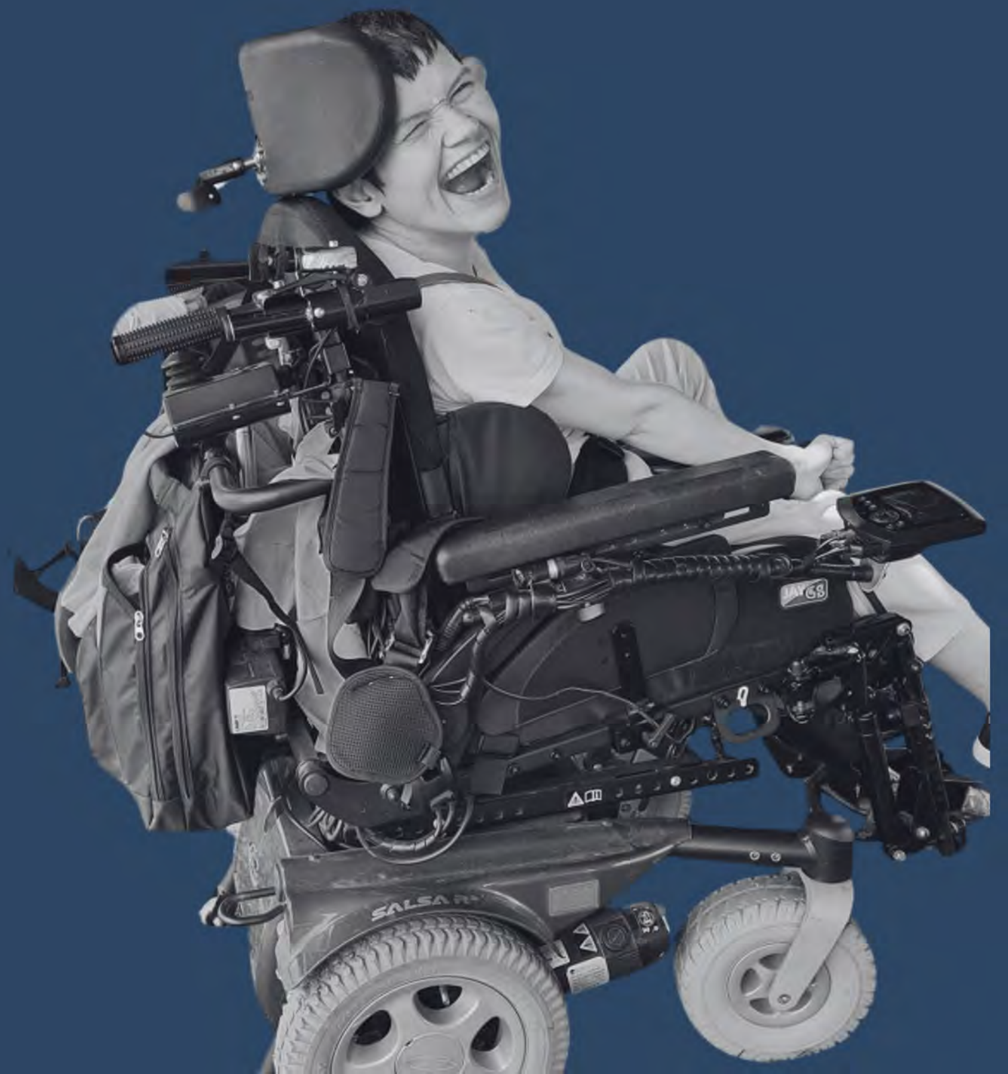
ASPACE

ASPACE is a confederation that supports **people with cerebral palsy and their families**, offering services and resources throughout their lives.



03.

BRIEF STORY OF THE PROJECT

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- Was born in an office because of the urgent need to **establish a communication channel**.
- A person was diagnosed with ALS who suddenly **lost verbal communication.**
- A young man was urge to look for **alternative communication methods** through the **use of technology.**
- This idea was implemented in the CITIC and began to be developep in collaboration with ASPACE Coruña in 2020.

https://www.youtube.com/watch?v=PkwTCp4Q8ZE

04.

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Collaborative project developed by the **University of A Coruña** (CITIC and its Social Council),with the collaboration of:

- **ASPACE Coruña**
- **City Council** of A Coruña
- **Galician government** (Xunta de Galicia)
- The Spanish Foundation for Science and Technology (**FECYT**)

Association of Families of People with Cerebral Palsy (APAMP)

Organization established in 1977 in Vigo (Spain) by families of people with cerebral palsy or similar disabilities

Amencer-ASPACE

Association of families of people with cerebral palsy and other neuro-motor disorders.

CPR Cruz Roja A Coruña (Red Cross)

Concerted Vocational Training Center where official cycles in the healthcare field are taught.

OTHER COLLABORATIONS

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Main objective of the project

BRING **TECHNOLOGY** AND ITS APPLICABILITY CLOSER TO SECONDARY SCHOOL **STUDENTS** THROUGH THE DEVELOPMENT OF **COOPERATIVE PROJECTS** WITH PEOPLE WITH **CEREBRAL PALSY** TO SOLVE PROBLEMS THEY FACE IN THEIR **DAILY LIVES**.

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S

STEM VOCATIONS

Promote scientific and technological vocations among non-university students at different educational stages.

SL

SCIENTIFIC LITERACY

Support teaching by fostering scientific and technological literacy, allowing students to explore and experiment with different innovative technologies.

OBJETIVES

Encourage society's participation in scientific outreach activities and knowledge generation through citizen science projects.

PARTICIPATION

P

Improve accessibility to ICT and the development of low-cost technological solutions.

ACCESSIBILITY

A

Bring the daily reality of people with disabilities closer to non-university students.

VISIBILITY

V

METHODOLOGY

Collaborative teams

CITIC RESERACHES

36 researches.

PROFESSIONALS

From ASPACE Coruña, Amencer-ASPACE, APAMP and CPR Cruz Roja.

TEACHERS

From 15 educational centers. Tech area.

PEOPLE WITH CEREBRAL PALSY

NON-UNIVERSITYS TUDENTS

Responsible for solving, through the application of technology, challenges that are directly applicable to improving the quality of life of people with functional diversity.

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PROJECT PLANNING

The project, which runs during the school year, celebrates its fifth edition in 2025.

1. **Open call** for the selection of participating educational centers
2. **Definition** and selection of **technological challenges**
3. Formation of **working groups**
4. Participatory **workshops**
5. **Validation of technological solutions**
6. Presentation of solutions in an **open event**

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1° PHASE: OPEN CALL FOR PARTICIPANTS

Department of Education, Science, Universities, and Vocational Training of the Xunta de Galicia (regional government).

In this latest call, 15 educational centers from across Galicia (Spain) were selected.

2° PHASE: DEFINITION OF TECHNOLOGICAL CHALLENGES

Carried out by professionals and users of third-sector associations.
In this edition, 36 technological challenges were identified grouped into six main categories.

Control of the home

Assistive products and 3D printing

Access to computers and other devices

Augmentative and alternative communication systems

Accessibility to education and the workplace

Leisure

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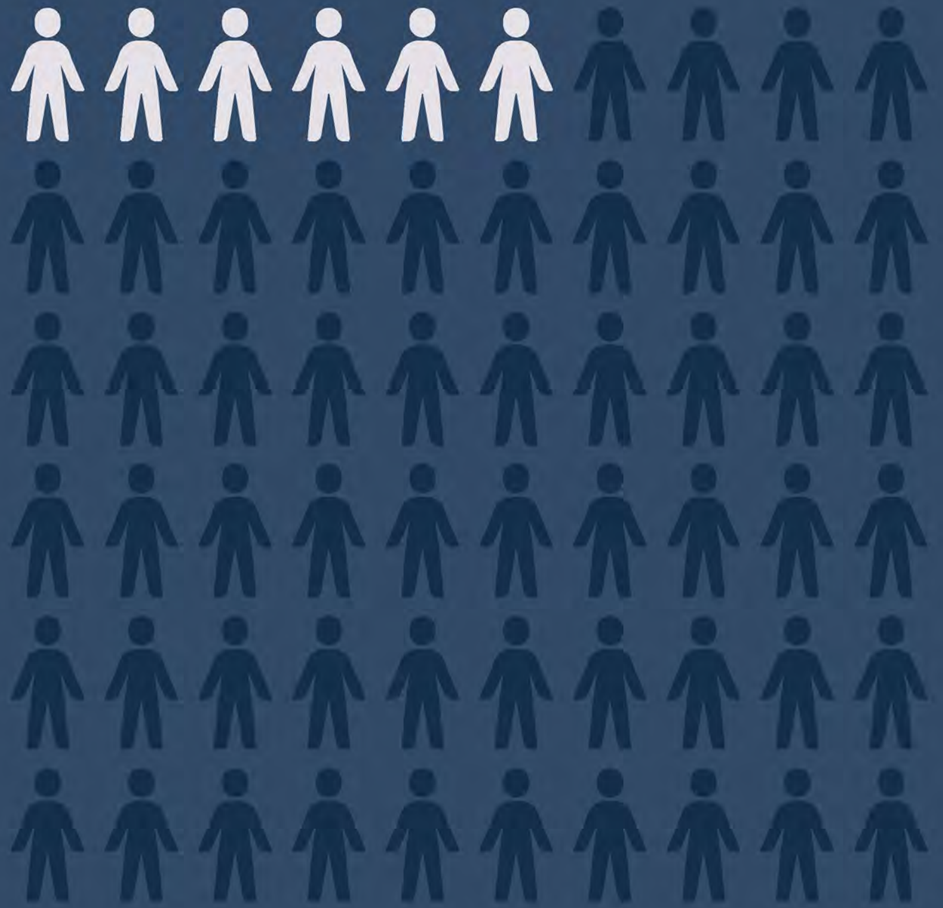
3º PHASE: FORMING DE COLLABORATIVE GROUPS AND PRESENTATION EVENT

- Teachers from the participating educational centers **evaluate and select the proposal.**

- The third-sector entities **carried out the formation of collaborative working groups** with the users as well as CITIC.

- Simultaniously, the **opening ceremony of the event is organized**, attended by participating professors, institutional representatives, collaborators, and researchers from CITIC.



4° PHASE: PARTICIPATORY WORKSHOPS

FOLLOW-UP MEETINGS

- A **monthly video conference** is scheduled with each participating educational center.
- The collaborative **working groups begin developing the technological challenges** to resolve doubts, monitor progress, and test prototypes.
- Participation of users from third-sector associations, CITIC researchers, and students and teachers from the educational centers.

AWARENESS DAY

An initial meeting is hold with each participating center to introduce CP, what it is, and its implications.

VISITS

Visits from educational centers to third sector associations, to learn about the daily life of the users.

5° PHASE: VALIDATION OF TECHNOLOGICAL SOLUTIONS

FOLLOW UP

Simultaneously with their development, following the User-Centered Design methodology.

FEEDBACK

The tests, experiences, sensations, and feedback from users on the prototypes proposed by the participants are fundamental as a guide for the working groups.

6° PHASE: PRESENTATION OF SOLUTIONS IN AN OPEN EVENT

A **science fair** is organized at the end of the school year, where the collaborative groups **presented the challenges** they had undertaken to society.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https://www.youtube.com/watch?v=gozepedZybw
TALENTOS
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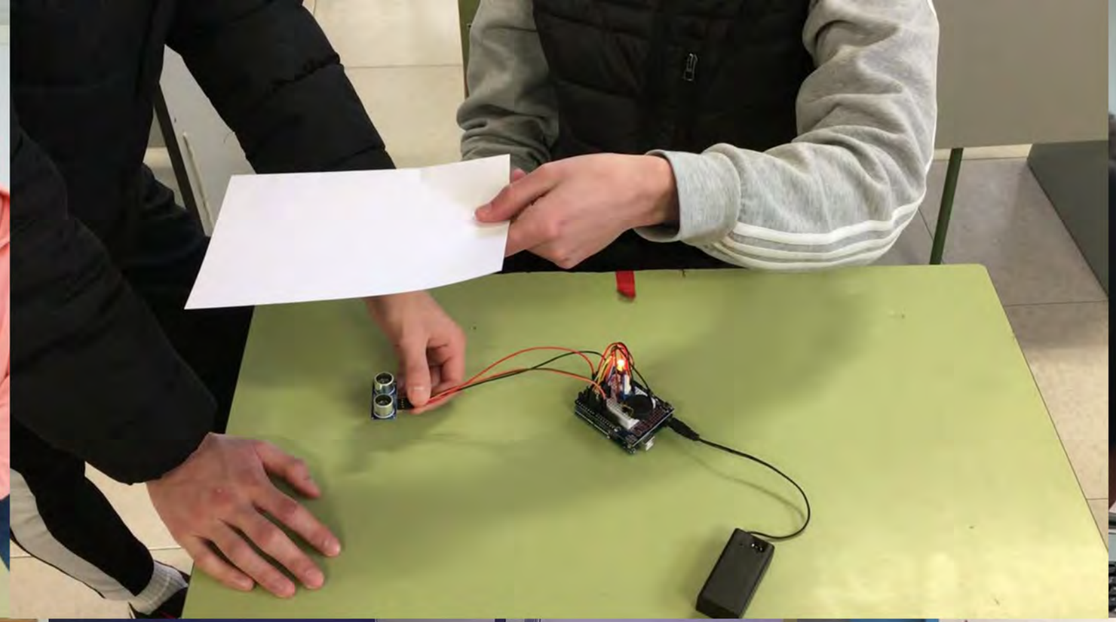
05.

EXAMPLES OF DEVELOPMENTS




LETRAS GALEGAS
2022
FLORENCIO DELGADO G


TALENTOS INCLUSIVOS


BAME VA LA
OLLA


TALENTOS
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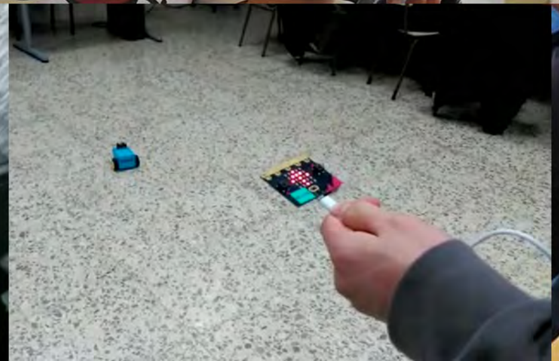
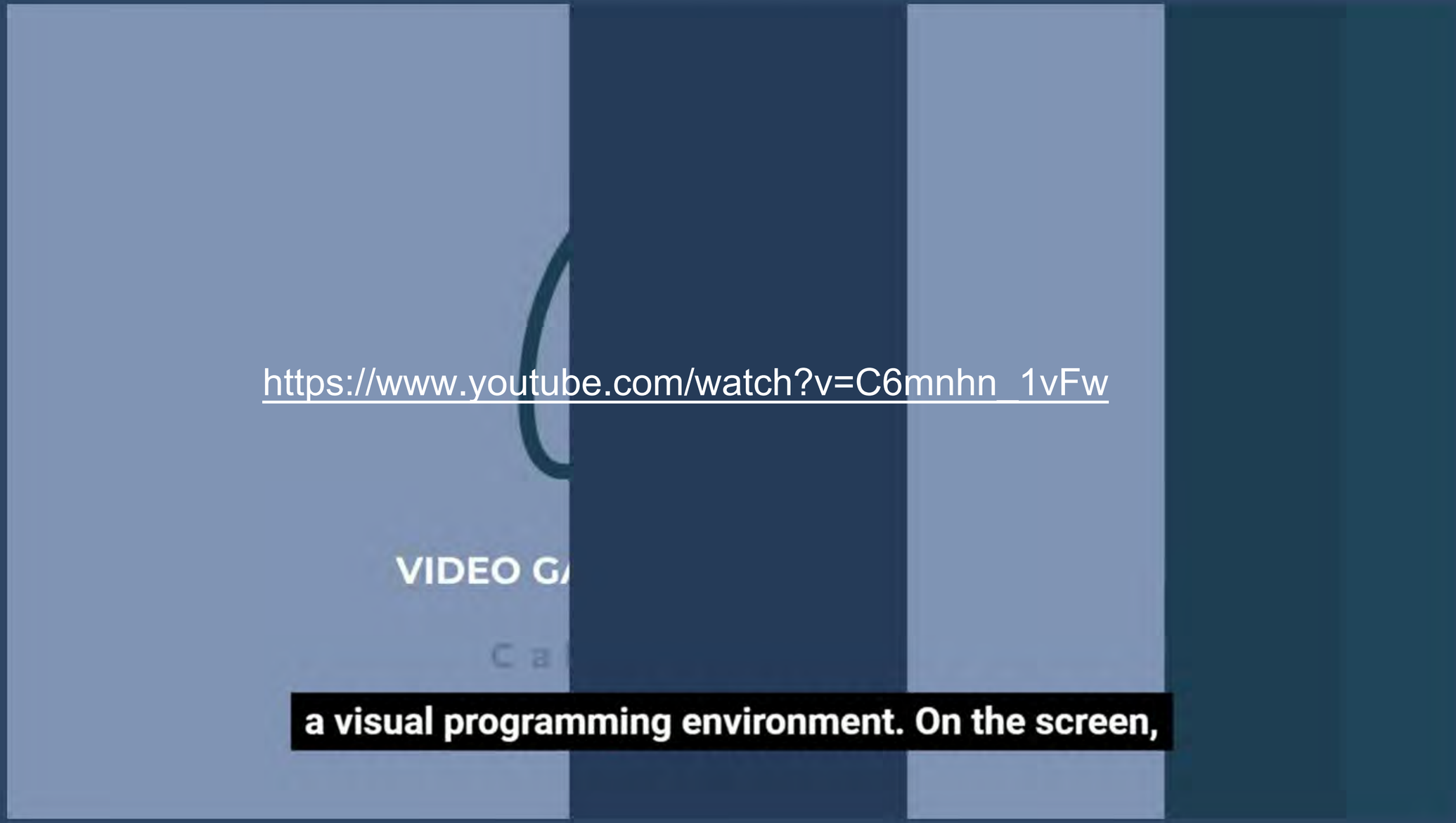


ADAPTATION OF CLASSIC VIDEO GAMES IN SCRATCH

https://www.youtube.com/watch?v=C6mnhn_1vFw



ADAPTED CANDLE BLOWER

https://www.youtube.com/watch?v=uKBtJdBt-rE

The working groups developed different prototypes based on a system of buttons that activate a DC motor and turn on a fan. In other cases, a motion sensor was used to activate the mechanism.

3D PRINTING OF A PAINTING NOZZLE. “LICORNIO”

https://www.youtube.com/watch?v=zkxFTSHrcbI

The licorn consists of a helmet or headband with an attached rod, to which a pointer or support for pencils, brushes, etc., can be attached.

MOBILE PHONE HOLDER WITH 3D PRINTING

https://www.youtube.com/watch?v=jGn4kiB8GQU

BOCCIA CHANNEL

https://www.youtube.com/watch?v=IRFozKte3OM

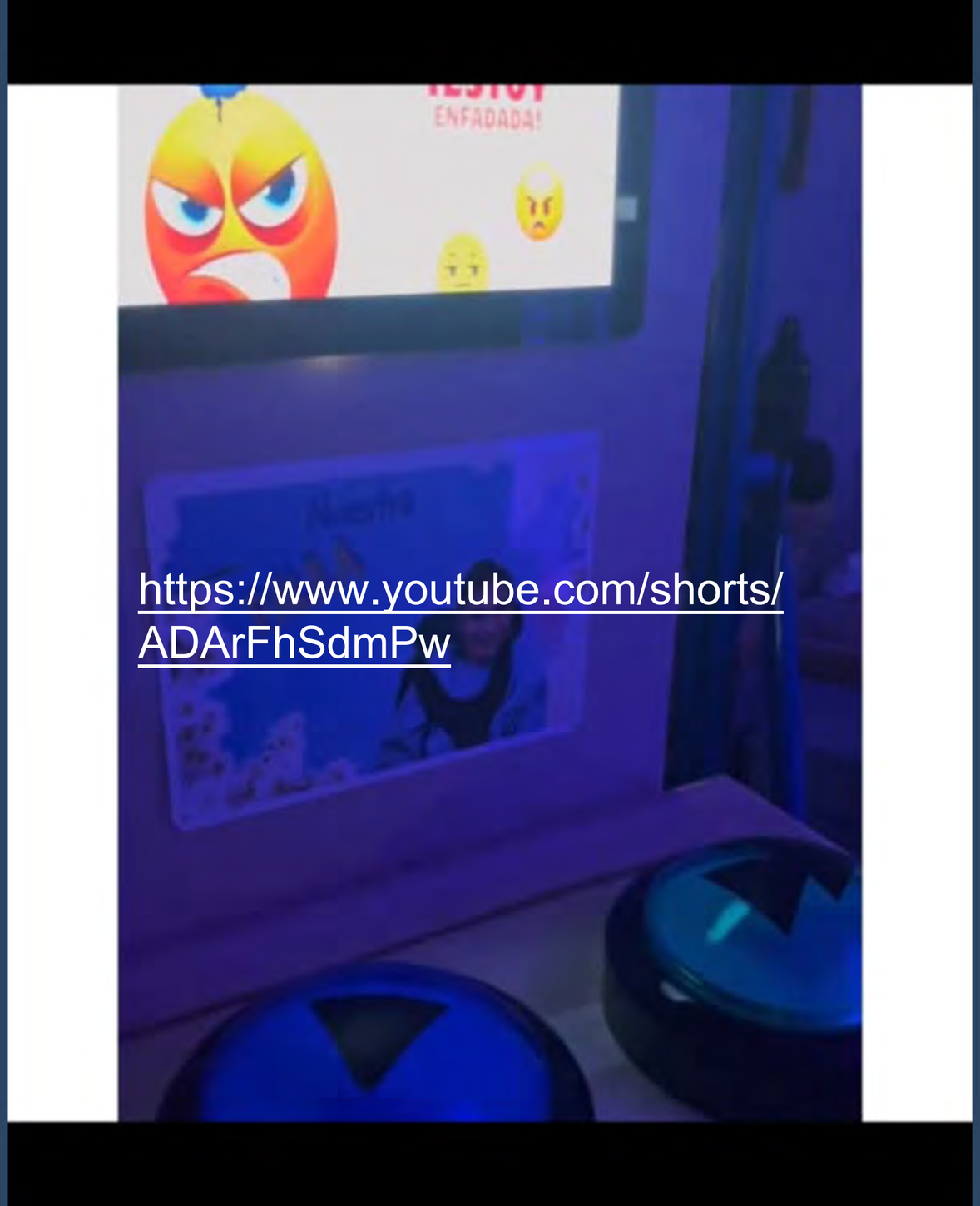
The working groups made several prototypes of channels with sheets, metal tubes, and a rubber to cover the sharp edges in collaboration with students from the welding vocational training cycle.

BOARD PROGRAMMED IN SCRATCH WITH DIFFERENT ACTIVITIES

https://www.youtube.com/watch?v=_g-VbOccBF0

Board with cards connected to a Makey-Makey board programmed with Scratch. The applications it contains are: sorting routines, greater or lesser, “rock-paper-scissors”, “The story of the three little pigs”, and the "Simon" game.

BUTTOMS FOR COMMUNICATION



https://www.youtube.com/shorts/ADArFhSdmPw

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https://www.youtube.com/shorts/CJyQCzcXxOA

BAIO-ZAS
IES
MAXIMINO ROMERO DE LEMA

ELECTRONIC LOCK

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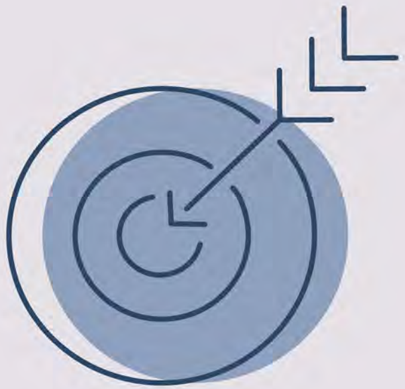
06.

ERASMUS+ PROGRAMME

EDIGIT

What is Erasmus+?

Is the EU's programme to support education, training, youth, and sport in Europe.



Goals

It aims to promote social inclusion, the green and digital transitions, and young people's participation in democratic life.

ABOUT ERASMUS+

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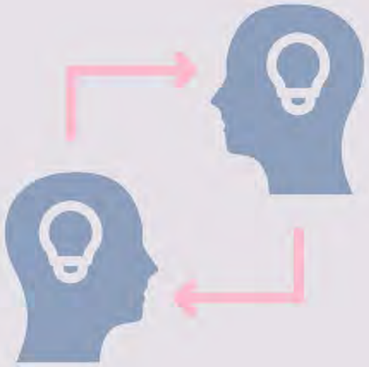
EDiGIT is a project that aims to reduce the Digital Divide in favour of the inclusion of people with disabilities, most specifically with people with cerebral palsy.

Builds on the Inclusive Talents project, which fosters STEM vocations and awareness of cerebral palsy among pre-university students.

EDIGIT

METHODOLOGY AND RESULTS



Knowledge Transfer

Develop a structured methodology for secondary school teachers, youth workers, and university professors to implement inclusive initiatives in their educational contexts.

Training Platform

Thematic modules on a web-based platform to support teachers in implementing inclusion-focused approaches in STEM teaching.

EDIGIT PROJECT

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OUR PARTNERS

Foster collaboration between the disability care, technology, and education sectors.

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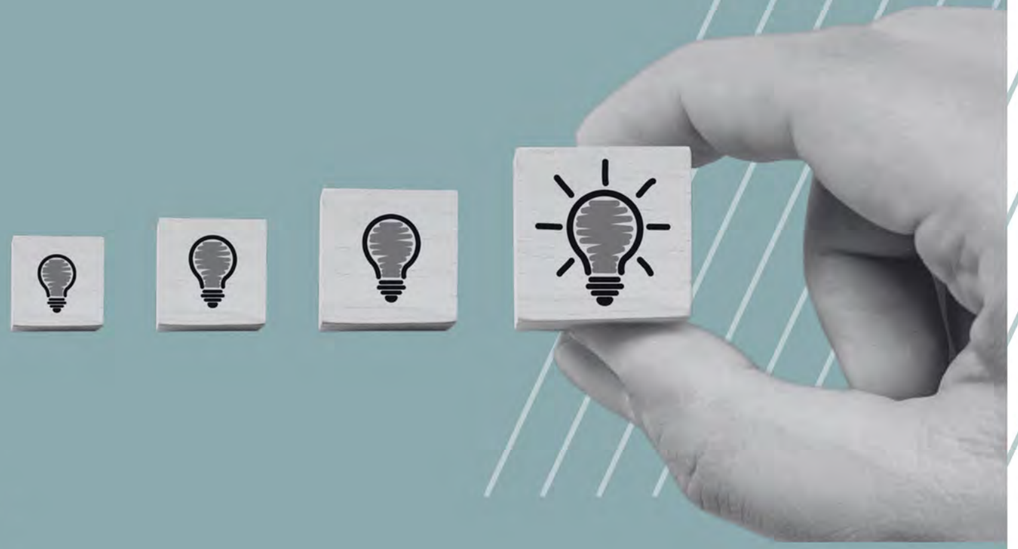
CONCLUSIONS



01. AWAKEN STEM VOCATIONS AMONG PARTICIPANTS

02. GENERATE KNOWLEDGE THROUGH THE EXPLORATION WITH NEW TECHNOLOGIES

03. PROMOTE CRITICAL THINKING

04. PROMOTE THE PERSONAL DEVELOPMENT OF STUDENTS

05. BRING THE REALITY OF PERSONS WITH DISABILITIES CLOSER TO YOUNGER PEOPLE

06. IMPROVE ACCESSIBILITY TO ICT FOR PERSONS WITH DISABILITIES


https://www.youtube.com/watch?v=g_TH6HLjNpg

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THANK YOU

Do you have any question?

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