



GREEN GENERATIONS

Erasmus+ Project n°2022-1-FR01-KA220-SCH-000085830

STUDY ON INTERGENERATIONAL CLIMATE CHANGE EDUCATION

January 2024



Co-funded by
the European Union

The Green Generations project is developed by a consortium of six partners, specialists in the fields of formal and non-formal education, social innovation, and research, in five European countries (France, Greece, Cyprus, Romania and Bulgaria).

The Green Generations project's objective is to support European teachers and educators of children from 8 to 18 years old, by developing an innovative pedagogical curriculum and guidelines for climate change education through intergenerational learning.

This document is the consolidation of the research on intergenerational climate change education that went on between December 2022 and November 2023. The research was developed through desk research, focus groups and a questionnaire survey in the partners' countries and includes feedback from European teachers participating in the teachers' training seminar at the Paris Climate Academy in November 2023. This research leads to the development of the teachers' training package on intergenerational climate change and the related curriculum and guidelines (2024-2025).

It addresses the general context of climate change education, intergenerational learning, as well as the project's target group profiles and the current practices and needs of teachers and educators in these fields.

SUMMARY

1. Climate change education: general context, ESD and planetary boundaries
2. Definition and principles of intergenerational learning / Effects and impact of intergenerational learning on participants / Intergenerational climate change education
3. Green Generations' target groups - Profiles
4. Practices and needs in intergenerational climate change education
5. Sources and references
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CLIMATE CHANGE EDUCATION

We are currently facing one of humanity's biggest challenges threatening earth's habitability in relation to planetary boundaries: the **sixth mass extinction**. This context is due to the **anthropocene** which is the period of time during which human activities have impacted the environment enough to constitute a distinct geological change.

The term **climate change** is frequently used to describe these threats.

One reason is that climate change is a simple concept. It can be easily understood since it can be measured (carbon footprint). But up to now, climate change has played no role in the sixth mass extinction.

The planetary boundaries concept presents a set of nine planetary boundaries within which humanity can continue to develop and thrive for generations to come, setting the framework of earth's habitability. These boundaries are:

- Climate change
- Change in biosphere integrity (biodiversity loss and species extinction)
- Stratospheric ozone depletion
- Ocean acidification
- Biogeochemical flows (phosphorus and nitrogen cycles)
- Land-system change (for example deforestation)
- Freshwater use
- Atmospheric aerosol loading (microscopic particles in the atmosphere that affect climate and living organisms)
- Introduction of novel entities

In 2009, three measurable boundaries were crossed. In 2023, for the first time, a team of international scientists was able to quantify all the boundaries and concluded that six of nine planetary boundaries were transgressed.

In this study, the mention of climate change education refers to a more global and interconnected approach to ESD (Education for sustainable development).

Education for sustainable development ([ESD](#)) gives learners of all ages the knowledge, skills, values and agency to address interconnected global challenges including climate change, loss of biodiversity, unsustainable use of resources, and inequality. It empowers learners of all ages to make informed decisions and take individual and collective action to change society and care for the planet. ESD is a lifelong learning process and an integral part of quality education. It enhances the cognitive, socio-emotional and behavioural dimensions of learning and encompasses learning content and outcomes, pedagogy and the learning environment itself.

In the 2022 Climate Survey of the European Investment Bank, conclusions show that in all countries participating to the survey, climate change is seen as the **biggest challenge for humanity in the 21st century**.

A majority of European citizens have little faith in the ability of their governments to address climate change issues. However, when asked who is doing the most today, after the answer "each of us" (44%), **local actors** come out on top: associations (31%), local authorities (28%) and then states (26%). Although the answer "nobody" reaches 21%.

The Unesco survey on Climate change education states that there is a **discrepancy between the importance given to climate change in governmental plans and strategies (that include education content)** and the fact that **only 40% of national education laws and 45% of education sector plans or strategies explicitly refer to climate change education**. Moreover, just over a third of countries have a law, strategy, or plan specifically on climate change education.

Currently, the countries **most likely to include climate change content in their curricula are those in regions most vulnerable to the impacts** of climate change, **as opposed to those largely responsible** for the emissions causing climate change.

Greater focus on **climate change content is needed in the curricula of countries most responsible for climate change.** Climate change education should be integrated into pre-service and in-service **teacher training in all subjects** and at all levels of education.

Studies show that **primary and secondary school students submitted to an educational or awareness program** in their school have potential/influence to drive change around them (either in class or at home). Those children **can foster climate concern among their families. Among the key factors are:**

- relationship and trust
- the fact that children are perceived as apolitical (no political bias)
- girls seem to have more influence than boys
- questions and discussions on local scale (instead of global)
- sensitization of parents participating / visiting their children's experiences.

On the other hand, in his analysis, Colin Bangsey explains that while faith in the role of education is strong, the evidence on how education will effect change is generally weak. **Measuring by assessments has the strongest influence** on what happens in the classroom. To move from passive 'learning' to 'doing,' we need an associated **shift in assessment systems** from a focus on 'factual recall' and towards 'problem solving'.

Climate change education - Opportunities and challenges

OPPORTUNITIES

- Gen Z and Alpha are engaged in the topic of climate change.
- Children are more likely to drive change in their families
- Climate change education is briefly introduced in schools but never updated or taught in an interactive manner.

Opportunities for the development of a new curriculum:

- Although students have access to constant information, studies show that their knowledge is not satisfactorily sufficient to address the topic because of moderate understanding of climate change and its impact in the future.
- Teachers willing to teach this topic are not sufficiently equipped. Lack of material, practice and training.

CHALLENGES

- Seniors see schools as the major educational actor in the field of climate change education. They are supportive but do not engage easily in community development and civic activities.
- The role that young people seek to play in climate action is often downplayed, dismissed or marginalized.
- only 30%+ countries have a law, strategy or plan on climate change education
- In a survey of 100 countries, almost half of national curriculums have no reference to climate change. A further 40 % included only a very minimal level of content.

2 INTERGENERATIONAL LEARNING



Intergenerational learning promotes learning between and across generations, and puts the concept of lifelong learning into practice. They allow the bidirectional **transmission of knowledge, know-how, soft skills, attitudes and habits.** Intergenerational learning projects must be **rooted in social and pedagogical needs.** Making intergenerational learning **part of the teaching process** allows to work on **several areas of knowledge and skills.**

Based on **non-formal and informal education**, intergenerational learning enables people of all ages to learn together and from each other. The **generations work together to gain skills, values, and knowledge.** It helps to **develop social capital and social cohesion as well as intergenerational solidarity** in our ageing societies.

Intergenerational learning mitigates the consequences of the **generational gap caused by rapid technological progress** and different lifestyle that lead to a lack of understanding, the creation of stereotypes and prejudices, and the reduction of positive interaction between older and younger generations.

In most European countries though, **intergenerational learning is not part of the school curriculum** and in general, is not a typical practice in the educational process. In addition, both young and adults are not familiarised with intergenerational learning.

Criteria for **successful learning environments in multigenerational learning**

- Mixed learning and innovative pedagogical content, keeping in mind that the biggest mistake is to think older people want old-fashioned learning and young people want gamification
- Promotion of values such as understanding, acceptance and respect, and value individual contribution
- Participatory: participants should be fully involved in shaping the activity and feel a sense of ownership
- Open communication
- Project-based assignments
- Cross-disciplinary or Interdisciplinary
- Technology is used to create interest and enhance content
- Development of partnerships between schools and local communities
- Culturally grounded: needs, context and attitudes of cultures differ widely. An approach adopted in one area may not work or be relevant in another due to these differences.

Intergenerational learning - Opportunities and challenges

OPPORTUNITIES

- Intergenerational learning provides life skills to younger generations such as developing closer emotional attachment to nature, communities and families
- Intergenerational learning provides lifelong learning to all generations who gain skills, values and knowledge. It helps to develop social capital and social cohesion.
- It creates stronger relationships among generations and families
- Teachers participating in our surveys demonstrate their will to open the school to civil society, creating a link between the students' experiences at school and their communities.

CHALLENGES

- The lack of training in intergenerational practices and the fact that intergenerational learning is not part of the formal curriculum in most countries
- Generation gap: pedagogical approaches are totally different (traditional and vertical vs reverse, peer...)
- Generation references that other generations no longer understand
- Ageism is considered as a phenomenon of systemic discrimination towards seniors and youth.
- Formal and informal spaces are needed to enable youth political participation and access to information on climate change policies.
- The teachers' focus groups analysis shows that although parents and communities have been involved in some school projects, intergenerational learning is not a familiar concept or systematic mechanism. Its implementation seems complicated to them.

Intergenerational learning benefits

- collective wellbeing
- culture of community, togetherness and cooperation
- civic and ethical responsibility, social life skills
- soft skills: responsibility, generosity, solidarity, tolerance, respect and mutual aid
- autonomy and initiative
- construction of identity
- understand and materialise the notion of (life)time / ability to consider the future
- communication (explain a personal experience, develop an idea) and information literacy
- fighting incivility, school dropouts and violence at school
- students discover and take part in their environment
- Etc.


Intergenerational learning has social impacts such as breaking the link between disadvantaged home backgrounds and poor educational outcomes through collaboration between schools and families/communities. It promotes active citizenship and challenges ageism (both young and old are victims of ageism). Meeting each other means that people can explore who they really are and what they have to gain from each other

In the framework of our research, in order to provide case studies for the teachers' seminar, we were able to identify numerous intergenerational projects setting a collaborative framework and partnerships with teachers, families, non profits, other organisations... These pedagogical projects were mostly developed around social needs and interactions.

Climate change, in the sense of our primary definition (page 5), is a vast concept of interrelated topics. Social and environmental issues are interdependent. All human activities can provide a foundation for education for sustainable development and climate change education.

Our intergenerational climate change research on existing projects has led us to a few intergenerational projects on food and gardening. To our current knowledge, few intergenerational projects exist in climate change education in proportion with the social projects that are not necessarily linked with climate change education.

Moreover, in order to provide inspiring topics as foundations for these projects, we need to offer innovative approaches to the educators through our Green Generations curriculum.



**INTERGENERATIONAL
LEARNING**

GREEN GENERATIONS TARGET GROUPS
Behavioural profiles

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3. GREEN GENERATIONS TARGET GROUPS

The Green Generations project targets teachers and educators of children from 8 to 18 years old. We are therefore targeting Z and Alpha generations and their teachers, families and communities. Here are a few key points on pedagogical aspects regarding Gen Z and Alpha.

| Gen Z | Gen Alpha |
|--|---|
| <p>Develop their relationships through social media apps. 45% are constantly online. Gen Z is marked by an uptick in anxiety and depression and has a stronger likelihood of reporting mental health concerns. They have the highest environmental awareness.</p> | <p>The most numerous in the world. Beginning of a new era in the development of humanity. The most educated generation. Organically connected to technology. They contribute the least to climate change issues but they will be the most affected. It is crucial to recognize the values of each generation and work hand in hand.</p> |
| <p>Used to having information at their fingertips.</p> | <p>Students get bored and distracted very easily. They need strong stimuli and interactive classrooms are expected.</p> |
| <p>Providing Social-emotional learning (SEL) curriculum that focuses on developing self-awareness skills, teaching social awareness and empathy. Providing lessons that support critical thinking skills by teaching students how to sort through masses of information and determine what's valuable.</p> | <p>Incorporating new technology and learning to employ it using best practices. Physical classes are a challenge that can be addressed by providing blended or hybrid learning that combines in-person and remote attendance for greater flexibility. Flipped classroom modalities (Reverse pedagogy) work very well.</p> |
| <p>Using apps, web-based platforms, and other digital resources</p> | <p>Big focus on problem solving and a preference for the gamification of education and challenge-reward models</p> |

Parents and grandparents of Gen Z and Alpha are members of Gen X, Y and Boomers.

Age gaps are important on climate views and climate action. Younger generations were more willing than older generations to engage in climate activism, such as volunteering and donating money.

Although older generations are aware of the problem, and more of them want to be more engaged, **they believe that schools should take that role.**

Intergenerational learning comes with a greater challenge: the **conflict of generations.**

Not a simple difference between the behaviour, tastes and aspirations of children and parents. But rather what the anthropologist Margaret Mead (1901-1978) called a "generation gap", due to the difference between traditional societies and "prefigurative" societies, in the sense of **a reversal of the transmission of knowledge.**

Contemporary educational leadership means **teachers are actively seen as contributors.** They must also be exposed to and have a deeper **understanding of how to best address the changing values of the next generation.** Seeing transdisciplinary learning with social and emotional competencies as a core component, it is critical that teachers are able to reflect at how values for the next generation are addressed and supported within their contemporary teaching styles today.

It should be considered to use **edugaming strategies** to support Gen Z and Alpha students' competencies and build a sense of **discernment between what is fake and what is real.**

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PRACTICES AND NEEDS IN INTERGENERATIONAL CLIMATE CHANGE EDUCATION*



*Results from 150 questionnaires and teachers' focus groups in the five participating countries

In the overall education needs expressed by the participating teachers, **communication and cooperation between teachers is scarce**. The education system does not promote it. The **classical training of teachers offers little or no response to their needs and desires to anchor themselves in contemporary subjects**. In addition, the school programs leave little space to external and optional activities that need to be very well anticipated.

Although teachers are increasingly interested in creating bonds between schools and society, the school facilities are not generally open to external visitors and families. Since families and communities cannot access the schools easily, **teachers are key actors in creating that bond**.

The Green Generations survey shows that three out of four teachers have already led community projects in their class and that most received support from their hierarchy. When asked about intergenerational learning, **only 20% of teachers believe they know about it** although a vast majority of teachers are either unaware of the process or have never had the opportunity to do it.

When asked about their community projects and whether their learning objectives were reached, 48% of teachers who led community projects claim they were met but have not explicitly mentioned how. 33% claimed to have a limited or deceptive result. It would be interesting to know how they measured their results and in any case, the teachers need to be accompanied and trained on how to measure the impact of a project (**impact assessment indicators and evaluation**).

Among the teachers who did implement community projects, they involved NGOs, non-profits and policy makers as well as private organisations. Merchants and craftsmen are rarely involved (6%). Although, most teachers agree that finding and **engaging a target group willing to participate, creating a safe and comfortable environment for interaction between different generations, and planning activities to encourage active participation are difficult aspects of such projects.**

The **lack of training** in intergenerational practices (59%) and the fact that intergenerational learning is not part of the formal curriculum (38%) are the two biggest challenges to address. A third challenge would be the issue of funding or limited resources (34%).

Most teachers believe it very important to teach about the severity of climate change and its effects but **fewer than 40% are confident in teaching it** and only about **one-third feel able to explain well the effects** of climate change on their region or locality.

About **40% of teachers are confident in teaching the cognitive dimensions of climate change** but only about **one-fifth can explain well how to take action and induce behavioural change.**

In addition, 20% do not have the ability to choose their own subjects or the time to teach the topic, or **feel they don't have the necessary knowledge and skills.**

Experienced teachers are generally more confident in their ability to teach climate change compared to those newly entering the profession. Research show that only **55% of teachers reported that they had received training** – either pre-service or in-service – on climate change and sustainable lifestyles.

The observation of pedagogical practices (see chart page 19) show that traditional and participative pedagogies remain the general practice (81% of the Green Generations teachers' survey) followed closely by Cooperative methods (72%).

Education systems realize the need to use more **student-centered and innovative pedagogies**, in order to develop students abilities to be independent, to develop problem solving skills and critical thinking. But European teachers' practices vary a lot for different reasons.

For instance, **reverse pedagogy**, which works quite well with Gen Z and especially Alpha, seems to be the least often used (55% of average total) although it is part of the top 3 in Bulgarian teaching practices and is quite used in Romania but the participating teachers in Greece and France use it the least.

When asked what pedagogies teachers would be interested in using, **reverse, peer-to-peer and discovery pedagogies rank out on top.**

When asked about **pedagogies they would not want to use**, French teachers show the highest ranking on reverse pedagogy (40%) whereas Greek teachers show the highest ranking on traditional pedagogies (34%).

Project-based learning and discovery pedagogies are well ranked among all countries except in Greece. This answer might be attributed to the curricula-centered character of the Greek educational system, in which the teachers transfer knowledge as leading experts and do not have much time to experience other pedagogies.

4. PRACTICES AND NEEDS IN THE FIELD OF INTERGENERATIONAL CLIMATE CHANGE EDUCATION

Extract from the Green Generations survey

| Current knowledge and pedagogical practice used by teachers | France | Romania | Greece | Cyprus | Bulgaria | Average total |
|---|--------|---------|--------|--------|----------|---------------|
| Traditional pedagogy | 94% | 96,6% | 26,6% | 92% | 97% | 81% |
| Participatory pedagogy | 97% | 90% | 23,3% | 96% | 100% | 81% |
| Reverse pedagogy | 39% | 60% | 36,6% | 50% | 87% | 55% |
| Project based learning | 77% | 93.3% | 26,6% | 54% | 73% | 65% |
| Discovery pedagogy | 64% | 100% | 13,3% | 61% | 50% | 58% |
| Cooperative pedagogy | 90% | 93.3% | 13,3% | 82% | 80% | 72% |
| Peer-to-peer pedagogy | 58% | 73% | 40% | 68% | 63% | 60% |
| Experiential learning | 77% | 83.3% | 26,6% | 89% | 47% | 65% |

When asked to rate the **importance of social and environmental stakes**, teachers believe the most important skills to teach are (in ranking order from an average total):

- Climate change and environment issues / Health (70% each)
- Gender issues harassment and other issues related to children's daily lives (67%)
- Future career and professional orientations (64%)

There are relatively important **differences between countries**.

- Teachers in Bulgaria view future career (97%) and health (87%) over climate change (80%).
- Although climate change is considered important, the topic of gender issues tops climate change in Romania (70% vs 65% - It can be explained by the current social debate about whether to address the topic of gender issues at school) and Cyprus (64% vs 46%).
- Cypriot teachers rank climate change on the same level as artistic and cultural education (46%).
- Greece and France see climate change as the most important topic to address.

Depending on the country, **social stakes may rank above climate change issues**. Some social issues are not connected to climate change but **climate change has social impacts** that need to be highlighted.

In terms of pedagogies used to teach green skills, again, countries have different cultural approaches. The average total sets the top 4 as follows:

- cooperative and experiential learning (80% each)
- participatory and discovery pedagogies (75% each)

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SOURCES, REFERENCES & METHODOLOGIES



Methodologies

- The [Green Generations Desk Research](#) was elaborated by all partners in their respective countries based on a methodology guide for research on climate change education and intergenerational learning practices in schools and educational systems, synthesized in a final report.
- The [Green Generations questionnaire survey](#) was elaborated by eutopique with the help of all partners and disseminated to 150 teachers in primary, secondary and high schools in private and public systems of each country. 75% of answers come from urban teachers and 75% of teachers are women. Based on the number of replies, the responses do not reflect the general views of national teachers, but constitute trends in each country.
- The [Green Generations focus groups](#) led in each country were based on guidelines produced by eutopique with the help of all partners. The focus groups gathered a total of 30+ teachers and reflect their opinions and views on climate change education and intergenerational learning in their respective experiences.

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CONTACTS





The Green Generations consortium invites you to follow the development of the project on our [website](#), our social media pages ([LinkedIn](#), [Facebook](#) and Instagram).



**Co-funded by
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