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DIGITAL GAMES FOR YOUNG LEARNERS

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Summary

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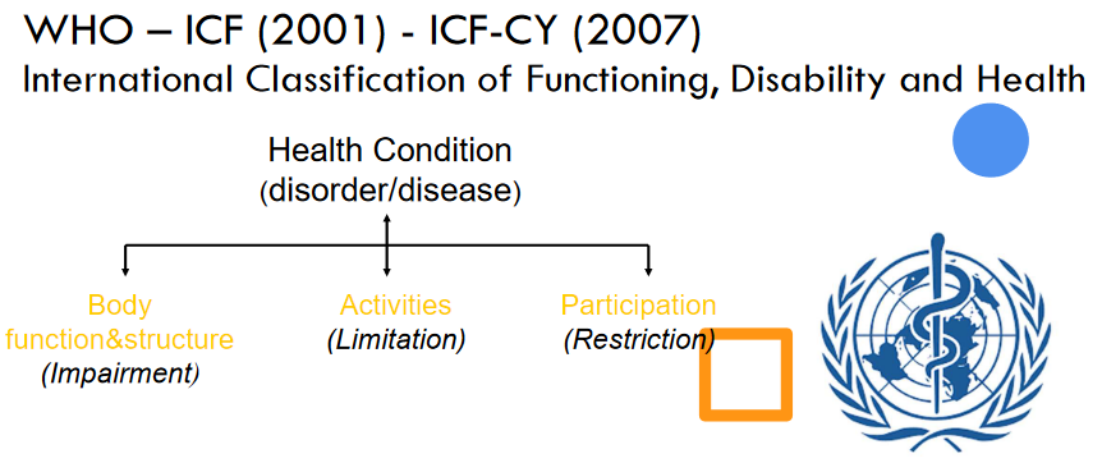
1. Background

The concept of 'children with special educational needs' extends beyond those who may be included in handicapped categories to cover those who are failing in school for a wide variety of other reasons that are known to be likely to impede a child's optimal progress."
"These children are in need of additional support which depends on the extent to which schools need to adapt their curriculum, teaching and organisation and/or to provide additional human or material resources so as to stimulate efficient and effective learning…"

Applying biopsychosocial model of individual health: health is not just absence of illness, but a well-being condition. The main idea is to consider the functional behaviour as part of own personal profile going beyond the classification of "handicapped". Disability is the result of combination of personal functional profile and environment. Nobody is disabled till s/he is not interacting with a specified environment.



Body Function and Structures
• Physiological and psychological function of body systems
• Very specific recording of detailed functional abilities and impairments
• Not linked to cause. For example, fluency and rhythm of speech functions – could be from stuttering, stroke, or autism

Activities and Participation
• Describes individual's functioning as a whole person, as opposed to function and structure of his/her body parts
• Range from Basic to Complex (basic would be, for example, dressing, eating, and bathing, instead complex include work, schooling, civic activities)

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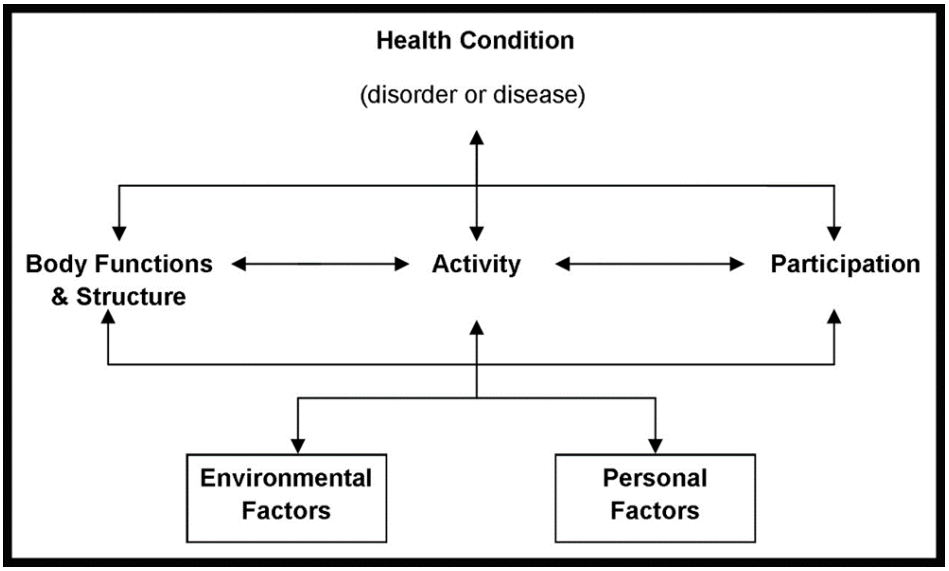

Environmental factors: facilitators or barriers?

1. Products and technology (e.g. for daily living, mobility, communication, education, employment, culture/recreation/sport, religion, buildings for public use and private use)
2. Natural environment and human-made changes to environment (e.g. climate, light, time related changes, sound, air quality)
3. Support and relationships (e.g. family, friends, colleagues, professionals)
4. Attitudes (e.g. family, friends, colleagues, strangers, professionals, societal attitudes)
5. Services, systems and policies (e.g. relating to architecture, communication, transportation, legal, media, economic, social security, health care, education, employment, political)

Design for accessibility process
ISO 9241-210

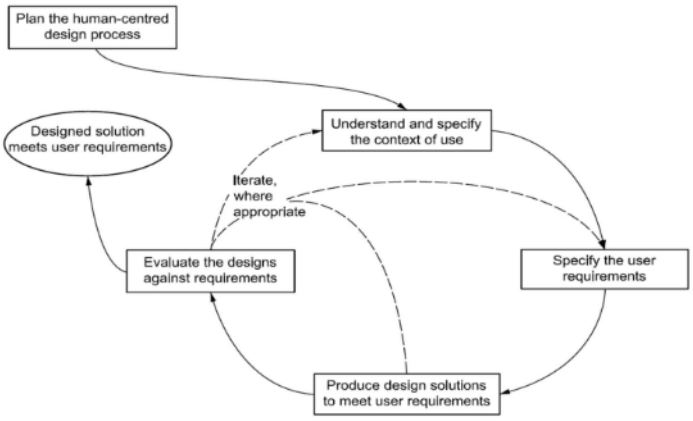

Figure 1 — Interdependence of human-centred design activities

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The environmental factors therefore also include technology. Due to the progress in the IT industry, digital technologies are easily accessible and widespread which allows using them for providing students with new opportunities.
Technology is used to help students participate. In today's education system, the goal for students with special needs is to allow them to be in the least restrictive environment. That means allowing them to participate in the same activities and learn the same material as non-disabled peers. This can be an empowering experience for students with special needs. Instead of segregating them in separate classrooms, teachers are now finding ways to allow students with special needs to showcase their knowledge and talents, and technology is making this possible.

2. Digital tools

Tools created ad hoc for artistic creations that however have internal functionalities that allow collaboration and group work and consequently favor the inclusive process.
Tools for creating interactive activities and digital games that have been adapted within the project for the creation of products and artistic activities.
Most of the software chosen is free so that it can be used in the most disparate contexts without imposing limitations and without the need for installation, since it can also work online and not necessarily locally.
The software that will be presented can be grouped into 3 main macro-areas:
- 2D collaborative drawing software (Aggie.io - Google Jamboard - Sketchtogether)
- 3D drawing software (3D Builder - Tinkercad - Blender)
- Software for the creation and development of interactive activities and digital games (Google Arts & Culture - Code.org - Scratch)

2.1 Description of the tools

- **Aggie.io**

  Aggie.io is a collaborative painting application. It allows you to draw a picture together with your friends in real-time over the internet in your browser. Create new canvas and share the link to start drawing a picture together. Use the application to make a complete painting together with other artists or just as a sketchpad for brainstorming or collaborating on a project that require some visual aid. Aggie has the simplified functions of a photo editing program and with it it is possible not only to modify the images imported into the sheet, but also to create layers on which to draw and paint other elements without altering the starting image. Being a collaborative program, it is possible to assign each level to one or more participants, for example by blocking the level with the imported image so that no one other than the administrator can modify it, and allowing the division of tasks among the participants (for example the reproduction of the starting image).

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- **Google Jamboard**

  Jamboard is a free mobile app that allow you to brainstorm, jot ideas down, collaborate with others in a visual environment. It is accessible through mobile devices, enabled devices that are accessible to the android app, such as a Chromebook or a Pixel Book, and via the web. So first you need to download the free app either on the Apple Store or the Play Store. And once you do that, you are able to access Jamboard. It is possible to either open a new Jam or join one created by others. In the center of the screen the canvas is shown, which represents our work area and beside it there is a toolbar.

  With Jamboard you can import images from a Google search, automatically save your work to the cloud, use the shape recognition and handwriting tool for easier reading and drawing with the stylus and then erase with your fingers, just like you would on a whiteboard.

  Share ideas during brainstorming or lectures

  Jamboard makes learning visible and accessible for all contributors in the Jam session. Presenting Jams in real time is also very simple with Meet, to be able to share or create connections with the real world in an extremely simple way.

  Students can use Jamboard wherever they are.

  Teachers can involve all students in the learning process in whatever context they are in: a traditional classroom, the classroom of a group seminar, a distance learning center. The Jamboard app for Android and iOS makes it easier for teachers and students to participate in the creative process from their phone, tablet or Chromebook.

  Google Jamboard is a collaborative whiteboard that, by updating in real time, allows participants to take notes, play and draw remotely without having to share the same computer. It is possible to collaborate on the same Jamboard by sharing the link and giving editor permissions to anyone who accesses it.

- **SketchTogether**

  Use a tablet, desktop, electronic whiteboard, or even mobile phone to join.

  SketchTogether enables effective and efficient creation, review, and organization of anytype of content, as fluidly as pen and paper.

  SketchTogether safely and securely manages all content in the cloud.

  SketchTogether interface is simpler than aggie's one. At the beginning, a message will tell you that you can use the sheet up to 1 hour after which it will be deleted. To avoid this, you can login, but this doesn’t interest us.

  In Column tools, the first button we find is the File and Folders one. In SkecthTogether we can order our files in folder as in a computer

  Share with SketchTogether is more complicated than aggie, as it is necessary to put the subjects in your contact list before sharing the file with them. To do this, an

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invitation must be sent through the application itself, by entering the email address and associated name.
Collaborative design. Compared to aggie.io, it allows you to create shared or individual albums for each participant.

- **Microsoft 3D Builder**

  View, create, and personalize 3D objects using 3D Builder. Download many kinds of 3D files and edit them using wide range of powerful yet easy-to-use tools. Take a picture with your webcam and make it 3D. Personalize 3D objects by embossing your name on them, or combine models and pieces to make something new. Build from scratch using simple customizable shapes.
  It is a program that allows you to make simple changes to 3D models which are then printed using a 3D printer or imported into other programs for more complex changes.
  Features:
  - 3D Builder provides everything you need to make 3D content printable.
  - Clean up objects by smoothing and simplifying.
  - Automatically repair objects so you can print them.
  - Use the 3D Scan app to scan yourself in full color.
  - Take pictures with your webcam and make them 3D, or use BMP, JPG, PNG, and TGA files.

  Emboss any object with text or images.
  - Drag-and-drop to build with simple shapes.
  - Merge, intersect, or subtract objects from each other, or slice them into pieces.
  - Add a base to objects to create trophies or busts.
  - Print images of your 3D objects on paper.

  What's new in this version
  - Realistic rendering of materials including translucent and metallic objects
  - New layered paint tools allow stacking textures and with support for transparent texture areas
  - Generate a QR code and stamp it on your object
  - Browse Remix3D.com for inspiring models and use the tools in 3D Builder to make them 3D printable
  - Full glTF file format support – animation pose selection, realistic materials, share with the glTF universe!
  - Create new shapes by customizing properties of basic shape

  The design and interface of the 3D Builder are all about speed and efficiency. What that means is that the program is designed to allow users to work quickly. All the important commands that users are going to need are in the menu bar, and it’s very

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easy to jump around and look for what you need since everything is labeled in easy-to-understand icons and language.

- **Autodesk TinkerCad**

  Tinkercad is a free, easy-to-use web app that equips users with basic skills for innovation in 3D design, electronics and coding.

  With Tinkercad you can quickly turn your idea into a CAD model for a 3D printer. Tinkercad is an easy-to-use tool for creating digital designs that are ready to be 3D printed into physical objects. Users are guided through the 3D design process through 'Lessons', which teach the basics before moving on to more complex modeling techniques.

  This is a very basic 3d cad program with a very simple interface. The built in tools give you the ability to manipulate and combine basic shapes to form more complex ones. However, it does include community generated scripts to create more complicated shapes.

  Through basic shapes it allows you to build more complex 3D models of 3D builder, through more intuitive graphics and operation. With tinkercad you can send your projects to online libraries so that everyone can take advantage of the projects created by others and possibly modify them. With both software it is possible to export projects in formats readable both by proprietary 3D printers and by an external provider.

- **Blender**

  Blender is the free and open-source 3D creation suite. It supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, even video editing and game creation. Advanced users employ Blender's API for Python scripting to customize the application and write specialized tools; often these are included in Blender's future releases. Blender is well suited to individuals and small studios who benefit from its unified pipeline and responsive development process. Examples from many Blender-based projects are available in the showcase.

  Features:

  - Rendering, create jaw-dropping renders thanks to cycles, high-end production path tracer
  - Modeling, sculpting, retopology, modeling, curves. Blender's modeling toolset is extensive
  - Sculpting, digital sculpting tools provide the power and flexibility required in several stages of the digital production pipeline
  - Animation & Rigging, designed for animation, Blender is being used for award-winning shorts and features films

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- Grease Pencil, push the boundaries of Story Art and 2D concept design, right in Blender's 3D viewport
- VFX, from camera and object motion tracking to masking and compositing, you can "fix it in post"
- Simulation, featuring industry-standards libraries like Bullet and MantaFlow, Blender offers powerful simulation tools
- Pipeline, integration with multiple pipeline tools is pivotal in many productions
- Video Editing, the Video Editor offers a range of basic yet very efficient tools
- Scripting, featuring an extensive Python API, every tool is available for scripting and customization
- Interface, because of its custom architecture, Blender's UI, window layout and shortcuts can be fully customized

- **Google Arts & Culture**

  Google Arts & Culture is an online platform of high-resolution images and videos of artworks and cultural artifacts from partner cultural organizations throughout the world. It utilizes high-resolution image technology that enables the viewer to tour partner organization collections and galleries and explore the artworks' physical and contextual information.
  The platform includes advanced search capabilities and educational tools.
  The exploration of the artistic works contained within the platform is facilitated by grouping them into categories:

  - Color
  - Museum
  - Artist
  - Artistic movement
  - Style
  - Date
  - Collection

  Other contents that can be found are:

  - Historical events
  - Historical characters
  - Places
  - Interactive experiments and games

- **Code.org**

  Website created by the US non-profit organization of the same name that works to promote the teaching and learning of major programming languages. resources, tools, online courses and tutorials are collected to encourage the spread of information technology, specifically to learn how to program.

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It is basically divided into two macro-sections: a first dedicated to teachers and a second to students. Thanks to the pages dedicated to them, teachers can request the help of Code.org to bring programming within their schools, while students can receive the first rudiments of programming directly from the pages of the site through online courses and tutorials.

Tools and Resources:

In addition to the courses, teachers can use App Lab and Game Lab in any course to teach students how to create apps, animations, and games in JavaScript. And, there are lessons and widgets to teach encryption, text compression, and other computer science concepts.

- App Lab, it is a programming environment where you can make simple apps. Design an app, code with blocks or JavaScript to make it work, then share your app in seconds
- Game Lab, it is a programming environment where you can make simple animations and games with objects and characters that interact with each other
- Web Lab, it is a programming environment where you can make simple web pages using HTML and CSS. Design your web pages and share your site in seconds
- CS Journeys, bring CS to life and help students make real world connections to what they're learning. Empower them to continue their CS journeys with these resources
- Video Library, these videos can be used in any computer science course to support learning
- AI Module, students will learn the fundamentals of artificial intelligence and machine learning and discuss their implications. Suitable for grades 6-12

- **Scratch**

  Visual programming environment for the creation of games, activities, interactive lessons. It can be used both locally and online.

  Elements:

  - Sprite, Characters and / or elements that are inserted in the playing field to carry out actions.
  - Sprite Costumes, it allows you to modify the sprite from a graphic point of view
  - Stage, Section that allows you to manage the background
  - Blocks, List of commands that can be assigned to a sprite or to the stage
  - Script Area, Area where commands are inserted that allow the sprites and the background to perform actions.

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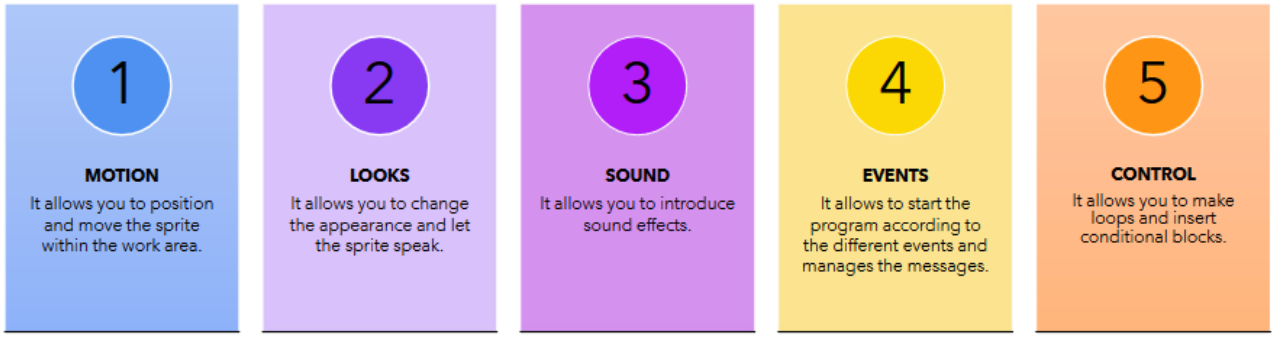
Blocks – Functions



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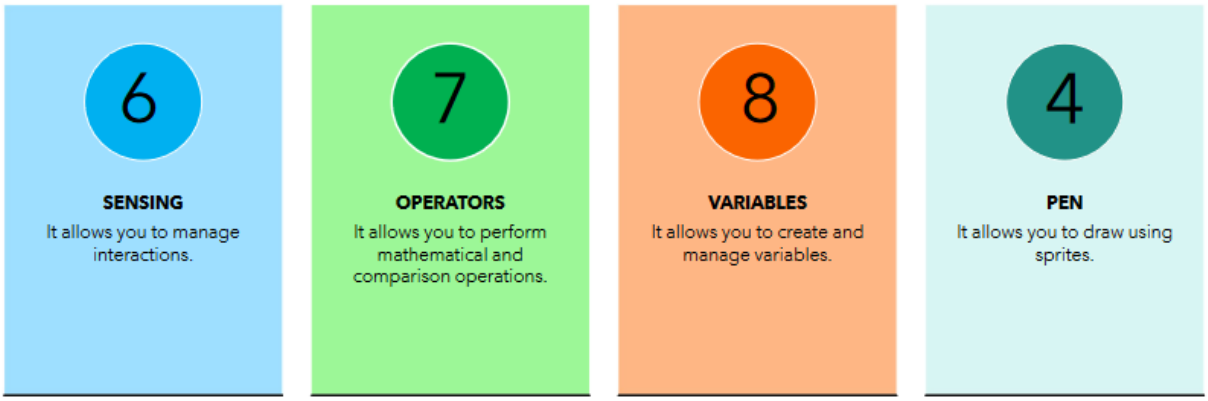
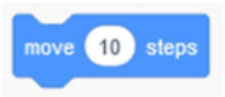


Blocks – Shapes

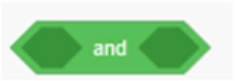


Action

Blocks positioned one below the other that are executed sequentially

Events

Blocks positioned at the beginning of the script that start the execution



Comparison

Blocks positioned within other compatible blocks (ex. Control blocks) that evaluate a comparison operation with true or false response

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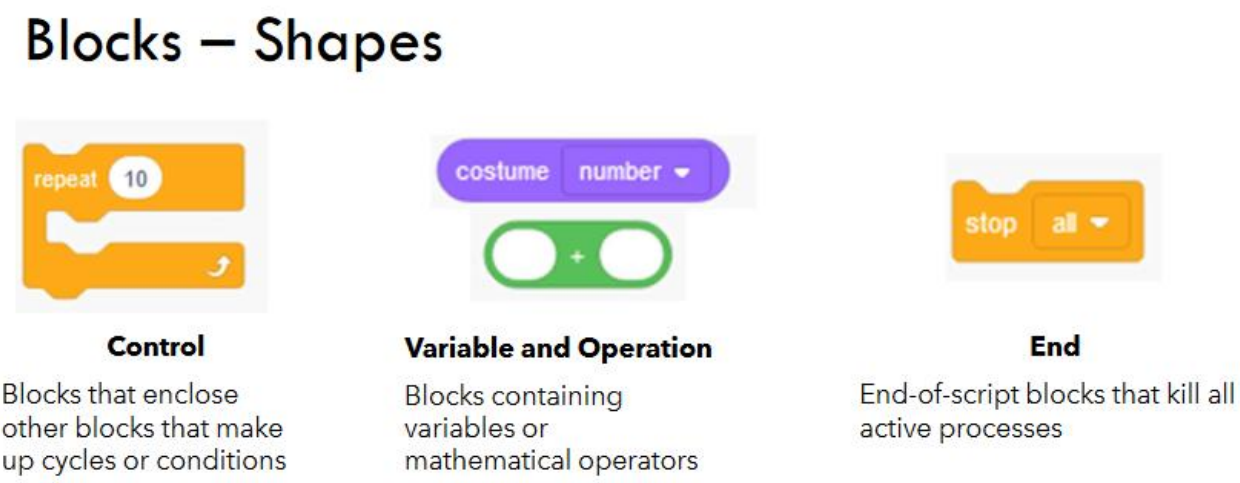

2.2 Description of Digital Games

COAT Onlus has created some Digital Games which can serve as an example or starting point for the implementation of activities by means of the tools just presented. All activities have been carried out within the Scratch programming environment.

Below is a brief description of this Digital Games:

- **Synesthetic Paint**, through the use of the mouse andkeyboard you can create a picture or a drawing. It is possible for the user to choose when to start and stop the stroke and color to be used. You can also choose different colors during the same activity. Once you have finished the work or in case of error you can choose to delete what has been created on the screen and start over. The peculiarity of this activity is given by the fact that the thickness of the stroke is determined by the sounds and noises that there are in the surrounding environment. The higher the volume of these are, the greater the thickness of the stroke and vice versa. In the event that there is total silence the stretch is interrupted. It is therefore interesting to experience what happens by starting a song in the background or asking the user to sing while drawing, for example.

- **Piano**, a piano is depicted on the screen which allows the user to compose melodies, record them in order to listen to them again and/or delete what has just been recorded. With each note the background changes color.

- **Synestetic Picture**, this activity has been realized in two versions. In the first one a painting has been played on the screen: when you click on a specific part of the

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painting you start an audio track. You can start multiple audio tracks at once by clicking at different points in the painting. In the second version, instead, it is sufficient to move the mouse cursor to start the music, however it is not possible to proceed with the exploration and the consequent start of the audio tracks until the previous one is finished. This activity lends itself to a large degree of customization: in fact, everyone can insert the image or painting they prefer, can modify the sounds played and the sections of the screen that start them.

3. Reports of 1st Local Workshops

Workshops were held in the various project partner countries, in order to concretely experience this new approach to art through digital software. Below are reports of what has been achieved in the various countries, so that it can provide an inspiration and that these activities can also be replicated and adapted by other organizations with the same objectives but with different needs and characteristics.

3.1 Greece

- Introduction

  The first local digital workshop took place in Larissa on 7-8-9/12/21 in the ICT Laboratory of Lykeio Gonnon and involved 10 teachers of the school Lykeio Gonnon and in the ICT Laboratory of Lykeio Nikaias and involved 5 teachers of Lykeio Nikaias.
  Teachers which have participated are: Stylianos Orfanakis from Lykeio Nikaias of Larissa, Georgios Giannakas from PEKES Stereas Elladas
  Responsible from PDETh are: Ioanna Chatzopoulou and Zissis Zikos
  Responsible from Open up are: Stylianos Orfanakis, Aikaterini Ganatsiou and Georgios Giannakas.

- Choice of Thematic in Digital Art' Training

  The thematic of these Local Workshops was the recreation of a painting using a digital tool with which the students were very familiar, as all of them have used it before and implemented it within the related courses of Technology Information in school's curriculum.

  As the subject of the 3-day Local Workshops was "Training in digital creativity with application in Education and Art; Rebuilding the cubism through Scratch", we chose a painting well-known for its symbolism and cubism in this content, the famous "Guernica" of Picasso. So, we rebuilt creatively this painting, using Scratch and most of all investing and developing the imagination and creativity of our students.

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The Guernica of Picasso

- Choice of Digital Material

Digital Material: The digital Scratch program, with 3d pictures and sound.
The artist Eleni Kalampaliki isolated essential elements of the painting that are symbolic parts of the Guernica, such as the bull, the mother with the dead child in her arms, the candle, the eye, the lamp, and all these issues were the moving material (which was properly shaped by the technicians of Open Up organization). The participants were asked to transform all these parts of the painting, to color them and to combine them with each other in order to create something new and fresh. Also, graffities from the city's walls that the artist has photographed and the technicians of the Open Up have edited for the students' creations, was used as a background.

- Agenda of the Local Workshop

Session	Activity Carried Out
7/12/21 14.30-16.00: Questionnaires of expectation Introduction in the project ABeyGa, information on Scratch 16.20-18.00: Practice on Scratch	Face – face and online support

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Composition of different backgrounds to recreate the Guernica 18.20-19.30: Follow-up activities 8/12/21 14.30-16.00: Presentation of Guernica –Cubism and discussion on its symbols. 16.20-18.00: Combination of the different the moving materials (eg the bull, the eye) with the background, choosing the color, making the issues move. 18.20-19.30: Follow-up activities 9/12/21 14.30-16.00: Synthesis of digital paintings with scratch 16.20-18.00: Video-music production –Conclusion of the workshop. Evaluation (Questionnaires of satisfaction). 18.20-19.30: Follow-up activities	Face-face and online support Face-face and online support

- Description of 3 Day Activities (15 hours)

  On the first day, the participants had the opportunity to form a team capable to work together. The dialectic relationship that developed between them. The Principal of Lykeio Gonnon Dr. Dimakis Dimitrios addressed a greeting to the teachers welcoming actions that promote education and culture.

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Moreover, the participants were given the necessary information about the Art Beyond Gaze program and its objectives. Finally, the participants were informed about the aims of the Scratch digital project and made practice on this subject utilizing the 10 photos of wall-graffities of Larissa (where they live), so that the students use them as a background in their work.

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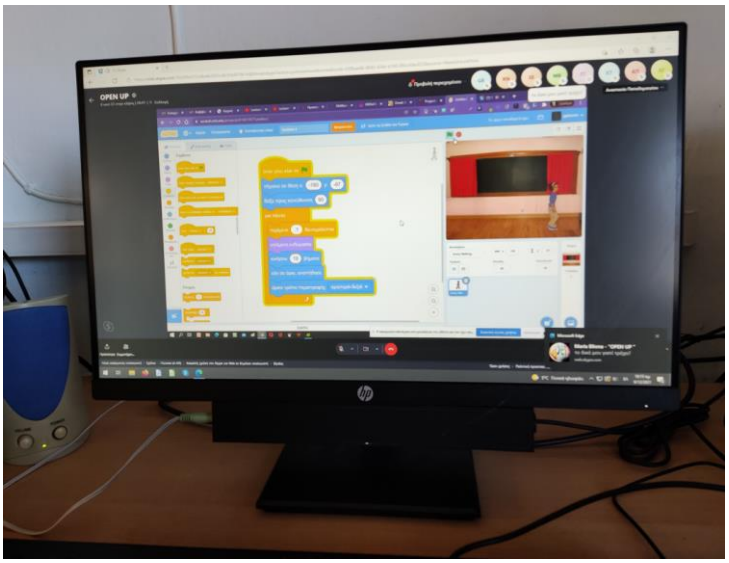

On the second day of the workshops the participants had the opportunity to practice more on the digital scratch program, after the presentation of the documentation on Guernica and the related discussion on its symbolism. The participants were asked to use the isolated essential elements of the painting -the most symbolic parts of the Guernica- such as the bull, the mother with the dead child in her arms, the candle, the eye, the lamp, which became moving material in the context of Scratch.

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The participants were, also, asked to transform all these parts of the painting, to color them and to combine them with each other in order to create their own personal “Guernica”. The main theme of their work was to incorporate Picasso's drawings from the painting Guernica into them, using rules of composition and balance in drawing and colour.
At this point the participants worked together in pairs or groups of two or three, so that they exchange ideas, techniques and digital skills.

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On the last day, the students completed and presented the results of their work.
Additionally, they created a video -made by themselves- invested with music.
Finally, they were all invited to share experiences of their participation in this project.

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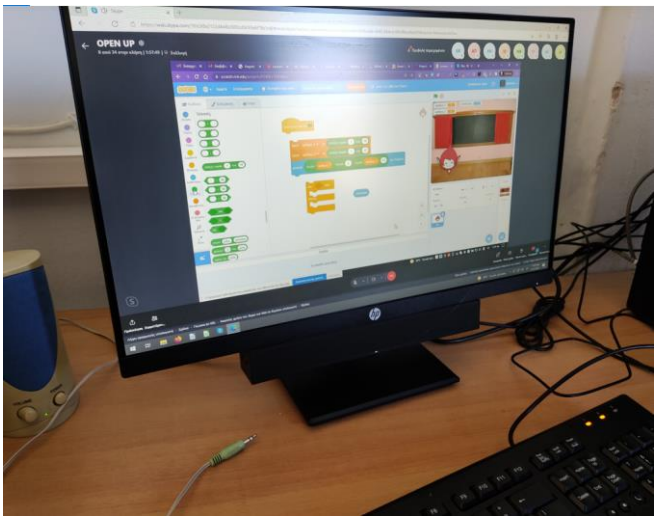

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- Outcomes & Evaluation of the Teaching

The results of the digital workshops were evident from the very first moment. The participants worked as a team and collaborated in a context of mutual estimation and acceptance of diversity by supporting and complementing each other's thinking and creations. They underlined that they were very interested in approaching art through digital material and especially through scratch and expressed their enthusiasm to work with this famous Picasso paining, the “Guernica”. The use of different backgrounds helped them to discover the graffities -which are beautiful and alternative art creations- of their city. The evaluation of the participants expressed through the completed questionnaires of expectations (in the beginning) and of satisfaction (in the end of the local workshops).

- Conclusions

The combination of the digitalization (through the scratch program) with the art can yield very remarkable results regarding teachers of all ages, when it is supported by the right guidance and it is implemented in the context of the mutual understanding and harmonic cooperation. The collaboration between teachers of different expertise was very interesting due to the fact that the participants of different ages and with different skills and abilities work together to build this bridge of self-expression, communication and integration.

3.2 Italy

- Introduction (organizational info)

After contacting several schools and organizations that are part of COAT's network of contacts, it was decided to carry out the first Digital Local Workshop at the "Fondazione La Città del Sole Onlus", a reality created to build life paths for people with psychic and mental disabilities, which would otherwise be at high risk of institutionalization.
Before the workshop took place, a meeting was held to plan the activities and select the users and operators who would take part in the laboratory.
As expected, the workshop was divided into 3 consecutive days in which participants were able to discover art in its various forms, using different tools and methodologies than usual. Everyone was provided with a PC in order to work in total safety, given the current pandemic situation, without however renouncing the collaboration with the other participants, made possible by the type of software selected.

- Choice of Thematic in Arts

In line with the objectives of the project and with the principles of accessible art, it was decided to focus the workshop on the theme "Discovering art through the senses". In this way, the participants had the opportunity to approach art in its various forms and everyone

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had the opportunity to carry out activities with their favorite art form. Another strong point for which this theme was chosen is the possibility of being reused in other workshops aimed at people with sensory disabilities, in order to make art accessible for everyone.

- Choice of Digital Materials (justification)

The choice of the theme was supported by the type of software used. These were selected from the panorama of programs illustrated during C1.
Specifically, the software used in workshop 1 are:
- Aggie.io
- Scratch
- Google Arts & Culture
- Tinkercad

The following are the main reasons why the aforementioned software was chosen:
- They do not require downloads, installations or stringent technical requirements. This allows a large audience to access the programs, without requiring specific equipment: it is necessary to have a device connected to an internet network.
- They're all free
- They present in single or combined form some central characteristics for the project: ad hoc software for artistic creations, the possibility of carrying out collaborative or group activities, tools for the realization of interactive activities and digital games
- High possibility of customization
- They allow the creation of activities and products accessible to subjects with SEND

- Agenda of 1st Local Workshop

DAY 1 (09:00-13:00): INTRODUCTION & VISUAL ART
  - Presentation of Art Beyond Gaze Project
  - Presentation of the workshop: aim, theme, methods
  - Activities with Aggie.io

DAY 2 (09:00-13:00): VISUAL ART & MUSIC
  - Google Arts & Culture
  - Activities with Scratch

DAY 3 (09:00-13:00): DISCOVERING ART THROUGH TOUCH AND SMELL
  - How to explore art with touch and smell
  - TinckerCad

- Aims of the Workshop

The general aim of the first Local Art Workshop is to transfer the knowledge of the first C1 to young learners.

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The participants will be trained to create innovative, original and interesting artistic digital products (through digital art tools and games) in order the comprehend and be better involved in the creation of arts
The specific objectives of the local art workshops are:
- to support young people especially with SEND to be involved in communication by and for young people by allowing them to contribute to the creation of tools.
- to provide and transfer digital tools, skills (individual, collective) and practices, useful to professionals and young learners in order to improve Art Education and meet their territorial objectives.
- to enrich the educational value and goals in the art workshops with different cultural and practical approaches.
- to engage the young people in the reproduction of known sculptural & other works of art using natural materials from the regions/countries involved.
Specifically, we wanted to involve psychiatric users and their operators, allowing them to collaborate together and learn about a new way to approach art. From the point of view of the operators, however, we set out to provide them with new tools that they can use in their daily practice.

- Methods of the Workshop

The "Train the Trainer" Art Guidebook for art teachers and trainers will serve the general aim to approach art creations in an alternative way with the total involvement of senses within local art workshops and cultural environments. These local art workshops are to implement a certain method of the IO1 "Train the Trainer" Art Guidebook and use the tools from it. Create, use and transfer digital material related to art (games and videos) to young learners in local workshops. All these activities will be included in the IO2 and IO3.
With the exception of the first day, in which the first part of the morning was dedicated to the presentation of the project first and then the workshop, it was decided to make the participants the real protagonists of the workshop, allowing them to experience firsthand the selected software and create artistic materials.

- Description of 3 Day Activities

The 1st Local Art Workshop in Italy was attended by 9 subjects aged between 20 and 25, of which 4 females and 5 males. Of the 9 total subjects, 4 are operators who work at the Foundation "La Città del Sole Onlus" and the remaining 5 are users taken on by it.
During the first day, a presentation of the "Art Beyond Gaze" project was started first and then the workshop to be carried out together.
After this first theoretical part, before starting with the presentation of the first software and laboratory activities, the participants were given the initial questionnaire, aimed at investigating their expectations; since all the participants had a computer at their disposal, the subjects were able to fill in the questionnaire directly online.

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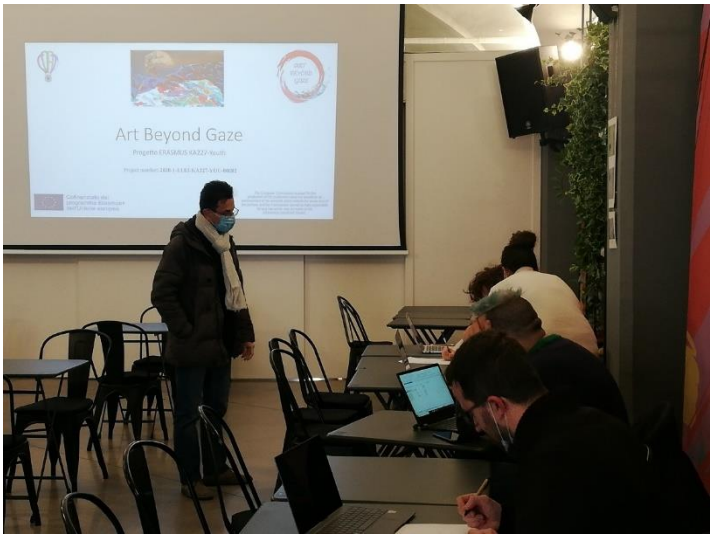
On this first day we led the participants to the discovery of visual art through Aggie.io, proposing activities that would allow participants to create artistic products in a collaborative way, but also to learn about the potential of the proposed software and its various possibilities of use.
The second day we partly continued with the exploration of visual art, but offered the participants interactive activities, and we started to introduce them to the art form to which this day was dedicated, namely music. All this was possible through the "Google Arts & Culture" website and the Scratch software, which particularly captured the interest of operators.
On the third and last day it was decided to have art explored through 2 other senses: touch and smell.
The software chosen to do this is TinkerCad, as it allows the creation of 3D artifacts, which can then be printed and explored with all the senses. At the end of the meeting, the participants were given the final satisfaction questionnaire.

- Photos, videos, interviews



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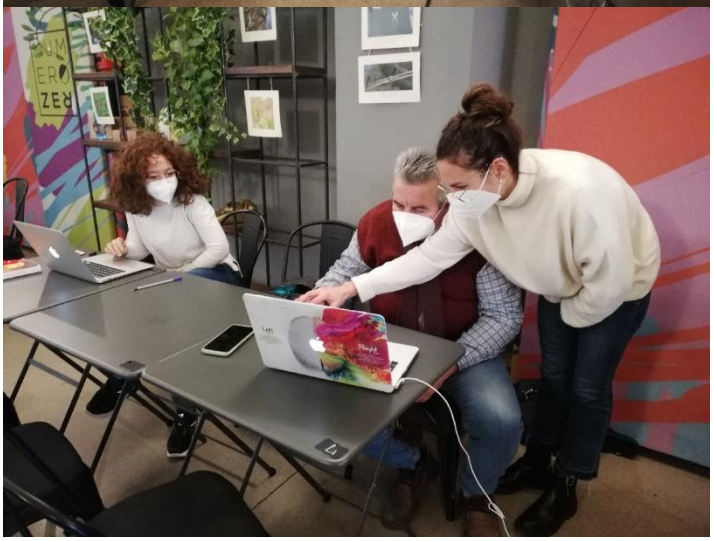

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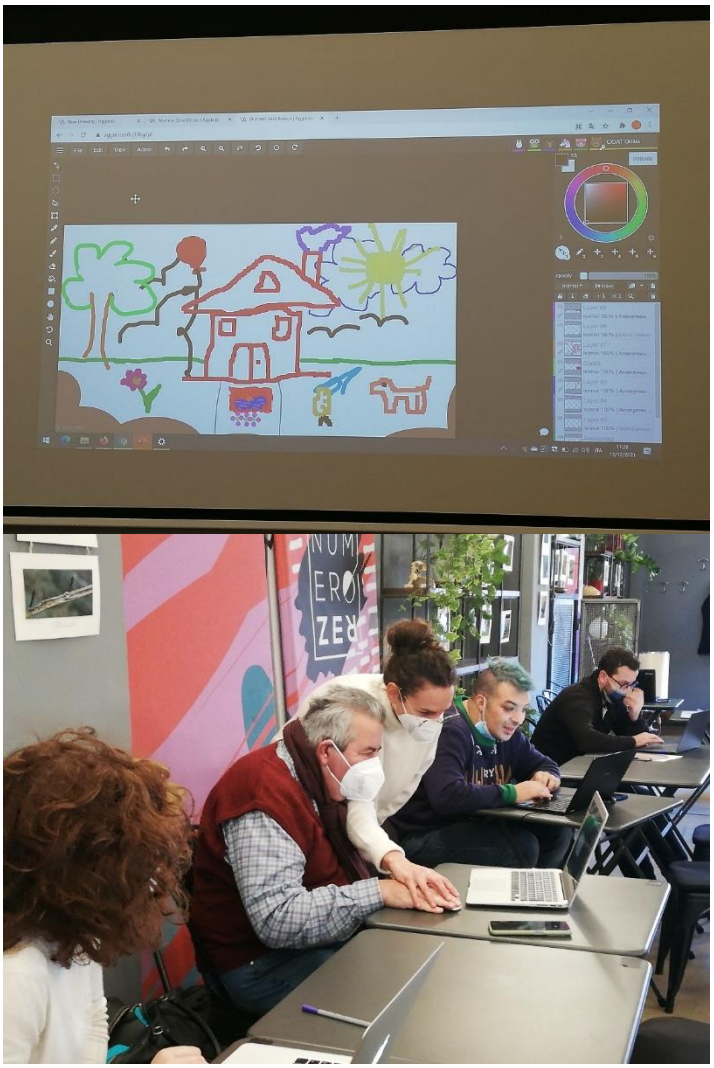

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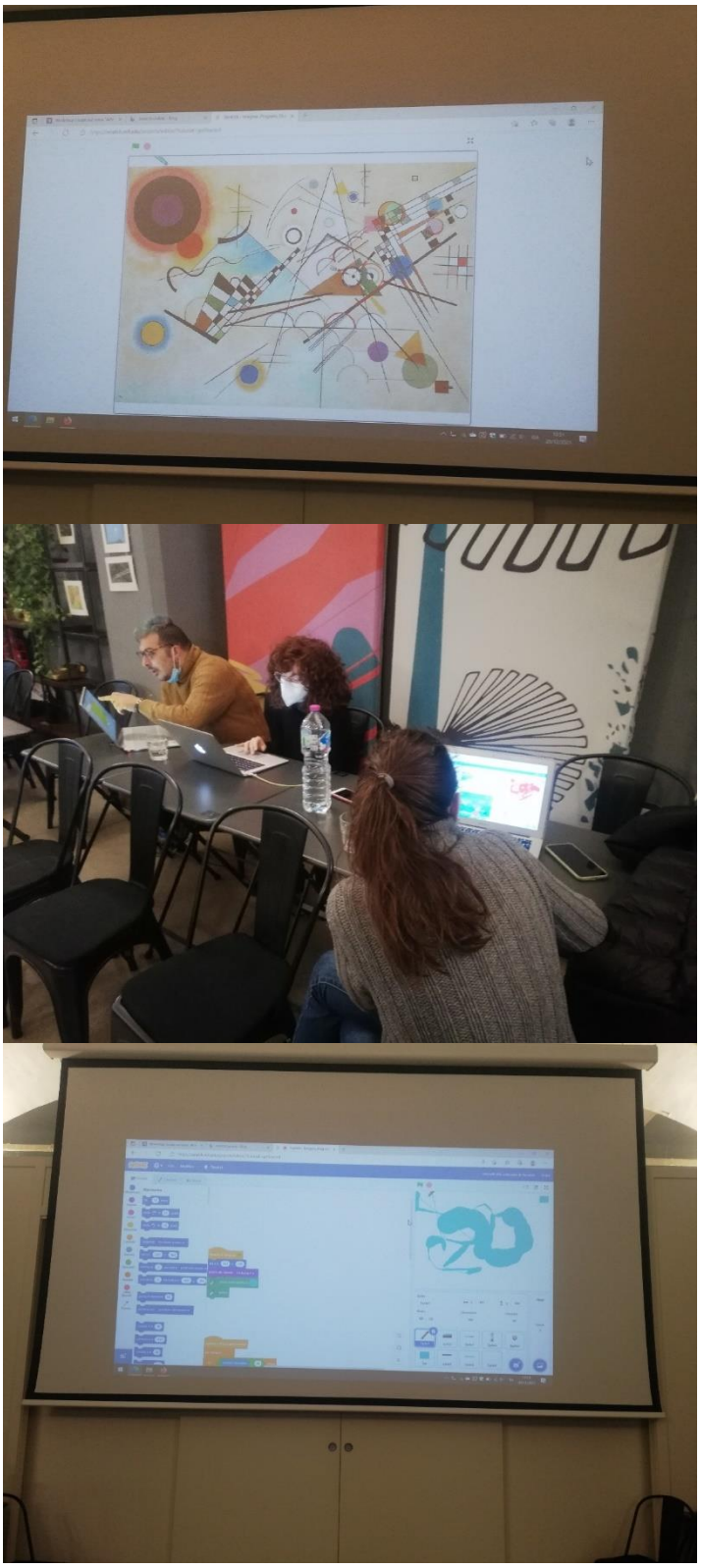

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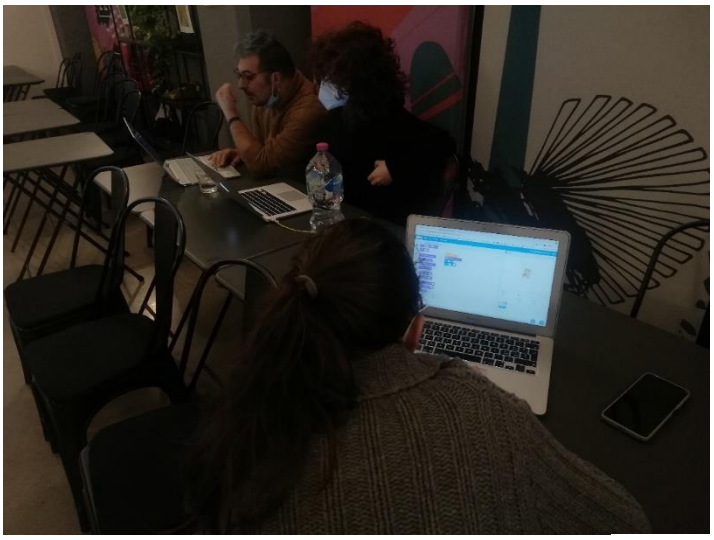

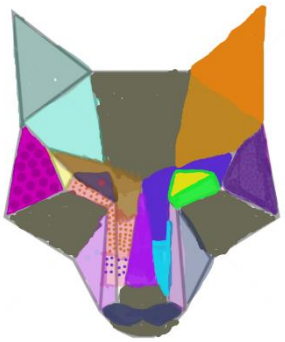

- Conclusions

The first Local Workshop was aimed at putting in practice the knowledge acquired during C1 training sessions in Perugia, mainly accessible digital tools for creation and cooperation.
The main goals for the workshop that was designed and implemented in Perugia were:

1. Allow psychiatric users and their operators to collaborate together and learn about a new way to approach art.
2. Creating a multi-level activity where participants with and without SEND could work in equal conditions.
3. Creating a context where participants could express themselves and cooperate with partners with different abilities.
4. Provide operators with new tools that they can use in their daily practice.

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The feedback received from all participants (the users and the operators) was positive and encouraging both to replicate the experience within the same context and within analogous contexts.

3.3 Spain

- Introduction

The first local workshops of teachers in digital art through the digital tools learned in Perusa, Italy were held in **November and December 2021**, throughout **2 sessions,1st online and 2nd face-face meeting.**

Local Workshops has been involved local cultural centers, galleries, schools special and not, vet schools, public bodies to spread the above mentioned innovative practices and the knowledge acquired to the youth workers and the young people, so they can be implemented.

Due to the restrictions imposed by the Covid-19 outbreak, first sessions took place online,via genially platform and jamboard platform for exercises. It was organized in 6 hours distributed in 3 hours per session (from 9 a.m. to 12 p.m.). In addition, to complement thetraining, there were an additional survey as evaluation in order to improve next local workshops to be done during 2022.

- Choice of Thematic in Arts

  Romanesque frescoes. We chose them because they have very specific shapes and fronts,with defined contours and flat colors. Egyptian art would also serve.

- Choice of Digital Materials

Interactive game with *Canva* (computer or tablet) where the participant has a series of elements of different Romanesque frescoes already cut out (eyes, faces, hands or other body parts,animals or animal parts, etc.), with Canva

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was be able to combine them (with the mouse, with the finger if the screen is tactile, or with the view -Toby or Enable viacam.

We also used genially, an interactive tool to create presentations that allow to create materials accessible indifferent formats (visual, audio, etc)

- Agenda of the Local Workshop

Session	Activity Carried Out
Session Number 1 - Online	09.00 – 10.00 → Each school presented a theorical introduction to Romanic Art with genially 10.00 – 12.00 → Collaborative online game between the schools in the framework of Romanic Art
Session Number 2 – Face to Face	09.00 – 10.00 → Welcome and pin printing 10.00 – 12.00 → Collaborative game to design a Romanic Church

- Description of 3 Day Activities

During implementation, **2 sessions** took place:

1. The first session took place on 16November and 17 November 2021 online
2. The second session took place on 17 November and 18 November 2021 face to face

The training activities were developed not based solely on the frontal model, but through the use of digital games and discussions and taking a cue from the flipped classroom model,by means of which it will make the local workshops more interesting and effective, producing results more long-term.

The preparation of the 1st local workshop was done by Escola Art Olot, Integra School and Blue Room innovation which organized during September/October different internal meetings (presential and face to face) in order to organize the workshop in the best way andalso involve

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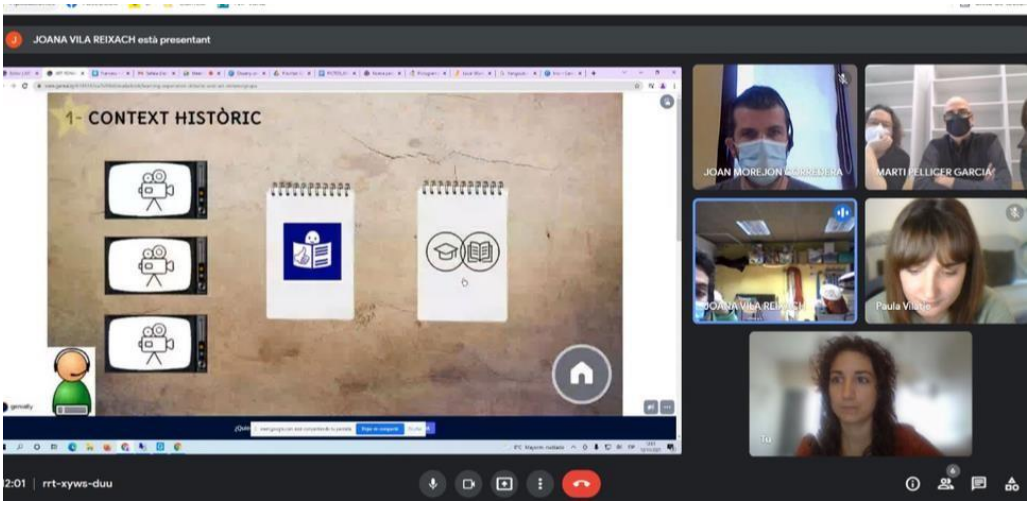
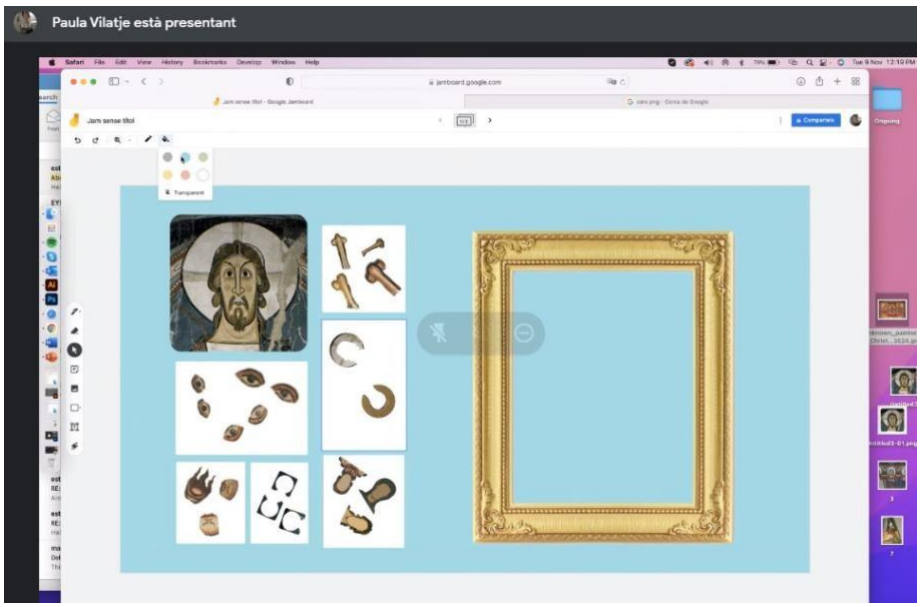
other schools from Catalonia.



The first session, each teacher presented Genially platform and engaged the students to participate and learn about romanesque art. After 1 hour, all students start online exercises by jamboard platform, different schools interacted online creating different romanesque art pictures. Also, this session aimed at clarifying the timing of whole training programme and how will work next face to face session



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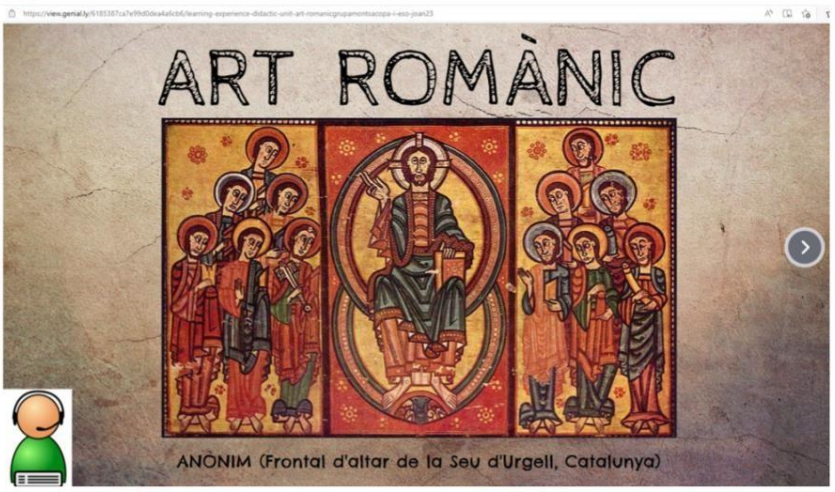

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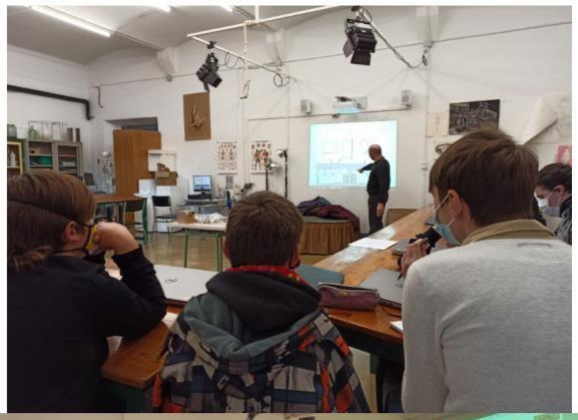
The second session was entirely dedicated to face-to-face collaboration in order to create a Romanesque art picture for a church. It consisted of the presentation of the activity and the collaborative work.

As break ice activity, each student created a badge with their name and the romanesque style self-portrait they created during the first session, so that all students knew the each other's names easily.

After this handcraft present, by groups started to create digitally their own romannesque art draw for a church.



- <u>Outcomes & Evaluation of the Teaching</u>

	Name teacher	nº students	years old	evaluation
Joan XXIII (prgarama Pont)	Judit Rabat	15	16/21years old	8
Escola Art Olot	Alba Domenech	12	16 to 18 years old	2
Joan XXIII	Joan Morejon	12	14 to 16 years old	
Montsacopa	Carles Salud	21	12 to 13 years old	
Escola Pia	Irene Bosch	11	12 to 13 years old	
IFE?	Anna Bernal	10	20 years old	4
		81		14

Only 14 students evaluated the training, it is an incidence that we will work to solve it during next local workshops (Evaluation link: https://forms.gle/fa7kn9hZviv7PN1XA).

- Conclusions

The first Local Workshop was aimed at putting in practice the knowledge acquired during C1 training sessions in Perugia, mainly accessible digital tools for creation and cooperation.

5. The main goals for the workshop that was designed and implemented in Olot were: Approaching teenagers to a specific historical artistic style (romanesque).
6. Creating a multi-level activity where participants with and without SEND could work in equal conditions.
7. Creating a context where participants could express themselves and cooperate with partners with different abilities.

The feedback received from all participants (the teenagers and their teachers) was very positive.

As for the organisation, cooperation between Blue Room Innovation, Joan XXIII-Integra and Escola d'Art d'Olot has been a very positive experience, making it possible to join efforts and develop a more ambitious workshop thanks to each one's expertise in their own field.

3.4 France

- Introduction

The first local digital workshop Abeyga took place in Lyon, in the Musée des Beaux-Arts and in the Musée Confluences. It's involved 13 university (adults) social sciences students of the University Lumière Lyon 2. The main idea was to work with two basic and symbolic tools (pencil, gum) representing two extremely popular towers of the city of Lyon (known with their nicknames "pencil" and "gum") in order to use the familiarity of the language in the service of the art. Pencil and gum as basic artistic tools, but also as basic common sense words.

Hand drawn (pencil, gum) in the musuems

Reproduction (scan) of drawings

Work on computer with pencil and gum

- Choice of artistic painting

The first initial choice was the recreation (with pencil and gum) of the last acquisition of the Musée des Beaux-Arts de Lyon, the last painting of Matisse (“Katia à la chemise jaune”). Unfortunately, this painting had just been removed from the Museum for a later exhibition. So it was a nice sequence of improvisation with the students to choose a piece of art on the spot. After visiting the museum, students finally choose collectively an interesting quadriptych painting of Jean-Paul Laurens “Études pour les "récits des temps mérovingiens" (1879) illustrating four characters, none of whom look the painter in the face.

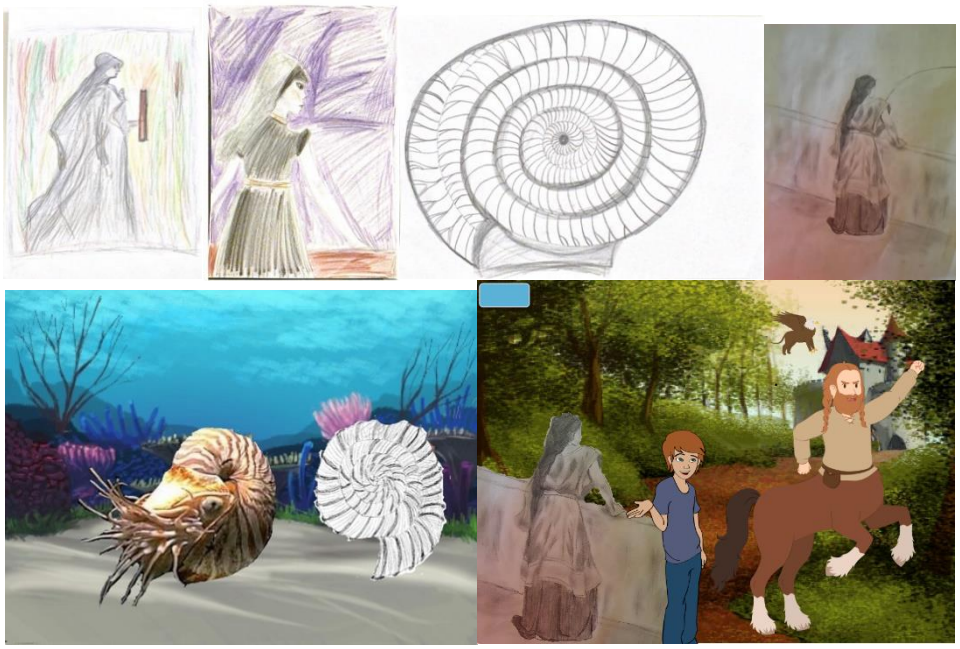
After a discussion between us, the students each worked on the reproduction of the work with their pencils and gums.

The second day of the workshop was realized in a recent natural history museum (Musée Confluences). This time the group of students should choose the exhibit to be reproduced, again with pencil and gum.

After a group visit, the students made an interesting choice of an object, Ammonite, as one of the few 'touchable' objects in the museum.

- Choice of Digital Materials

Finally, the third day, the students worked on their reproductions by integrating it into the digital Scratch program, with 3d picture and sound.



- Agenda of the Local Workshop

Session	Activity Carried Out
17/03/22 8h30-10h30: Intro to the project ABeyGa, info Scratch 10h30-12h30: Visit of the museum, choice of paint 13h30-16h00: Reproduction of the painting (pencil, gum)	Face to face
09/04/22 10h30-12h30: Visit of the museum of natural history, choice of an object from the exposed work 13.30-16h00: Reproduction of the painting (pencil, gum)	Face to face
11/04/22 10h00- 14h00: Work with Scratch Conclusion of the workshop, evaluation	Face to face

- Outcomes & Conclusions

The realization of the art-workshop was a great experience of discovery and improvisation for the students. First of all, the discovery of two beautiful museums, places par excellence for the concentration of contemporary and ancient works of art from the natural history of man and nature. Discovery also for the Abeyga program, its orientations, its objectives and its educational vocation. Finally, improvisation, both in relation to the choice of the artistic work to be reproduced, among

the thousands of works in a museum, and in relation to the reproduction technique, with pencil and eraser, but also and above all with the help of software afterwards (e.g. Scratch).

The students were extremely interested in the objectives of the Abeyga project, but also in the appropriation of these objectives through the use of familiar and at the same time symbolic objects (e.g. pencil, gum). This articulation between living space, everyday language and improvisation, without evaluation of artistic skills, made the project Abeyga a success between them.

Finally, the students realized that we can have many views/regards when we visit a museum and when we are in contact with a work of art. Furthermore, they particularly emphasized the interest for the visitor to develop a tactile relationship with certain objects exhibited in a museum and that this contact modifies the perception and representation of the art object for the visitor.

4. Conclusions

The Art Beyond Gaze project aims at increasing the use of digital material as a means to make the education procedure more attractive, interactive, cooperative and adapted to the demands of the contemporary era, regarding the digital transformation of the schools. Also, as a result of the height of the COVID-19 period, during which the world has braced for the “new normal” where the use of digital technologies has become mainstream and more embedded into almost every realm of everyday life facilitating the transition to the digital transformation.

Below we report what emerged during this project activity summarized by points:

- The results and findings of these LW showed that digital technology can effectively promote the development of art creation and pointed to the ways in which youth engage with technology that encourages active learning.
- Building on sociocultural theories of constructionism as well as Dewey's theories of the arts and aesthetics as a democratic pedagogy, these LW showed that digitalization of education material emphasizing graphics, music, and video and the wide access in programming environments connect effectively students with and without SEND as well as underprivileged youth.