

GaGEN

Intergenerational Learning Approach to Environmental Education

Handbook





Partners

Euro-Med Youth Federation - EMYF e. V.

Aproximar

Afeji Hautes-de-France

Virtual Campus LDA

K-GEM

PCG Polska Sp. z o.o

Authors

Maria Gonçalves, Aproximar

Joana Portugal, Aproximar

Agnieszka Sokolnicka, PCG

Anna Gust, PCG

Colin Fertin, Afeji

Marlene Faria, Virtual Campus

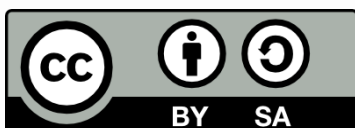
Carlos Vaz de Carvalho, Virtual Campus

Emre Sefa, K-GEM

Mostafa Abbas, EMYF

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Introduction

Environmental education has mainly targeted younger generations and left older people aside (Liu & Kaplan, 2016). However, educating older generations can be a powerful tool for behavioural change and have a more significant impact on climate change. The interaction between children and older adults also seems to gain a greater added value when compared to stand-alone interventions (Liu & Kaplan, 2016). In this sense, deconstructing negative stereotypes of ageing is thus a fundamental step to promoting a more positive society for all ages (Marques et al., 2020). Promoting intergenerational activities is a possible path to achieving this goal (WHO, 2021). Studies show that intergenerational play changes the modes of communication and the standard roles of young and older people and thus provides opportunities for the two age groups to connect (Zhang & Kaufman, 2016).

Intergenerational learning is a process through which knowledge is exchanged between two or more individuals from different generations, fostering a deeper understanding of a topic, concept, or aspect of culture for all parties involved. This type of learning often entails a two-way transmission of information, skills, attitudes, and habits as younger and older members interact with one another. Through this process, individuals reflect on their own knowledge and beliefs while learning from those in other generations (Stefan, 2020).

Intergenerational activities are those organised to foster connection and engagement between different generations. The difference between intergenerational learning and other types of learning (e.g., multigenerational) lies in the focus on individual participants from different generations who are actively involved in the learning process. It's a **two-way process** in which knowledge, skills and experiences are shared between different generations (Rabusicová et al., 2015). These types of activities need to ensure reciprocity, promote mutual learning and benefits for all target groups involved, and foster participation and collaboration towards a common goal (Coull, n.d.; Schmidt-Hertha et al., 2014). Thus, it is not merely the act of grouping people of different ages, but rather the implementation of interactive actions and activities that impel participants to connect with one another.



The [State-of-the-art of games – Transnational report](#) (Brzozowska et al, 2023) and the [Methodological framework of the GaGEN game](#) (Gonçalves et al, 2024) already placed an emphasis on the relevance of intergenerational games and the most relevant definitions. Furthermore, it is available the [Training Pack for Facilitators of the Game](#), as a read-only document specific training contents to build the capacity of adult educators to implement the intergenerational activities combined with environmental education and the use of the game, as well as a [Webinar Series](#) around key topics. Despite that, there is a need to provide a more hands-on approach that can support effective implementation.

This document presents the Handbook of the GaGEN initiative, in the meaning of an ‘instructions’ manual’ or a book containing practical information for operating the intergenerational learning approach to environmental education, using the [GaGEN Game](https://gagen.eu/). This handbook was developed within the scope of GaGEN initiative, which is funded by Erasmus+ KA220-ADU - Cooperation partnerships in adult education. For more information on the project development and access to the specific outputs and resources, you can consult the official website: <https://gagen.eu/>.

GaGEN – “Using Serious Games to engage cross-GENERations into awareness of climate change” is a project that aims to increase awareness of the impact of climate change in everyday living among children and older adults, especially introducing the concept of circular economy in everyday life, as well as, to increase self-awareness on the potential role children and older adults have as change agents in climate change.



In this Handbook, readers will find information on the main conceptual ideas that support the approach used and a program for developing intergenerational learning activities, including dissemination, recruitment, sessions, and evaluation using the GaGEN serious digital game. It also contains lived experiences of the target groups in the format of case studies, prepared by the partners to showcase specific features of the implementation of the activities. At the end, readers can find key recommendations based on pilot reports across the different countries, supporting the replication of the intergenerational learning approach to environmental education using the GaGEN Game.



This Handbook targets adult educators and intergenerational practitioners who wish to apply different methods to their educational practice, including intergenerational learning and environmental education. Adult educators are defined here as professionals or volunteers who facilitate “adult learning” as the «range of formal and informal learning activities, both general and vocational, undertaken by adults after leaving initial education and training» (European Commission, s.d.¹). By incorporating the model of intergenerational learning, the GaGEN approach opens the target groups to others besides adults; in this case, to children under 12.



Figure 1. A group of facilitators in training

¹ <https://education.ec.europa.eu/education-levels/adult-learning>

Objectives

The Handbook is focused on instructions and guidelines for an Intergenerational Learning Approach to Environmental Education. It consists of a designed intergenerational learning programme and a structure for the intervention. The aim is to raise awareness on participants on the impact that they may have as agents of changes in behaviours and attitudes towards climate change and circular economy. At secondary stake, though one of the most important one, is the intergenerational connection and relationship established.

The Handbook is designed to ensure effective implementation of the GaGEN game within an intergenerational educational setting, promoting environmental awareness and behavioural change. The expected specific outcomes are:

- **Enhanced Intergenerational Engagement:** Establish meaningful interaction between children (under 12 years old) and older adults, fostering mutual learning, empathy, and shared values through collaborative game-based environmental education.
- **Structured Intervention Sessions:** Provide a clear and adaptable session framework for educators and facilitators to implement the intervention program, including timing, roles, materials, and facilitation tips that support intergenerational dynamics.
- **Effective Use of the GaGEN Game:** Ensure that the game is used as a central pedagogical tool to stimulate discussion, reflection, and action-oriented learning on climate change and circular economy concepts across age groups.
- **Increased Environmental Literacy:** Improve participants' awareness of climate change, sustainability, and circular economy principles through active, participatory, and age-inclusive educational methods.
- **Scalability and Replication Potential:** Offer a replicable model that can be adapted to different contexts and communities across Europe, supporting broader dissemination and long-term impact of the GaGEN educational methodology.

The intervention is organised by making the GaGEN game a learning tool and resource and not an end. Despite this methodological choice, the game is available to play free, without a structured and formal approach.

Methodology

A methodology is a documented and organized process by which stakeholders can follow a series of steps and instructions to reach specific objectives. The GaGEN methodology derives from the conceptual framework presented above. The specific indications and guidelines for implementing the sessions are provided in this methodology and should be followed by facilitators in the delivery phase.

The GaGEN methodology is intended for everyone working to create a world for all ages through education and non-formal learning to create awareness of climate change using a serious digital game. The professionals who will work with this methodology may be labelled with different roles:

- Facilitators
- Adult educators

Dissemination resources to promote the game

The dissemination of a program is a starting point for acknowledging its importance to the community. Dissemination may occur at different levels, if you have just started your journey on GaGEN methodology, it may be useful to get your top management on board by presenting the benefits of community-based learning and intergenerationality and get their approval and commitment for implementation. Other dissemination levels involve targeting specific audiences, such as any stakeholders interested in the results of the program, including the schools, community organizations working both with young and older adults, and finally, the direct users themselves.

The dissemination strategies are a common concept (Rocha et al, 2016), and they start from simple leaflets to announcements on social media (see figure 2). Here are some ideas to use when **launching** the program:

- Organise and publish key information on the Initiative's website. Include objectives, target groups, calendar and timeframe;
- Use and or adapt the GaGEN templates to your local context, clearly outlining the expectations (what they will get at the end) and time commitment (for how long);
- Repost the GaGEN posts or, if you make any type of post on your social media, use the hashtags #GaGEN;
- E-mail directly to target audiences you see fit, using the e-mail banner.

In addition, after the program starts, there is a need to make a continued effort to communicate the progress of the implementation, feedback from the users, specific outcomes

reached, or milestones to celebrate. Facilitators should be engaged in these efforts to ensure a wide audience gets to know the program.



Figure 2. Example of social media post for dissemination

Recruitment phase

The GaGEN methodology is an active and engaging program that mobilizes facilitators, children under 12 years old and older adults. The recruitment of these target groups starts with dissemination efforts at the launch of the program. Moving forward, there is a need to adopt a tailored strategy to reach each specific target group.

1. Facilitators

The GaGEN game accounts for a facilitation model in which two facilitators are together in the game delivery. These facilitators can be adult educators, professors/teachers, community workers and other professionals interested in promoting intergenerational activities to raise environmental awareness. A set of medium-level digital competencies defines the profile of the facilitators to give the necessary support to the beneficiaries of the game – older adults and children.

The skills include but are not exclusive to: recognising age stereotypes across generations; identifying strategies to combat interpersonal stereotypes; identifying strategies to overcome personal ageist attitudes; knowing intergenerational learning framework and concepts;

recognise and applying the concept of intergenerational learning; knowing the GaGEN methodology and program².

2. Children under 12 years old

The involvement of children under 12 years old is central to the GaGEN intergenerational learning experience, as they are one of the central target groups for the initiative. Recruitment efforts for this group should be carried out in close collaboration with local schools, after-school programs, educational centres, and community-based organisations that work with children.

The recruitment strategy should ensure that participating children are:

- Engaged in informal or formal learning environments open to extracurricular or project-based learning.
- Supported by guardians or caregivers who understand and approve of their participation in the intergenerational sessions.
- Available to participate consistently across the planned duration of the intervention program.

It is essential to communicate the educational value of the activity to both educators and parents, highlighting how the GaGEN game fosters environmental awareness, critical thinking, empathy, and collaboration skills. Materials such as child-friendly information leaflets or short presentations may be used to introduce the concept in classrooms or group settings.

Activities should be inclusive of children with diverse backgrounds and learning needs, promoting equal access to the learning experience and supporting intergenerational inclusion as a core value of the methodology.

3. Older Adults

Older adults are key participants in the GaGEN approach, bringing life experience and diverse perspectives to the learning process. Their active involvement strengthens intergenerational bonds and promotes social inclusion while empowering them as contributors to environmental education.

Recruitment of older adults should prioritise diversity and accessibility, reaching out to community centres, senior clubs, local councils, adult education programs, volunteer networks, and intergenerational initiatives already in place. Partnerships with organisations working in the fields of ageing, lifelong learning, and social services can support both outreach and trust-building with this target group.

Key considerations for recruiting older adults include:

² These skills are the object of the training program offered as part of the GaGEN initiative.

- Ensuring that the proposed activities are accessible, enjoyable, and presented in an age-inclusive way.
- Communicating the benefits of participation, such as social connection, a sense of purpose, and the opportunity to learn and share with younger generations.
- Accommodating possible physical, cognitive, or technological limitations with appropriate support from facilitators.

Recruitment messages should also emphasise the value of older adults as knowledge holders and active contributors to climate action, while being sensitive to potential apprehensions related to technology or new learning settings. Encouraging a spirit of mutual learning, rather than one-directional teaching, is key to successful engagement.

Programme implementation

OBJECTIVES

The aim of the activity is to create a moment/space for intergenerational sharing in which everyone can learn, teach and play a serious digital game.

In this sense, the specific objectives are:

- Play the GaGEN game;
- Create an opportunity for people from different generations to learn about climate change;
- Facilitate learning and respect between generations through collaboration;
- To perpetuate and share knowledge related to climate action through the perspectives of people from different generations.

Create an opportunity for people to realise that people of different generations have different knowledge and can have a more significant impact together.

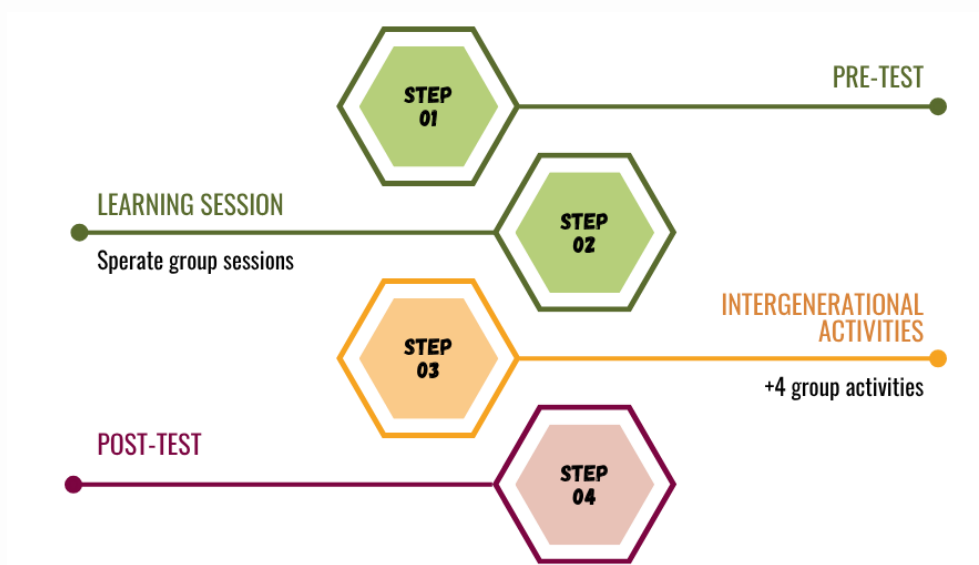
OUTCOMES

Short-term outcome: this activity allows participants of different ages to learn about climate actions, climate change, and circular economy through a serious digital game.

Long-term outcomes: this activity will create a perspective-taking situation that allows for positive perceptions that all generations have knowledge and can learn from each other, as well as increased empathy and understanding between generations.

STRUCTURE

The GaGEN program is organized in a series of face-to-face sessions following a structured process to achieve the proposed objectives.



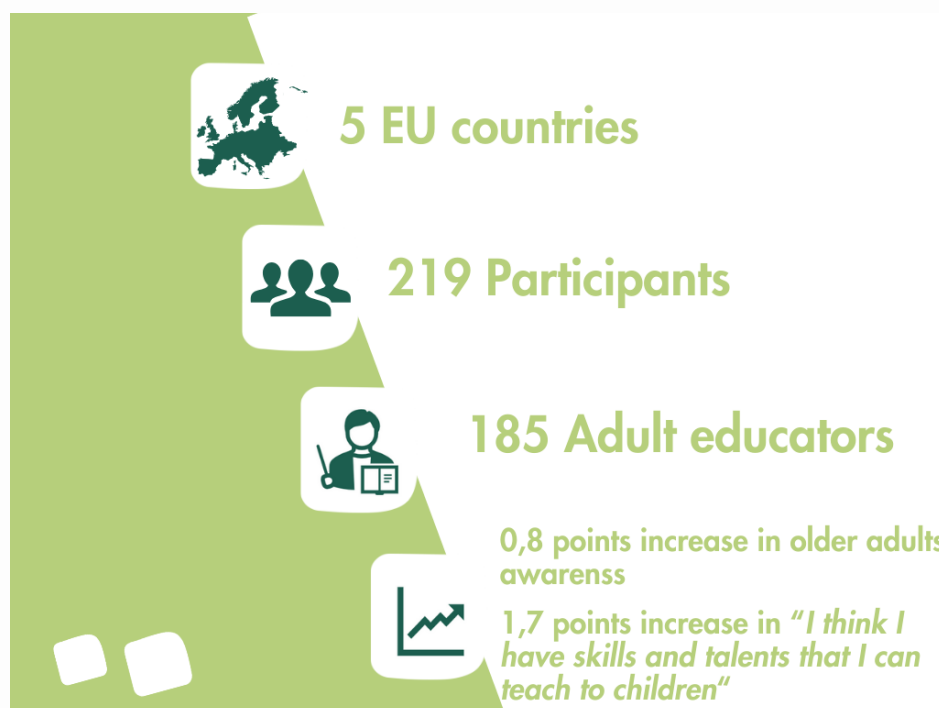
Overall structure proposed:

- Pre-test
- 2 learning sessions (one for each target group separately)
- 4 Intergenerational sessions
 - 1 hour for each session
 - 1 mission per session
- Post test

Aim: Create intergenerational groups, preferably one-to-one. Each session has a global theme that the groups will explore by playing the game intergenerationally.

The structure outlined for an effective implementation is intentionally designed with a more defined and consistent format. By applying this approach, one may ensure a reliable collection of evaluation data and to meet the objectives of the GaGEN methodology.

The above structure — including pre- and post-tests, four intergenerational sessions with specific missions — was established and tested by GaGEN partners (during the year 2025) and it allowed for meaningful comparison and assessment across different contexts.



It is important to note that the GaGEN game and methodology were developed with flexibility in mind. Facilitators and service providers are encouraged to adapt the structure, session length, and delivery mode to suit their local realities, needs, and participant profiles while maintaining the intergenerational and environmental focus at the core of the approach.



Figure 3. Program implementation in Portugal



Figure 4. Program implementation in France

ELEMENT	1st Case Study Poland - PCG
Introduction	<p><i>Identify what your case study is about.</i></p> <ul style="list-style-type: none"> ✓ <i>Interaction between participants</i> ✓ <i>Relationship developed over the course of the pilot</i>
Description of the Case / Context	<p><i>The sessions took place in a community center in Warsaw. The grandmother, a retired teacher, had limited experience with digital tools but a strong interest in nature and gardening. Her granddaughter was a primary school student who enjoyed video games and was curious about environmental issues, had some basic knowledge.</i></p> <p><i>At first, the older participant was cautious about using technology, while the child took an active, supportive role. Over time, they developed mutual trust and joy in cooperation. The grandmother began to take more initiative, while the girl showed pride in her grandmother’s growing skills. Gradually, they established a rhythm—discussing game missions, reading environmental challenges aloud, and deciding together which sustainable actions to take. The game scenario they played focused on water conservation and waste reduction.</i></p> <p><i>Throughout the game, both players contributed their perspectives. The grandmother shared stories about how water was used more sparingly in her youth, while the girl reflected on how her school promotes recycling. These exchanges created meaningful learning moments for both.</i></p> <p><i>The interaction was warm and natural, marked by laughter, curiosity, and a sense of discovery. The facilitator observed how the digital medium encouraged dialogue, and the generational gap seemed to disappear as they collaborated on solving virtual missions.</i></p>
Participant Experience & Testimonial	<ul style="list-style-type: none"> • <i>Grandmother: “I was surprised how much I could learn from my granddaughter. The game made me realize how simple actions, like recycling, really matter.”</i> • <i>Granddaughter: “It was fun! I liked explaining things to grandma about the computer and hearing her stories about how people lived when she was little.”</i>
Observations from Facilitators / Educators	<p><i>The facilitator noted that the pair quickly established a positive dynamic. The child took a guiding role in operating the device, while the grandmother contributed life experience and reflection. Their cooperation deepened as they progressed through the game. The facilitator observed mutual respect and growing enthusiasm.</i></p> <p><i>One key success was how the game supported natural conversation about sustainability. The digital challenges encouraged both players</i></p>

	<p>to share real-life examples of saving resources. The main difficulty appeared at the beginning, when the older participant was uncertain about touch-screen navigation, but this was easily overcome through the child's assistance.</p> <p>Overall, the pair demonstrated how the GaGEN game can effectively bridge technological and generational gaps while promoting environmental education.</p>
Lessons Learned / Key Takeaways	<ul style="list-style-type: none">• Intergenerational play promotes empathy and shared learning.• Simple, guided digital tools can empower older adults.• Facilitators should allow time for initial adaptation to technology.• Storytelling and real-life experiences enhance environmental understanding.



Figure 5. Program implementation in Poland

ELEMENT	2nd Case Study Poland - PCG
Introduction	<p><i>Identify what your case study is about.</i></p> <ul style="list-style-type: none"> • <i>Intergenerational activity in general</i> • <i>Interaction between participants</i> • <i>Relationship developed over the course of the pilot</i> • <i>Recruitment of participants</i> • <i>Learning sessions with the separate groups</i> • <i>Facilitators prespective</i>
Description of the Case / Context	<p><i>The pilot was hosted by a library where the facilitator works. The grandfather, a retired engineer, was curious about new technologies but had limited gaming experience. The boy, an enthusiastic gamer, volunteered to play with him after seeing the poster about the GaGEN sessions.</i></p> <p><i>At the start, both seemed slightly reserved. The facilitator encouraged them to work as a “team of environmental explorers.” The chosen game mission focused on energy efficiency in everyday life, reducing electricity consumption and promoting renewable sources.</i></p> <p><i>During gameplay, the boy naturally assumed the role of navigator, handling digital interactions, while the grandfather provided thoughtful analysis of the scenarios, often connecting them to real-world energy issues. For instance, he explained how older heating systems waste energy and shared insights from his past engineering work.</i></p> <p><i>As the session continued, the pair started discussing how their building could save energy, such as replacing bulbs with LEDs or improving insulation. This real-life application made the learning process meaningful and empowering. The interaction evolved from cautious cooperation to enthusiastic partnership.</i></p> <p><i>The setting encouraged informal conversation and humor, helping both participants overcome age-related stereotypes and discover mutual respect.</i></p>
Participant Experience & Testimonial	<ul style="list-style-type: none"> • <i>Grandfather: “It was inspiring to see how quickly the boy understood the logic of the game. I realized that young people can teach us as much as we can teach them.”</i> • <i>Boy: “I liked hearing stories about how energy worked before. I didn’t think about how much has changed.”</i> • <i>Grandfather: “The game made me think more about what I can still do to protect the planet.”</i>
Observations from Facilitators / Educators	<p><i>The facilitator observed steady improvement in collaboration especially during later sessions. Initially, the older participant hesitated to use digital tools, but the boy’s patience and enthusiasm encouraged him. Both participants engaged in problem-solving conversations and expressed pride in completing each mission.</i></p>

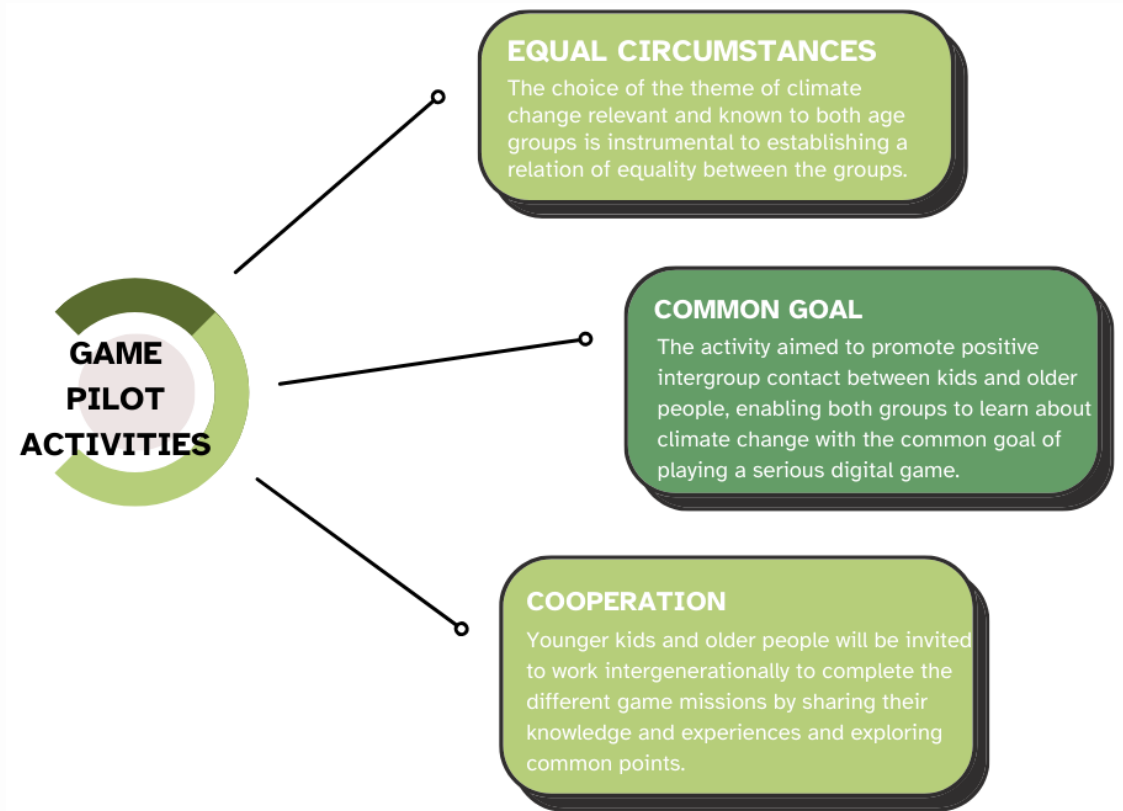
	<p>The game stimulated intergenerational dialogue about sustainability and technology. The facilitator noted the value of pairing participants with complementary strengths—technical knowledge on one side and digital fluency on the other.</p> <p>The main challenge was maintaining equal participation, as the younger player tended to dominate interaction. However, gentle guidance from the facilitator helped balance their contributions.</p>
Lessons Learned / Key Takeaways	<ul style="list-style-type: none">• Matching participants with different strengths enhances collaboration.• Encouraging dialogue prevents dominance by one partner.• Environmental topics gain depth through real-life examples.• GaGEN supports both digital inclusion and climate education.



Figure 6. Program implementation in Poland

INTERGENERATIONAL PRINCIPLES

The programme framework follows the intergenerational learning theories that propose that when planning an intergenerational programme, some conditions need to be accounted for to ensure its effectiveness (WHO, 2021):



SESSIONS STRUCTURE

The following section outlines the structure, goals, and content of the preparatory learning sessions delivered separately to younger and older participants before the intergenerational activities. These sessions were designed to deconstruct stereotypes, introduce the GaGEN game, and lay the foundations for positive, meaningful intergenerational interaction.

A) Learning sessions for younger participants

Goals	Duration of the sessions	Pedagogical methods
<ul style="list-style-type: none"> Getting to know the group Create space for those involved to feel comfortable with each other Introducing the game and create the profiles Deconstruct stereotypes 	45 minutes to 1h	Active

Time	Activities	Resources and materials
10 min.	Presentation of the Game	PC, GaGEN Game
15 min.	Pré-teste	PC, GaGEN Game
10 min.	Activity: Guessing the age of stereotyped description The goal is to expose participants to counter-stereotypical information. Read or show a small description of a person (don't mention their age) and include some stereotypes. Ask participant for the character's age and gender, and see if stereotypes guide their responses.	PPT with the descriptions
5- 10min.	Group discussion regarding examples of counter-stereotypical older people. Deconstruction of stereotypes.	
5 min.	Briefly present the GaGEN program plan.	

B) Learning sessions for older participants

Goals	Duration of the sessions	Pedagogical methods
<ul style="list-style-type: none"> Getting to know the group Create space for those involved to feel comfortable with each other Introducing the game and create the profiles Deconstruct stereotypes 	45 minutes to 1h	Active

Time	Activities	Resources and materials
10 min.	Presentation of the Game	PC, GaGEN Game
15 min.	Pré-teste	PC, GaGEN Game
10 min.	Activity: Guessing the age of stereotyped description The goal is to expose participants to counter-stereotypical information. Read or show a small description of a person (don't mention their age) and include some stereotypes. Ask participant for the character's age and gender and see if stereotypes guide their responses.	PPT with the descriptions
5- 10min.	Group discussion regarding examples of counter-stereotypical younger people. Deconstruction of stereotypes.	
5 min.	Briefly present the GaGEN program plan.	

ELEMENT	1st Case Study France - AFEJI
Introduction	<ul style="list-style-type: none"> ✓ <i>Intergenerational activity in general</i> ✓ <i>Interaction between participants</i> ✓ <i>Facilitators perspective</i>
Description of the Case / Context	<p><i>The first pilot session of the Gagen game took place in a service residency for elderly people in northern France. The activity was coordinated by a professional facilitator who partnered with the local CCAS (Community Centre for Social Action) to form an intergenerational group composed of 18 senior residents and 6 children under 12 years old.</i></p> <p><i>In preparation, the facilitator organised a preliminary meeting with the older adults to introduce the project and address their concerns about using digital tools. Many participants expressed strong apprehension about the technological aspect of the game, as they had little to no experience with computers. Some even sought help from their families in advance and printed basic guides explaining how to use a mouse or keyboard. Despite these fears, they maintained their commitment to take part, motivated by the opportunity to share an experience with local children.</i></p> <p><i>The facilitator also held an introduction session with the children at the CCAS to build curiosity and engagement before the main event.</i></p> <p><i>During the game session, participants were welcomed together and received a short demonstration. They were then divided into two areas:</i></p> <ul style="list-style-type: none"> • <i>A computer room where five laptops were pre-installed with the game, and pairs of older adults and children played side by side, assisted by two facilitators.</i> • <i>A projection room where participants who were less comfortable with computers contributed collectively through discussion and decision-making as the facilitator navigated the game on a large screen.</i> <p><i>At first, children naturally took control of the mouse and digital navigation because of their familiarity with technology, while older adults observed more passively. However, after gentle reminders from the facilitators to ensure balanced collaboration, the pairs adjusted. The children began to explain, guide, and involve their older partners more actively. This dynamic fostered a genuine spirit of cooperation, mutual learning, and empathy.</i></p>

Participant Experience & Testimonial	<p><i>Older adult: "I was nervous about using a computer, but the children were very patient and kind."</i></p> <p><i>Child: "At first I wanted to do everything myself, but then it turned out to be fun to help B, my team-mate, (she really struggled but it's ok!)"</i></p>
Observations from Facilitators / Educators	<p><i>Facilitators observed an initial gap in confidence between generations, with children demonstrating ease in handling the technology and older adults showing hesitation. Through structured encouragement and clear guidance, both groups progressively established a cooperative rhythm. The children's natural enthusiasm evolved into active mentorship, while the older adults contributed through discussion, reasoning, and decision-making.</i></p> <p><i>The emotional engagement was particularly strong: laughter and mutual encouragement were frequent, and both groups expressed pride in their shared achievements. The older adults showed visible progress in confidence using the computer, and the children gained patience and awareness of intergenerational differences.</i></p> <p><i>The most notable success was transforming initial apprehension into enjoyment and curiosity. The main challenge remained the older adults' limited digital literacy, requiring additional support and time for explanations.</i></p>
Lessons Learned / Key Takeaways	<ul style="list-style-type: none"> • <i>Intergenerational motivation was a strong driver for participation, overcoming digital anxiety.</i> • <i>Balanced facilitation is essential to ensure both generations contribute equally.</i> • <i>Providing preparatory sessions helped build confidence among older adults.</i> • <i>Future pilots could include even more step-by-step "digital warm-ups" before the gameplay sessions to reduce technical stress.</i>

Summary of the case study :

In a service residence in northern France, a facilitator launched the first pilot of the Gagen game.

Eighteen senior residents, most with limited computer experience, were invited to participate alongside six children from the local social community centre. Despite their enthusiasm about meeting the children, many older adults felt intimidated by the idea of using computers.

Before the session, the facilitator organised a short preparatory meeting to explain the project and allow residents to express their fears. Some participants even printed "how-to-use-a-computer" guides and sought help from family members.

On the day of the game, the initial moments revealed a clear imbalance: children instinctively took control of the mouse and navigation, while older adults observed passively. The facilitator quickly intervened, gently reminding pairs to share tasks and encouraging older adults to try using the mouse themselves. Gradually, the atmosphere changed: laughter, cooperation, and shared curiosity replaced the initial apprehension. By the end of the session, both groups were engaged and proud of what they had accomplished together.

This case highlights a double learning challenge:

- Digital anxiety and empowerment among older adults
- Facilitation of balanced intergenerational collaboration

The facilitator had to navigate between providing reassurance and ensuring equity in participation. The turning point came when guidance was reframed from “helping the older adults” to “playing together as a team”.



Figure 7. Program implementation in France

Reflection Exercise *(To help facilitators analyse how to manage digital or confidence gaps in intergenerational activities.)*

- What emotions do you think the older adults experienced before and during the session? How could you acknowledge and validate these emotions as a facilitator?
- What facilitation techniques could prevent one group (e.g. the children) from dominating the interaction?
- How can the design of the physical and social space (rooms, roles, timing) support inclusion and confidence-building?
- Imagine you are preparing the same session: what pre-activity would you create to familiarise older adults with technology while maintaining motivation?

C) Intergenerational sessions

Main structure



TIME	1 st Activity	2 nd Activity	3 rd Activity	4 th Activity
10 min.	<ul style="list-style-type: none"> • Introduction • Get to know each other 	Opening activity: Select on topic from the activities bank	Opening activity: Select on topic from the activities bank	Opening activity: Select on topic from the activities bank
30 min.	<ul style="list-style-type: none"> • Create their characters in the game • Game playing 	Game playing	Game playing	Game playing
5min.	Closing activity: Select from the activities bank	Closing activity: Select from the activities bank	Closing activity: Select from the activities bank	Closing activity: <ul style="list-style-type: none"> • Post-test • Satisfaction

ELEMENT	Case Study Portugal - Aproximar
Introduction	<ul style="list-style-type: none"> ✓ <i>Intergenerational activity in general</i> ✓ <i>Interaction between participants</i>
Description of the Case / Context	<p><i>This case study presents the Portuguese experience of piloting the GaGEN intergenerational game at Centro Paroquial de São Brás.</i></p> <p><i>Participants were recruited from two existing groups within the centre: children attending the summer activities and older adults from the day centre. These groups usually operate separately and rarely interact, since they even have separate buildings.</i></p> <p><i>Before the intergenerational sessions, each group participated in one learning session to deconstruct potential stereotypes and get familiar with the purpose of the activities. Then, four intergenerational sessions were organised, where participants played the game collaboratively, explored environmental challenges, and engaged in discussions guided by facilitators. The facilitators observed the evolving relationships, the development of mutual support, and the natural exchange of knowledge between generations.</i></p> <p><i>The pilot took place in Amadora, Portugal, at Centro Paroquial de São Brás. The activity involved two groups: approximately 17 children and 13 older adults. The primary focus of the sessions was to explore environmental topics through playful and collaborative missions using the GaGEN digital game.</i></p> <p><i>Participants were recruited from two existing groups within the centre: children attending the summer activities and older adults from the day centre. These groups usually operate separately and rarely interact, since they even have separate buildings.</i></p> <p><i>Before the intergenerational sessions, each group participated in one learning session to deconstruct potential stereotypes and get familiar with the purpose of the activities. Then, four intergenerational sessions were organised, where participants played the game collaboratively, explored environmental challenges, and engaged in discussions guided by facilitators. The facilitators observed the evolving relationships, the development of mutual support, and the natural exchange of knowledge between generations.</i></p> <p><i>The sessions were designed to promote teamwork and dialogue between generations. Initially, the children showed great enthusiasm for playing the game, while the older adults were more motivated by the opportunity to interact with the younger participants. As the sessions progressed, visible bonds formed between the two groups, marked by growing confidence, affection, and curiosity.</i></p> <p><i>One memorable example occurred during the introductory activity of the first intergenerational activity, when participants were asked who had ever planted a tree. An older man volunteered to explain the process in detail, sharing his experience and practical knowledge with the children.</i></p>

	<p>Similarly, while playing the game, children often helped older adults navigate the computer—placing their hands over theirs to show how to move the mouse— or reading instructions aloud, while older adults supported children by explaining unfamiliar objects.</p> <p>These interactions revealed the true essence of intergenerational learning: common goal, cooperation, and knowledge exchange, where both generations became teachers and learners.</p>
<p>Participant Experience & Testimonial</p>	<p>The intergenerational sessions generated positive reactions from both children and older adults, who frequently highlighted the joy of collaborating, learning from one another, and having the opportunity to spend time together.</p> <p>Children described the experience as fun and different from their usual activities. Many emphasised how much they enjoyed playing the game with the older participants, how they helped them navigate the game, and how they learned new things. Older adults reported that being with the children was the most rewarding part of the pilot. Although some initially felt intimidated by the digital component, the support and encouragement from the younger participants helped them gain confidence and feel more engaged.</p> <ul style="list-style-type: none"> • Child: “I enjoyed playing the game because it was different and we weren't the only ones playing.” • Child: “I didn't know my grandmother was so clever.” • Older adult: “It was wonderful. I think this type of initiative should continue, and we should have more opportunities to do this kind of activity.” <p>These reflections demonstrate how the pilot fostered meaningful intergenerational exchange, strengthened relationships, and encouraged mutual learning far beyond the gameplay itself.</p>
<p>Observations from Facilitators / Educators</p>	<p>Throughout the four intergenerational sessions, facilitators observed a progression in cooperation, confidence, and mutual comfort among participants. At the beginning, children were visibly eager to play the game, while older adults displayed some hesitation regarding the digital component. However, once paired together, both generations quickly developed a natural rhythm of collaboration. Children frequently supported older adults by guiding their hands on the mouse, reading instructions aloud, or explaining steps within the game. In return, older adults shared practical knowledge, stories, and contextual explanations—particularly when environmental themes connected to their life experiences.</p> <p>Facilitators noticed that participants engaged in spontaneous conversations and showed growing interest in one another’s perspectives. Interaction became more fluid with each session, demonstrating genuine intergenerational engagement.</p> <p>A key success was the organic exchange of knowledge—each participant became both a learner and a teacher. Challenges included a few moments of frustration with the game’s mechanics or reading difficulties,</p>

	<p><i>but these were consistently overcome with peer support. Overall, facilitators observed increased awareness of environmental issues, strengthened intergenerational understanding, and a positive, inclusive learning environment.</i></p>
<p>Lessons Learned / Key Takeaways</p>	<ul style="list-style-type: none"> • <i>The pilot demonstrated that intergenerational activities thrive when participants share a common goal and when the environment encourages cooperation. One of the key lessons learned was that meaningful interaction emerges naturally when tasks require teamwork: children supported older adults in navigating the digital elements, while older adults enriched the experience with practical knowledge and life stories. This reciprocal exchange strengthened confidence and connection across generations.</i> • <i>For future implementations, improving the clarity and usability of some game elements—such as item visibility or navigation—could help reduce frustration and keep participants more focused on collaboration. Nevertheless, we still think the game is a tool, not an end in itself, and that future interventions should view it as such. It's a valuable and engaging tool that facilitators can use to create intergenerational activities that address environmental issues.</i> • <i>For facilitators, preparing each group individually before the intergenerational sessions proved essential to creating a comfortable and respectful environment. Facilitators should remain attentive to individual needs, encourage balanced participation, and allow time for informal interaction, as these moments often generate the most meaningful intergenerational exchanges.</i>



Figure 8. Program implementation in Portugal

Recommendations

RECOMMENDATIONS/ TIPS	
Facilitate with flexibility and empathy	Be attentive to the varying abilities, proficiency, and learning styles of both children and older adults. Support participants with patience, offer assistance when needed, and adjust the pace or format of the activity to ensure everyone feels included and comfortable.
Promote equal participation	Encourage one-to-one interactions and ensure that each participant has sufficient time to speak, play, and contribute. Be mindful not to let one person dominate the interaction.
Use clear and simple instructions	Use language that is easy to understand for children and inclusive for older adults. Check for understanding before each mission.
Encourage reflection and sharing	Leverage the built-in closing activity at the end of each session to help participants express what they discovered, enjoyed, or were surprised by during the game. Encourage brief sharing between intergenerational pairs or within the group to strengthen connections and highlight key environmental messages in a natural and engaging way.
Prepare for technical issues	Test the digital game on the available devices in advance. Ensure that devices are charged and that internet access (if needed) is stable. Have a backup plan (e.g., screenshots or printed material) in case of tech failure.



Figure 9. Participants playing the game

ELEMENT	2nd Case Study France - AFEJI
Introduction	<ul style="list-style-type: none"> ✓ <i>Interaction between participants</i> ✓ <i>Relationship developed over the course of the pilot</i> ✓ <i>Facilitators perspective</i>
Description of the Case / Context	<p><i>The second pilot in France took place in Dunkerque within an establishment working with young people facing school disengagement. The professional contact point in this structure had previously completed the facilitator training and coordinated the session locally.</i></p> <p><i>To create an authentic intergenerational experience, the young participants were encouraged to invite family members or older relatives, and the organisation also invited staff members nearing retirement age to join. In total, 4 young participants and 10 older adults took part in the pilot.</i></p> <p><i>The facilitator introduced the session by explaining the purpose of the Gagen project. Then, pairs (or small trios) were formed and guided through the basics of gameplay. To enhance engagement, the facilitators proposed a friendly competition: the pair earning the most stars at the end of the session would receive a small symbolic prize. This simple addition immediately strengthened the group’s energy and cooperation; both generations became more focused and interactive.</i></p> <p><i>For about two hours, participants explored the game. Laughter and small rivalries animated the room, creating an atmosphere of shared enjoyment and curiosity. Two facilitators circulated to provide support and ensure balanced collaboration.</i></p> <p><i>The session ended with a collective debrief, where participants reflected on what they had learned about climate change and how intergenerational collaboration helped them achieve success in the game.</i></p>
Participant Experience & Testimonial	<p><i>Older adult: “ I am so impressed by how fast the children are with the computer, and overall, it was fun to play together as a team”</i></p> <p><i>Child: “ I liked that there were two of us because some of the questions of the quiz were really hard!”</i></p>
Observations from Facilitators / Educators	<p><i>The friendly competition proved to be a powerful motivator. It encouraged teamwork, communication, and mutual learning. Participants displayed strong engagement, often celebrating small successes. The intergenerational mix created opportunities for both knowledge sharing and humour, with younger participants supporting older ones in navigation, while older adults contributed more on environmental topics.</i></p>

	<i>Facilitators observed that the game's structure fostered natural cooperation: young participants took on a "technical" role, while older adults shared more theoretical knowledge. The atmosphere remained positive throughout from both sides.</i>
Lessons Learned / Key Takeaways	<ul style="list-style-type: none"> • <i>Light competition can effectively enhance intergenerational cooperation and motivation.</i> • <i>The facilitator's role was crucial in balancing playfulness and learning.</i>

Summary of the case study:

In Dunkerque, a social organisation working with young people at risk of school disengagement implemented the second pilot of the Gagen game. Four young participants and ten older adults, including retired staff and relatives, took part. The facilitator introduced the activity and proposed a light-hearted competition: the pair earning the most stars would win a small symbolic prize.

This small detail transformed the dynamic. The groups immediately became more animated, and laughter, strategy discussions, and mutual encouragement filled the room. The young players guided their older partners through the game's mechanics, while older adults contributed reflection and life experience when facing environmental challenges in the storyline.

By the end of the session, one could observe a true intergenerational teamwork: the "race" for stars had created a connection, not rivalry. The prize was, in the end a candy box that was shared among all participants

Reflection Exercise:

- How can facilitators ensure that competition stays positive and inclusive for all learning paces?
- Which types of rewards or recognition systems best support collective rather than individual achievement?



Figure 10. Program implementation in France

SAFETY CONSIDERATIONS	
Emergency preparedness	<i>Ensure facilitators know the location of emergency exits and fire extinguishers. Have a list of emergency contact numbers (e.g., local emergency services, venue coordinator) easily accessible.</i>
Health and first aid	<i>A first-aid kit should be available on site at all times. Identify a person responsible for basic first-aid if needed. For sessions involving movement, ensure the physical space is free of obstacles or tripping hazards.</i>
Accessibility	<i>Ensure the space is accessible for participants with mobility aids (ramps, chairs with support, etc.). Provide adequate options for seated participation.</i>
Consent and safeguarding	<i>Collect informed consent from adults and parental consent for minors. Be aware of safeguarding responsibilities, particularly when working with vulnerable participants. Maintain professional boundaries and confidentiality.</i>

Activities bank

Name	Description
<p>"Eco-Charades" – Act It Out</p>	<p>Theme: <i>General Icebreaker across all themes</i> (Especially good for Day 1)</p> <p>Goal: Create laughter and interaction while introducing sustainability actions and concepts.</p> <p>How it works:</p> <ul style="list-style-type: none"> • Prepare cards with eco-friendly actions or themes (e.g., "planting a tree," "turning off the tap," "recycling," "walking in a flood," "repairing a toy," "picking up litter"). • Each team takes turns acting out one card while others guess. • Prompt a quick question after each: <i>"Why is this action helpful?"</i> <p>Materials: Action cards</p>
<p>"What Would You Do?" – Scenario Sorting Game</p>	<p>Theme: <i>Sustainable Development & Mitigation – Changing behaviour for the common good</i></p> <p>Goal: Help participants reflect on everyday actions that help or harm the environment.</p> <p>How it works:</p> <ul style="list-style-type: none"> • Prepare a set of cards with short scenarios (e.g., "riding a bike to school," "buying bottled water," "reusing a bag," "leaving lights on"). • In intergenerational pairs or small groups, ask participants to sort the cards into two piles: "Good for the planet" and "Not so good." • Encourage brief sharing: <i>"Have you ever done this? How do you feel about it?"</i> <p>Materials: Scenario cards (with simple text and visuals)</p> <p>Adaptation: create a line (spectrum) from "Good for the planet" and "Not so good" and instead of presenting card with the scenarios read</p>

	<p>them out loud and ask participant to position themselves on the spectrum.</p>
<p>"Then and Now" – Memory Match & Talk</p>	<p>Theme: <i>Adaptation – Learning to deal with local changes</i></p> <p>Goal: Discover how environments and habits have changed over time and why adaptation matters.</p> <p>How it works:</p> <ul style="list-style-type: none"> • Show pairs of images or objects from the past vs. now (e.g., shopping at a street market vs. supermarket, reusing containers vs. single-use packaging, rivers then vs. now). • In small mixed-age groups, ask: <i>“What’s different? Why do you think it changed?”</i> • Prompt with: <i>“How have we adapted to changes in our neighbourhood or weather?”</i> <p>Materials: Printed photo pairs or drawings (past/present)</p> <p>Adaptation: ask the questions out loud for the group to discuss.</p>
<p>"The Life of a Banana" – Circular Thinking Puzzle</p>	<p>Theme: <i>Circular Economy</i></p> <p>Goal: Introduce circular economy by tracking an object’s journey and exploring ways to reduce waste.</p> <p>How it works:</p> <ul style="list-style-type: none"> • Give each group a simple object (e.g., banana, plastic bottle, T-shirt). • Together, they draw or discuss its <i>life cycle</i>: Where does it come from? What happens after we use it? Can we reuse, compost, or recycle it? • Ask: <i>“What could we do differently to waste less?”</i> <p>Materials: Object pictures or props, paper and crayons</p> <p>Adaptation: do it together with the all group to manage time and make sure it only take 10 minutes.</p>
<p>“Green Promises” – Draw & Share</p>	<p>Theme: <i>Individual Action</i></p> <p>Goal: Inspire participants to think about personal actions that help the environment and build a shared sense of responsibility.</p> <p>How it works:</p>

<p>a Change You Can Make</p>	<ul style="list-style-type: none"> • Provide small cards or paper and markers. • Ask each person to draw or write one small action they can take to help the environment (e.g., “bring a reusable water bottle,” “eat less meat,” “recycle paper,” “plant flowers for bees”). • Pair older adults with children to share their promise and explain why they chose it. • Optionally, create a “Green Wall” to display all promises during the activity. <p>Materials: Markers, small cards or papers, tape or wall space</p>
<p>"Breakfast – the most important meal" – consuming matter</p>	<p>Theme: <i>Local products instead of imported</i></p> <p>Goal: Realize which products can be exchange by local ones to and exploring ways to support local farmers and eat healthy meals.</p> <p>How it works:</p> <ul style="list-style-type: none"> • Each group preparing menu for breakfast and check which products are imported and which are locals • Together, they consider where products of the breakfast come from and try to find the country on a map • After that they discuss about local and seasonal products for breakfast and advantages of choosing this products planet and for local farmers. • Ask: “<i>What will you eat for breakfast tomorrow?</i>” <p>Materials: Object pictures or props, paper and crayons</p> <p>Adaptation: do it together with the all group to manage time and make sure it only take 10 minutes.</p>

ELEMENT	Case Study Turkey – K-GEM
Introduction	<ul style="list-style-type: none"> ✓ <i>Intergenerational activity in general</i> ✓ <i>Interaction between participants</i> ✓ <i>Relationship developed over the course of the pilot</i>
Description of the Case / Context	<p>Gagen intergenerational sessions were held at Ankara Bilim University in Turkey has 50 participants in total. During these sessions, children and older adults played the Gagen game together in five sections. Older adults and children thoroughly enjoyed playing the game together. The older adults shared their experiences with the children on sustainability and climate change. In the indoor section, participants learned about energy efficiency, creating sustainable cleaning products, preventing food waste through zero-waste practices, saving water, and creating healthy meals. In the garage, they learned about recycling and repairing items that could contribute to a circular economy, developing sustainable hobbies, and establishing a composting system.</p> <p>During the intergenerational sessions, participants learned about the need to combat climate change and, through engaging activities, the actions they can take to ensure a liveable world for future generations.</p>
Participant Experience & Testimonial	<p>Children:</p> <ul style="list-style-type: none"> ▪ D.S. "It was great playing the game with Aunt Naciye. We progressed through the levels together. I think we made a good pair." ▪ S.A.T. "I liked the sections inside the house the most. I played with Uncle Levent. I learned some good things. I'll try it at home." ▪ Ö.Ö. "I played with Afet. I liked the pond section in the park. I'll clean up the trash in the park to save the birds." ▪ D.Y. "I thought it was very nice. I helped Aunt Güler with the parts of the game that needed to be unlocked." ▪ M.S.G. "Uncle Armağan is a very good person, so I enjoyed playing with him." ▪ U.Y. "Aunt Serap is a good person, but she didn't know how to use computers. I helped her with the game." <p>Adults:</p> <ul style="list-style-type: none"> ▪ S.A. "It was so much fun. We learned along with the children, and I can't wait to try out what we learned from this game."

	<ul style="list-style-type: none"> ▪ T.Ç. "The children were very eager to learn, and we shared our experiences. I hope it will be beneficial to them, and they will apply what they learned in this game." ▪ P.Ç. "I think it was both educational and enjoyable. Climate change is a very important problem. Playing a game like this with children about this topic also informed us. We realised many things." ▪ H.Ü. "Of course, playing this game with children. I didn't think the new generation was so knowledgeable. After this game, I think we can entrust our future to them." ▪ B.B. "We shared what we knew about climate change with the children, and the children helped us with technology. It was an interesting and beautiful experience."
<p>Observations from Facilitators / Educators</p>	<p>Did you observe changes in awareness, curiosity, or interaction over time? Participants began attending learning sessions held before the intergenerational sessions, but they had more fun with the children, and their awareness increased during those sessions. Learning through fun was particularly effective for children. With increased interaction, adults also became more immersed in the game, creating an incredible synergy. Young people demonstrated their technology skills, and adults demonstrated their skills in climate change and problem-solving together in the game.</p> <p>What challenges or successes stood out? Although the older participants were a bit nervous before the intergenerational sessions, once the children opened the game and saw their progress, they felt more comfortable helping them. This facilitated a smoother transfer of knowledge and allowed them to share more of their understanding of climate change with the children. For example, while playing alongside a child participant, an elder participant discussed NASA's climate change studies and the applications of TÜBİTAK (Turkey's higher education science organisation), as well as the fossil fuel information in the game. This led to the sharing of information beyond the game's scope.</p>
<p>Lessons Learned / Key Takeaways</p>	<ul style="list-style-type: none"> • <i>Working together across generations created a powerful synergy. Participants thoroughly enjoyed participating in the game sessions. Overcoming challenges together brought them closer and, despite the possible differences between generations, fostered common ground.</i> • <i>Although there were significant differences between children and older participants, many held prejudices; we overcame these prejudices through intergenerational sessions, and the initial learning sessions helped slowly deconstruct stereotypes.</i>

Therefore, the knowledge gained from this project can be shared in future intergenerational projects.

- *As facilitators, we struggled to bring together older and younger participants, but they had a lot of fun. Facilitators who will be conducting similar projects should provide training for facilitators (as we did in the GaGen initiative), as well as for older participants on technology, helping them feel more comfortable.*



Figure 11. Program implementation in Turkey

Future Replication Advice

The Handbook provides structural guidelines for implementing an intergenerational learning programme in environmental education using the GaGEN game. The prototype was tested in pilot programmes in 5 European countries: Germany, France, Poland, Portugal, and Turkey (as illustrated throughout the Handbook with the case studies).

The GaGEN pilot implementations across partner countries demonstrated that intergenerational digital learning activities can be successfully replicated in diverse contexts when supported by thoughtful preparation, clear communication, and structured facilitation. Based on the WP5 national pilot reports and the findings from previous work packages, several recommendations should guide future replication.



Investing in the facilitators' training program is essential; facilitators must be familiar not only with the game mechanics (as developed in WP3) but also with intergenerational learning principles (outlined in WP2). WP4 and national reports consistently highlight that the facilitators' training was relevant, that participants particularly valued the opportunity to test the GaGEN game before delivering it in intergenerational sections, and that the training content was useful in their daily professional contexts.

Ensuring separate learning sessions for younger and older participants helped build confidence, deconstruct stereotypes, and reduce initial apprehension about engaging with different groups. These sessions set the emotional and cognitive foundations for meaningful interaction during the intergenerational activities.



Replication efforts work best when **partnerships with local organisations** (schools, day centres, community groups) are established early. National reports underline that strong collaboration with local stakeholders ensures smoother recruitment, better scheduling, and improved retention across sessions.

Facilitators should plan for **flexibility in technology and space requirements**. Program pilot reports note common challenges related to equipment availability and internet access — issues that can be mitigated with backup devices, smaller groups, or offline access.



Before carrying out the activities, facilitators should be mindful of the **differences in knowledge and technological skills** among participants. The goal is for people to cooperate and learn from each other, not to reinforce possible stereotypes about any generation. If necessary, the game and its structure can be presented to the groups in advance.

Future implementations should incorporate **activities beyond gameplay**, such as structured reflections, environmental action tasks, or creative outputs. Across countries, the strongest outcomes emerged when the game served as a catalyst for conversation, shared learning, and real-world behaviour change.

Conclusion

The GaGEN Handbook brings together the conceptual foundations, pedagogical methodology, practical implementation steps, and real-life experiences that shaped the development of an intergenerational learning approach to environmental education. Across the different sections—from recruitment and session organisation to case studies and replication advice—the project demonstrates that serious games can serve as an effective bridge between generations, supporting meaningful interaction, mutual learning, and increased environmental awareness.

The national pilots presented in this handbook show that older adults benefit from structured intergenerational engagement with children, especially when supported by adequately prepared facilitators and clear programme design. The case studies highlight diverse implementation contexts, yet consistent outcomes emerge strengthened intergenerational bonds, increased understanding of climate-related issues, and enhanced motivation to adopt more sustainable behaviours.

The GaGEN initiative also contributes to European adult education by offering a replicable model grounded in evidence from earlier work packages, enriched by field observations and participant feedback. The recommendations included here support future facilitators, educators, and organisations wishing to implement similar programmes, ensuring that intergenerational learning remains intentional, inclusive, and impactful.

Ultimately, this handbook serves as a practical and accessible resource for those who seek to integrate environmental education, digital tools, and intergenerational practice. By combining theoretical insights with hands-on guidance, GaGEN supports communities and educators in fostering dialogue, cooperation, and shared responsibility across generations— an essential step toward collectively addressing climate change and showing how both generations can have an active role while learning from/with each other.

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