CircularCityChallenge

CREATING A NEXT-GENERATION PARTICIPATORY CONTEST FOR YOUNG PEOPLE TO INTEGRATE CIRCULARITY INTO SCHOOL CURRICULA

Deliverable D2.4

Expert Interviews Report I

This project is part of the ERA-NET Urban Transformation capacities which has received funding from the European Union's H2020 research and innovation programme under grant agreement No. 101003758.

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1. Introduction

The CircularCityChallenge develops a competition-based approach for teaching circularity with the aim to improve sustainable development education in future high school curricula. The project offers young people from various school types the opportunity to submit their innovative solutions on circularity in an international challenge, bridging the gap between visionary ideas of young people, and city decision-makers, industry, infrastructure and other local actors. In this vein, the project will be a connector between complex science, technology and hands-on actions.

In order to ensure a successful and inclusive Europe-wide contest for young people, the concept will be informed by knowledge and experiences from educational experts. Understanding opportunities, barriers and limitations from the perspectives of different stakeholders – schools, teachers, students and other experts in the field of sustainable education – is vital to ensure broad participation and valuable outcomes throughout the CircularCityChallenge.

In the course of the project, at least five expert interviews are conducted in each consortium country: Rumania, the Netherlands and Austria. These interviews provide important recommendations to enhance the challenge concept as well as future curricula. This report (D2.4) is a synthesis of the inputs derived from the first round of expert interviews and will be updated in M26 (D2.6) with further insights.

2. Method

The conducted interviews followed the two main aims of (1) understanding possible up and down sides of the CCC concept, barriers, and mitigation measures and (2) creating a novel CCC challenge concept and outline future curricula and. To shed light on these issues in various national contexts and school settings, as well as the perspectives and interests of different actors in the educational systems, the consortium partners agreed on a common strategy and framework for the interviews.

Firstly, criteria for the educational experts of interest were defined. Persons teaching, promoting or implementing contents of sustainability, and circularity in particular, were the main target group. Both experts involved on a national scale, as well as internationally active experts were included. As such, the following types of experts were addressed:

- Teachers from formal/informal primary/secondary education (particularly if experienced in sustainable education, extracurricular activities or working with minorities)
- Professors teaching circularity in higher education
- High school students
- Representatives of NGOs and initiatives that advocate for sustainability education
- Experts in implementing educational policies and/or curricula on the EU level
- School administrators
- City representatives, administrators or decision-makers in charge of education and/or environment
- Expert in working in similar contests

For this report, the first round of 12 interviews were conducted (see descriptions of the interviewed experts in Appendix A). Further experts will be interviewed in the course of the project (updated report in M26) to continuously improve the challenge and its impact.

Secondly, a pool of questions was jointly set up, as a common basis for the structured interviews. The questions were clustered into three sections: (1) General experience with teaching sustainability/circularity, (2) Comment on Preliminary Contest Concept, and (3) Educational Contests as a Teaching Method. The collection provides a broad range of questions, covering all relevant issues and was thus reduced for each interview to fit the focus and experience of each interviewed educational expert. The entire set of questions is listed in Appendix B.

Subsequently, the interviews were conducted, recorded, and summarised by each partner of the respective country and synthesized by the task leader SYNYO into this first version of the expert interviews report (Task 2.4). The following results, therefore, compile insights from all interviews. As such, it reflects different perspectives and settings. Where insights contradict each other, or when they draw on specific national or local contexts, it is indicated as such in the text. Rather than illustrating different national contexts, the experts' statements raise similar issues and point to variation within school systems as well as in experiences, possibilities, and limitations depending on the different roles the experts hold within the educational system.

3. Results

3.1 Key insights on teaching circularity

Required competences and skills

Which competences are required for teachers and students to better grasp the complex matter of circularity? Which teaching approaches have proven to be successful in this regard? In this section, the experts' responses on these questions will be summarised. The interviews revealed, that understanding circularity requires a wide range of skills and many fields of knowledge need to be integrated for this purpose. **The required competencies that apply to both teachers and young students are understanding that sustainable development is a broad field of complex interconnections.** Those connections go even beyond the topic of sustainable development, beyond economy, politics, environment and biology. It is the **complexity of connections between humans and the surrounding world, which needs to be conveyed more than ever.** Sustainable development can be perceived as an introduction to many important issues - global tendencies and challenges, globalisation, interdependency, digitalization, technological changes on labour market, demographic increase with pressures on social systems and diversity as cultural richness.

Interconnection and impact: On the one hand, students should be aware of the impacts they have on this planet, i.e., that someone has to "pay" for their lifestyle, as well as the lifestyle of their parents, such as food consumption, flying away for holidays two times a year or buying new sneakers every few months. A central part of understanding circularity is to know how everything that is "produced" goes in hand with resources use, which as of today, are not reused enough. In this sense, everything we throw away has an impact. Students can learn, that a circular economy, that does not produce waste, is not something absurd, instead its principles are clear common sense, and doable. Deeply connected to the understanding of impacts and interrelations, is the ability to reflect on the ethical implication of actions – to understand long term vs. short term gains (e.g. when cutting down trees for building purposes) and local versus global effects. In this regard, it is important to **find examples that young students can easily relate to.**

Transversal skills and competences: Focus needs to be put not just on knowledge acquisition, but also on the skills students need to have in order to find and deal with knowledge themselves. In this sense, they need to learn how to learn – by being equipped with instruments to comprehend complex problems. In Romania, officially **all learning should be based on competences**, however, in practice the evaluation is still focused on knowledge only – looking only at two subjects of the 8th grade (Romanian and maths).

In order to integrate competence learning into sustainability education, the eight "key competences for lifelong learning" from the European references framework could be consulted:

1. Literacy competence

2. Multilingual competence

3. Mathematical competence and competence in science, technology and engineering

4. Digital competence

5. Personal, social and learning to learn competence

6. Citizenship competence

7. Entrepreneurship competence,

8. Cultural awareness and expression competence

Media competence: This aspect was emphasised in particular, as being highly intertwined with sustainability comprehension. As one of the interviewees put it: "The young students are victims, as they are bombarded with messages from companies about needed consumption and lifestyle. There's no filter for them. Therefore – they need media expertise – to know how to handle the media messages about consumption, and they need to have more knowledge about new media and digitalization. There is a big gap between what kids learn at school and what they are learning on their smartphones and the world wide web. They don't have media competence and the skills of critical thinking about the sources of headlines. Less educated kids are easy victims of (fake) media information." Developing the ability to consume media in a reflected, critical way, is often missing in today's education. Understanding how to access and evaluate information from different sources from the internet, including scientific findings, can be seen as a vital part of grasping what is going on in the world.

Teachers' knowledge: The interviews pointed to the need to not only look at knowledge gaps in the education of students, but as importantly, in the education of teachers. It is by no means self-evident, that teachers have a basic understanding of definitions of "sustainability", "circular economy" and other key concepts. It was emphasised, that **teachers do not need to become experts in these fields, however, they need sufficient knowledge to build awareness and sensitise students, as well as preparing them for their professional future**. According to one of the interviewed experts from Austria, at least in schools on the countryside, teachers showing interest or awareness about sustainability are very rare. **Sensitising teachers and adapting their education - initial as well as ongoing trainings - is at least as important as adjusting the pupils' curriculum.** After all, even with circularity becoming part of the official curriculum, if teachers do not take these contents seriously themselves, they will not be able to teach them sufficiently and meaningfully. **In Romania, there are also training programs for teachers to learn new ideas.** Usually, teachers can get points for their career, but they have to pay for the trainings themselves. Overall, even with trainings, more needs to be done, to make sure that this knowledge is actually applied in teaching.

Teaching approaches and materials

- **Fun materials** for teaching the complexity of sustainable development in a simplified way e.g.in the format of comics (for example "Karl Marx for dummies", "Darm mit Scharm").
- **Tools and games** on the "Global footprint" to understand the implications of your own lifestyle.
- **Learning about product life circles.** How does the production process of what we consume everyday actually look like? How long does it take and which steps are required (e.g. meat production)? Ideally, pupils get to understand such processes by trying them out themselves.
- **Workshops and excursions with externals** are valuable for teachers and usually well received by students, by learning through experience and experimenting (e.g. visits to laboratories).

- **Games e.g. "Edu Gaming"** for learning transversal skills: Setting your own objectives and reflecting on your activity, finding ways of improvement in a playful manner.

Related risks

While the interviews revealed manifold shortcomings in existing school education and name ambitious demands for teachers and students to meet, it is important to stay empathetic for their situation. When **creating awareness about contemporary challenges, this should be achieved without causing more anxiety among young students**, since they are already facing numerous disturbing news and predictions about their future. In this sense, it is important to emphasise the motivational aspect of the positive impact they can have. Hence, the **competence to deal with anxiety and news of crisis** could also be seen as an essential part of sustainability education. Also, caution needs to be applied when linking global problems to specific individual behaviours that go in hand with resource overuse. This should neither encourage pointing fingers nor cause conflicts, e.g. within families. Another aspect addressed in the interviews is how responsibility is distributed among generations. While educating and including young people in the process of creating a circular economy is important, the responsibility and burden of action should not be shifted away from adults towards youngsters. In this regard, teachers should be enabled and encouraged to be role models themselves and take on their part in shaping the young students' future. Overall, a **balance between conveying the sincerity of existing problems but creating positive encouragement and impact at the same time, needs to be found.**

3.2 Key insights on the contest concept

Topic selection and thematic input

As to the question, how the contest should be thematically introduced and narrowed down, the interviewed experts arrived at fairly similar conclusions. Overall, the **key messages and principles of circularity should be introduced to the students.** Teachers should be able to explain these foundations and bigger issues related to it. **Detailed expert knowledge, however, is not seen as vital for preparing students for the competition.** The use of a specific theoretical framework is not perceived as necessary, **but if needed, the SDG framework was named as a potential framework for the topic selection**. Focus should not be put on a theoretical introduction, but on the **connection to tangible "real life" problems, to the students' daily life, to their own experience and their own local environment – the school, the municipality or local industry**. **The relation between the big picture and the students individual experience should be made visible,** by addressing questions such as: What is going on in the world? And what is your place in that world? And how can you make that world a little bit more beautiful, by the actions you actually choose to do? By raising awareness of the relevancy and urgency of the issues at hand, it can be highlighted why this challenge matters. Which specific topics matter for the competition should in the end, be defined by the students themselves. Overall, experts emphasised the importance of skills required to enter the competition, such as critical thinking, networking or multi-perspective thinking, rather than technical or scientifically detailed knowledge.

A possible approach mentioned by one of the experts, was the so called "principle adaptation approach": Following this framework, students require only a basic set of principles (regarding circularity). The important thing in this approach, is in providing young people with the **basic principles (in case of circularity is the principles of circular economy), without technical details, but examples (e.g. construction sector) of how and by whom this principles could be followed**. The method would then focus on training the students to think among such principles and to encourage students **to adapt them theoretically in their own field of interest. T**hey should be nudged to explore and challenge what is already out there, and find the right sources of information for their investigation.

Motivation and inclusion

The interviewed experts expressed both positive and critical thoughts on conducting circularity education through a competition. When it comes to enabling as many students as possible in this process, it was remarked that a competition in itself not the most inclusive format. Since the development of a project and the participation in a contest requires many skills and effort, it is more likely to appeal to students who are already performing well at school or who receive (e.g. parental) support. The design of the contest should therefore be attentive to not only target "high level performance" and "gifted" or "nerdy" kids, but diversify the ways to be part of it. It has to be taken into account that the possibilities of schools, teachers and pupils to participate will vary substantially. Abilities, routines and structures are different among school types and among young people. In order to achieve a competition as inclusive as possible, **connecting with institutions representing marginalised groups,** was repeatedly stated to be an important approach. Furthermore, the incorporation into the existing school curricula, helpful materials and possibilities of support (see sections below) are vital aspects.

Motivation for students: From previous experience with school competitions, it was noted that it is essential that there is a **visible outcome at the end**. In this vein, clear results should be provided and realistic expectations should be set in the beginning to avoid frustration. Ideally, the actual realisation of a large number of submitted projects should be aimed at, by supporting their realization as best as possible. The competition should not convey that it is about reporting, advertising or "pretending" action, but about **creating actual impact** – less about the competition itself, but about what is left after the competition. The competition orient itself on **project pitches, which aim at finding interested stakeholders who are willing to fund the further development and realisation of projects. Small scale projects could be aimed at, that are easily implementable.**

The practical application of knowledge as well as being able to choose the topic of relevance themselves can be important sources of intrinsic motivation to participate. In this vein, the strength of the competition approach is the possibility to support students to identify and realise their very own missions. Important motivational messages for young people are also that their opinion matters, their ideas are validated, that the competition is about their future and that they are all in this together.

Other mentioned incentives for student participation are:

- the positive impact for their future vocation
- the award ceremony, meaningful awards
- the connection to young people across Europe
- the connection to local stakeholders, the local community

- the fun of creating your own project
- the sense of collective action
- the pride in taking positive action, being a role model
- the feeling of having the power to change something

Also, **transparency and clarity of evaluation criteria and feedback for all submissions is key,** so that every participant can comprehend the results and is not left discouraged.

Motivation for teachers and schools: Teachers are key stakeholders for the success of the competition. In the making of the contest setup and materials, close collaboration with teachers is essential. Educators should therefore be approached in an early manner for the design process and they should be given a voice in **creating materials that fit their needs.** The biggest obstacle for teachers to implement the competition in their educating routine, is the lack of time and freedom due to multiple burdens and responsibilities that teachers are confronted with. Thus, it will be key to create as little extra effort as possible, e.g. in the form of reporting duties or bureaucratic tasks, which often go in hand with extra-curricular projects. Also, it was mentioned that the schools' interest in matters of sustainability decreased after the covid-pandemic, since educators are preoccupied with filling knowledge gaps in basic subjects, such as math and reading.

Possible incentives to encourage teacher/school participation in CCC are:

- Provide material incentives for teachers/schools: e.g. money for school, excursions, workshops, etc.
- Motivate the school as a whole: To take away the burden from individual teachers and help overcome barriers between subjects, management and teachers
- Giving support, external assistance during the application of the competition: Ideally, there would be **staff to personally assist teachers in implementing the challenge**. Anonymous websites with online content and without (phone/personal) contact persons are less appealing
- Provide possibilities for feedback and timely error correction if needed.
- Avoid language barriers: **Translate all contents to local language**, otherwise a lot of teachers and pupils will find it more difficult to participate

Age Group

On one important aspect the interviewed experts came to quite varying conclusions, namely the question which age group is the most suitable for circularity education, project-based learning and the competition. On the one hand, for the younger students from the integration school (that have e.g. learning difficulties), the concept of the circular economy is still too complex. While understanding global economic relations might be difficult for the younger students, when it comes to motivating them for the cause, **younger students might be more easily engaged**, since they are typically more attentive, motivated and interested in understanding what is going on in the world. Often, they are even more open to critically reflect on the way our world functions, than adults or teachers. The older pupils can be more knowledgeable already, but it can be difficult to spark interest about these topics, since they are often less motivated and can be very occupied with their personal life and what directly matters to them in short-term.

Overall, within the age group of 14-18-year olds, there will be differences in how receptive they are for the competition, how they can contribute, how much guidance they will need and how their submissions will look like. This needs to be taken into account for all stages of the competition design.

Also, **the possibility to have cross-class cooperation**, with older pupils leading and getting support from younger pupils, could be a very fruitful approach.

Project-based learning

Overall, more and more teachers seem to be aware of the project-based (inquiry) based methodology. However, still not every school format supports these methods and not every teacher and student is already familiar with them. The proposed competition format will inherently be easier to implement by schools/teachers/students already experienced with project-based work. Even though there are principles and materials presented during teacher training in e.g. Romania, in practice, these teaching methods are still not applied much. Due to difficult working conditions, teachers are often driven to the easiest ways of education. According to one of the interviewed expert, in reality, so- called projects often entail creating a powerpoint presentation and what is called teamwork is often taking place as individual work on a joint submission. Also in Austria, most of teaching nowadays is still described as **"frontal" teaching, based on the distribution of worksheets.** Also, workshop-formats are becoming more well known, but are still rarely practised. From these insights, it can be concluded that there is an increasing interest in these kinds of educational tools, the actual abilities to perform them, do, however, often do not exist sufficiently yet.

Cross-subject collaboration

As outlined in the first section of this report, the matter of sustainability is understood as a cross-disciplinary field. In this vein, the educational experts interviewed pointed to the possibility and necessity to incorporate circularity in different school subjects. This can also be applied to the CircularCityChallenge. In this regard, a **collaboration among teachers of different subjects would a valuable approa**ch. The actual feasibility will depend very much on the school structure and existing cooperation habits. Many schools do in fact formally not allow any cross-subject teacher collaboration.

Materials

Overall, a lot of material on sustainability education can already be found online. As mentioned above, it was mentioned to be critical, to **design materials in close coordination with teachers** to increase their suitability. Teaching materials should provide easy and clear instructions for teachers and students likewise, and result in as little extra effort for teachers to incorporate them in their daily teaching routine as possible. One interviewed expert mentioned the appeal of **tangible teaching materials, that offer possibilities to experiment and try out things by students themselves.** For the competition, **guidelines or checklists** could lead students through all the steps of finding an idea, finding mentorship, working in a group and developing and presenting a project.

Submission format and group size

Regarding the group size, the competition should follow a flexible approach, taking account of the different abilities and levels of experience of students regarding group work. Individual as well as group (e.g. max. 6 students) or class submissions could be allowed for this purpose. As regards submission formats, the following possibilities were mentioned:

- video submission
- pitches to peers
- poster presentation among peers
- additional report

Rewards

As suitable awards to encourage students to participate and acknowledge their efforts, several ideas have been proposed in the interviews:

- funding for project realisation
- relevant knowledge from local actors
- travelling with finalists, mentors, etc.
- celebrations for final submission and interim achievements
- visibility and recognition in the form of presentation to implementors
- field trip with an interest in visiting industry such as fashion, food etc.
- reward should suit principle of circularity

Mentorship and Peer-Collaboration

The interviewed experts found the implementation of mentorship in the competition to be highly relevant and beneficial. Benefits of including mentors in the process were seen in the following aspects:

- Enabling connections beyond the schools as an important driver for changing mindsets.
- Creating intergenerational exchange: learning from and realising projects together with the older generations can lead to more understanding and less intergenerational tensions regarding environmental issues
- Taking of work load from teachers
- Bringing in expertise from outside the school
- Creating bridges in-between students and the “real” world
- “Humanizing” companies by showing the people working behind it
- Fostering international collaboration
- Motivating students to achieve local recognition and impact
- Creating future job opportunities for students
- Gaining fresh perspectives from students

For the ideal way to implement the mentorship into the contest, a mixed approach was proposed, that provides a network of already committed mentors on the one hand, and proper guidance for students to find additional mentors themselves. Also in this regard, it has to be considered, that students’ abilities to establish contacts will vary substantially, depending on the students age and their previous experiences. Certain school types are already quite accustomed to collaborating with external stakeholders, while for others this is new territory. The exploration of the local actor landscape can be perceived as one of the key tasks in participating in the contest and it requires tools, guidelines and

support for the students to succeed. Enabling students to experience working one or two days in the industry of their interest could be a great additional opportunity.

Potential types of mentors mentioned in the interviews are:

- NGOs and foundation are great collaborators
- Universities, university students
- School from different countries
- Local businesses, industry
- Community representatives, specialists, experts
- Municipalities
- Environmental associations
- Family members
- Peers

Ideally, local mentors would already be included already from the beginning, e.g. in the contest design, to raise their motivation to be part of CCC.

Peer-to-peer mentorship

A matter repeatedly mentioned in the interviews **was the importance of peer-to-peer exchange**. **Some students might find feedback from their peers even more valuable than adult opinions.** In this vein, the competition could aim at creating a community in social media or exchange events (e.g. colloquia, pitching events) among teenagers to exchange their ideas and provide feedback. This would have the potential to create a common feeling of collaboration and strengthen the community dimension.

Implementing CCC within existing curricula

How can the CircularCityChallenge be applied within the prevailing frameworks, specifically the curricular? Since time and resources for extra-curricular activities are scarce among teachers and students. If CCC is to engage a wide range of teachers and students, it has been stated to be essential to find ways to integrate the contest in existing school routines. Since the competition will be applied across Europe, it needs to be flexible to accommodate for different settings.

One approach is to anchor the materials more directly with official curricula, by **stating exactly which parts (across different subjects) of the curriculum are covered by the project. The more subjects and parts of the curriculum can be "ticked-off" the more appealing it might be for teachers** (note: school curricula do not only vary between different countries but also across school types). Also, the best possible integration into school activities should be pursued. A variety of possibilities, that might be applicable in some countries more than in others are:

- **project work as substitution for homework**
- **integration into "project weeks" which usually have very clear pedagogical goals and enable cross-subject activities**
- **integration into science fares**
- **after-school-care ("Hort"), in Austria often run by the municipality or special "Hort" associations, or existing school clubs (environmental club, debate club, etc.)**

Beyond these short-term solutions, a long-term integration of circularity education and interactive formats such as competitions needs to be investigated. The according formal procedures vary substantially across different national settings, but many endeavours in this direction are already being made.

Channels

Regarding the most suitable channels to reach the necessary stakeholders for the competition, the experts named similar approaches:

Students might be reached best via their schools and social media.

Teachers can be contacted especially through the schools as well, preferably in person, by doing a small intro at the school and providing promotional materials, such as flyers or posters. If a personal visit is not possible, contacting via phone might also bring better chances in comparison to emails only. For the Netherlands, the best way to reach teachers was stated **by going directly to them**, e.g. **during project week.** For Austria it was mentioned that the **school management** is usually in charge of authorising and organising extra-curricular projects and activities and is therefore the most important point of contact.

Potential mentors will need to be contacted individually and locally, if applicable via local networks, since they are very region-specific (e.g. organic farmers etc.). They could also be reached via advertisements in local papers.

3.3 Key takeaways for the CircularCityChallenge

This summary of expert interviews entails many different perspectives, yet, similar conclusions can be drawn for the design of circularity education overall, and the CircularCityChallenge in particular. Overall, it is obvious that there can be no one-size fits all approach: Teachers and students are used to different educational tools and bring different competences with them. Educational systems and schools provide different resources as well as organisational settings. Also, the interviews traced the ideal way of teaching sustainability, which, however, cannot always be reconciled with contemporary working conditions of school staff and students' everyday life. A lot of motivation, experience and efforts can already be found to deal with this challenge and to transform teaching to fit today's requirements. It will need a number of approaches and the CircularCityChallenge can be one of those pursuits. **As a competition that is flexible in its application**, open to a great variety of submissions and supportive for all participants, CCC can play a big role in bringing circularity closer to local communities and **create a sense of agency among the youth**. To summarise, the following recommendations can be drawn from this report:

About circularity education in general:

- address circularity in a **cross-disciplinary** way
- include **transversal skills** (and media competence)
- find a balance between **sincerity** of the topic and **optimistic** approaches
- find balance between **individual responsibility** and the **bigger picture**
- break down the bigger picture and theory to the **local context** and **everyday experiences**
- consider that **awareness and agency** should be increased for both **students** and **teachers**
- teaching materials should be **fun**, **interactive**, **experimental** and **tangible**

About CCC concept:

- address students with **different skills, interests and backgrounds**
- consider **different abilities** and **levels of experience** regarding project-based work and group work
- provide best possible **guidance** and **support** for teachers and students
- connect CCC to **existing school activities** (project weeks, science fares, after-school-care, etc.)
- connect to **incentives for schools and teachers** (funds, workshops, etc.)
- keep **required effort** by teachers as **low** as possible (incl. administrative effort)
- provide all materials in **different languages**
- aim at the **actual implementation** of as many projects as possible
- provide **meaningful awards** connected to project implementation
- evaluate the project in a **transparent** and **comprehensible** way and give **feedback** to all submissions
- **mentorship** is an essential part for the success of CCC
- provide pool of **pre-informed mentors** + **guidelines** to find more mentors
- foster **peer-to-peer exchange** (also internationally)

4. Appendix A – Description of Interviewed Experts

Country	Name and Role of the Expert	Date of Interview
Austria	Laura Kafka is teacher with experience in sustainability education and extracurricular activities in inclusive and secondary schools ("Allgemeine Sonderschule" and "Neue Mittelschule" in Lower-Austria	04.01.2023
Austria	Bertram Häupler, program manager at OekoBusiness Vienna, helps companies generate „green and clean" profits through environmental management practices	02.02.2023
Austria	Dr. Ezster Salamon has specialized in students' rights and parents' rights, president of the European Parents Association she became deeply involved in European education topics including youth unemployment, the importance of developing key competencies, the role of informal and non-formal learning	27.01.2023
Austria	Phil Smith, head of Teacher Scientist Network, UK	28.03.2023
Netherlands	Daan de Kruijf, expertise in circular skills at Leren Voor Morgen	February 2023
Netherlands	Roger Thomassen, Project learder sustainable education at CNME	February 2023
Netherlands	Valaria Sinioushkina, expertise community activism at UPBrussels	February 2023
Netherlands	Lianne van Tilburg, expertise leader of education at CNME De Rollen	February 2023
Romania	Ana Bugheriu, an expert in Educational STEAM Programme, outside of schools but in connection with schools	February 2023
Romania	Felicia Scoli Verzi, an expert in Green Schools implementation	February 2023
Romania	Ciprian Fartusnic, expert in educational sciences and formulation of educational policy documents and strategies	29.01.2023
Romania	Angelica Mihailescu, an expert in educational sciences	01.02.2023

5. Appendix B – Interview Questions

Section 1: General experience with teaching sustainability/circularity:

- How do you teach circularity/sustainability to your students?
- From your experience, what was something positive or negative in terms of the methods or resources needed when teaching circularity?
- What competencies (knowledge and skills, values, and thinking approaches) do you consider important for high school kids to have in sustainable development?
- What competencies (knowledge and skills, values, and thinking approaches) do you consider important for high school teachers to teach sustainable development?
- What would be the main messages that you consider useful to be transmitted to the high school age group regarding circularity? (From 14 to 18 years old).
- How do you help students engage and discover what is going on in the world? (e.g. MUN)
- How to present climate topics with positivity, constructively vs. causing anxiety?
- How do you see the role of technology in teaching sustainability?
- How do you see the role of involving local industry in teaching sustainability?
- If it would be to transfer this experience towards formal education somehow for this age group - what are the necessary conditions for that to happen?

Section 2: Comment on Preliminary Contest Concept

- Showing preliminary concept and materials – everybody shows the same scheme and description:
- Please, comment on our concept: does it lead to our foreseen impacts (look at GA)? Why? What are the potential specific barriers and mitigation measures?
- What are the best ways to implement CCC in existing curricula (what format – integrated, self-standing, in form of camps and workshops- duration, etc)?
- How should we design the activities so that teachers and students don't need to use their free time?
- What kind of outputs of our CCC contest would be useful to you?
- How would you (the teacher) like to be reached by us, and with what kind of materials? How would you reach other teachers to participate in the contest?
- How can we apply this contest idea in your school (theoretically, where to start, bureaucratic settings, etc.)?

Section 3: Educational Contests as a Teaching Method

- Short intro about the circular city challenge: A competition - for high school kids - that would help them understand circularity while: practicing circularity in their places, imagining ways of introducing it, and advocating for it.
- Do you have previous experience with contests like this and what are the lessons learned?
- How would you design your competition (from an educator's perspective)? – what kind of resources - tools, materials - needed

- What topics would you introduce to your potential participants? Or would you introduce it at all?
- What kind of mentors and from which background do you think you and your students would like to collaborate?
- What is the best way to reach mentors, teachers, and students? What would be your strategy? Do you already have a network of potential local mentors or a way to reach it?
- What are the barriers for teachers and students to participate in such activities, e.g., educational contests? – for local, national, and EU levels. How do we overcome them?
- How can the development of sustainable knowledge and skills be measured? How can we measure the learning effect and impacts on stakeholders of the contest?

Finally

- Would you like to be part of the challenge? Are there possibilities of getting your assistance?