

## CES Winter School 2020

### “Sustainable development, complexity and change: thinking and practices for the SDG and other objectives”

14 - 18 December 2020 (Online)

#### DESCRIPTIVE AND EVALUATION SUMMARY REPORT<sup>12</sup>

Rita Campos, Ana Teixeira de Melo, Leo Caves, Philip Garnett

#### INTRODUCTION

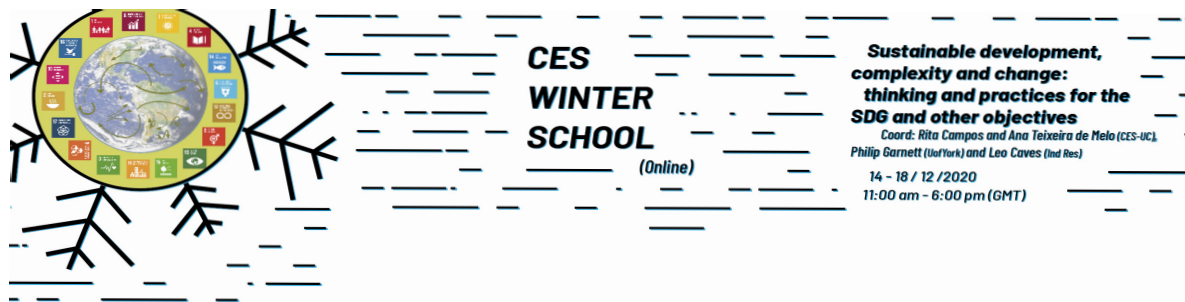
The CES Winter School “Sustainable development, complexity and change: thinking and practices for the SDG and other objectives” (<https://ces.uc.pt/summerwinterschools/?lang=1&id=27490>) was held online between the 14th and the 18th of December of 2020. It was originally scheduled to be held at Casa da Esquina, a cultural association in Coimbra, in September of 2020, but had to be postponed to December and converted to a virtual/online format due to the COVID-19 pandemics. The coordination team was composed by Rita Campos (CES-UC), Ana Teixeira de Melo (CES-UC), Philip Garnett (York Management School e York Cross-Disciplinary Centre for Systems Analysis, University of York, UK), Leo Caves (Independent researcher, PT, collaborator of the Centre for the Philosophy of Sciences of the University of Lisbon, Associate do York Cross-Disciplinary Centre for Systems Analysis, University of York, UK). Together, they lead and integrate the central team of the project “[Building Foundations for Complex Thinking to Promote Positive Change in Complex Systems](#)” which aims at objectives aligned with those of the school.

The School was based in a logic of deep interdisciplinarity, oriented towards promoting productive, collaborative, critical and creative dialogues between different disciplines and modes of thinking, between theory and research and the practices that “in the real world” enact and realise, critique or present alternative or complementary proposals to the Sustainable Development Goals (SDG).

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<sup>1</sup> Date of the report: 24th May 2021

<sup>2</sup> Recommended citation: Campos, R, Melo, A. T., Caves, L. S. D. & Garnett, P. (2021). *CES Winter School 2020. ‘Sustainable development, complexity and change: thinking and practices for the SDG and other objectives’. Descriptive and evaluation summary report*. Coimbra: Centro de Estudos Sociais.



Being a part of the international political agenda since 1987, the notion of sustainable development is considered a global mark towards the awareness of the need of a new paradigm for development, guiding policies aimed at the respecting the interrelation between economic growth, social inclusion and environmental protection as cornerstones for the individual and collective well-being. However, both the concept and its expression, configured in the 17 SDG and their indicators, remain under discussion, raising issues about their adequacy to places, contexts and specific problems, about the practices that sustain the concept of sustainable development and the degree of congruence between the thinking underlying the SDG, the complexity of the world and the actions informed by such thinking. The question needs to be raised that an insufficient recognition of the complexity of the problems that sustain the SDG and the realities they aim to dress, as well as of the need to develop modes of thinking and practices congruent with such complexity, may prevent or limit the success of this new agenda, even leading, in unpredictable ways to the configurations of new, more or less preferred or unwanted realities.

This School aimed to stimulate the discussion around the SDG, guided by critical, alternative and complementary views. The invitation was sent to academics, activists, intervenors, educators and whoever more is interested in participating in the co-construction of new ways of thinking and action that inform the pursuit of sustainable and desirable alternatives for the place of humanity. The School also included the exhibit of four posters from doctoral and postdoctoral researchers which were targeted by a critical re-construction process throughout the School and equally presented on the last day.

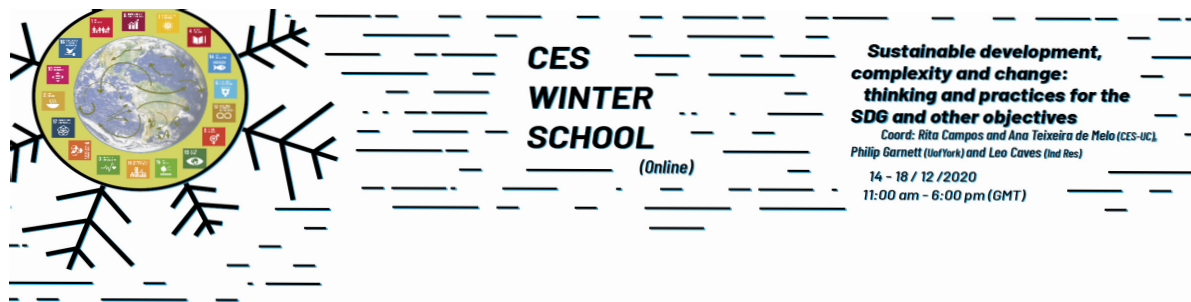
A variety of creative techniques and mediums (described below, in the Methodology section) was used to support rich interactions and dialogues amongst the participants and the co-evolution and co-construction of new ideas.

To reach a wider audience interested in the themes of the School, daily reports were shared on the School's Facebook page (<https://www.facebook.com/CES-Winter-School-Sustainable-development-complexity-and-change-103094948163934>).

## **BRIEF SUMMARY OF THE SCHOOL**

### **General structure and dynamics**

The School ran from Monday to Friday, from 11am to 8pm (GMT), for a total of 35 hours of collective work, online. Two platforms were used: Zoom and Miro.



The collective working days were organized in four main categories of sessions, designed to stimulate the debates, thinking and emergence of novel and creative ideas in different forms. These sessions included four types of activities: 1) lectures, 2) collective narrative work, 3) creative craftwork, and 4) integrative discussions.

There were also two moments dedicated to poster presentation and poster reconstruction and discussion. Between these moments, participants and facilitators were invited to comment and contribute ideas to a reconstruction of each poster.

A graphic designer accompanied the School, capturing the main ideas and helping to facilitate the collective debates. A dialogue between the group and the wider potential interested audience was maintained by at least one publication per day on the School Facebook page and also by collecting questions or commentaries on a dedicated questionnaire (in Portuguese and in English).

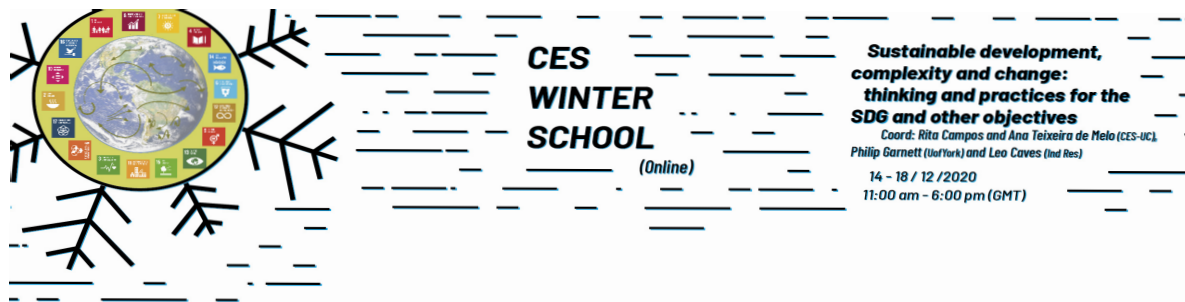
More details on the School program are given in the Methodology section.

### **Group: Participants and facilitators**

The group comprised 13 participants, of whom 4 had the opportunity to share their work in more detail in a poster format, and 12 facilitators, of whom 4 were also the organizers, and 1 graphic artist.

The participants were very diverse, such as in their nationality, stage of the career, type of work or country from where they were participating. For example, one participant was Portuguese, attending from Portugal, working in a NGO; 5 were Brazilian, 3 attending from Brazil and 2 from Portugal, 3 were PhD candidates, 1 was a visiting scholar and 1 is working at a University office; 2 were from the United States of America, 1 has been living and working in China; 2 were Colombian; 1 was Spanish and 1 Swiss. Their academic background was also diverse, such as biology, anthropology, education, geography, forest engineering, sociology or law. Their role and areas were also very diverse, from graduate students to filmmakers, project coordinator or professor; working in areas focusing food justice movements, indigenous and local knowledge, systems science to collaborative care, family resilience, international cooperation, global citizenship education, youth and gender studies, ecology, critical environmental education, non-extractive methodologies or visual anthropology. There was also a gender balance, with 6 female participants and 7 male participants.

The facilitators were mainly from CES - Ana Teixeira de Melo (also coordinator), António Carvalho, Beatriz Caitana, Isabel Ferreira, Luciane Lucas dos Santos, Paula Duarte Lopes, Rita Campos (also coordinator), Sara Araújo and Teresa Cunha. From outside CES, there were Leo Caves (also coordinator), as independent researcher, collaborator of the Centre for the Philosophy of Sciences of



the University of Lisbon, Associate do York Cross-Disciplinary Centre for Systems Analysis, University of York, UK; Magnólia Araújo, from the Federal University of Rio Grande do Norte, Brazil; and Philip Garnett (also coordinator), from the York Management School e York Cross-Disciplinary Centre for Systems Analysis, University of York, UK.

The graphic artist was Daniela Barros, from Association Cultura Curto Espaço, at Aguda Beach, and Futilidade. Daniela was present for the entire duration of the School and created graphic registries of its main moments - her drawings are used in this report to illustrate her work and the moments, spaces, processes and discussions of the School.

## METHODOLOGY

### General notes and aims

This section provides an overview of the methodologies used to enhance participation, collaboration and the emergence of novel and creative ideas. This overview has two main purposes: 1) to register the processes leading to the organization and facilitation of the School, as a writing memory of the activity, and 2) offer some guidelines for future events aiming for deep interdisciplinary discussions and engaged, creative and productive interactions.

Additional details regarding the theoretical rationale and objectives underlying the methodology and methods can be found in Melo and Campos (2021).

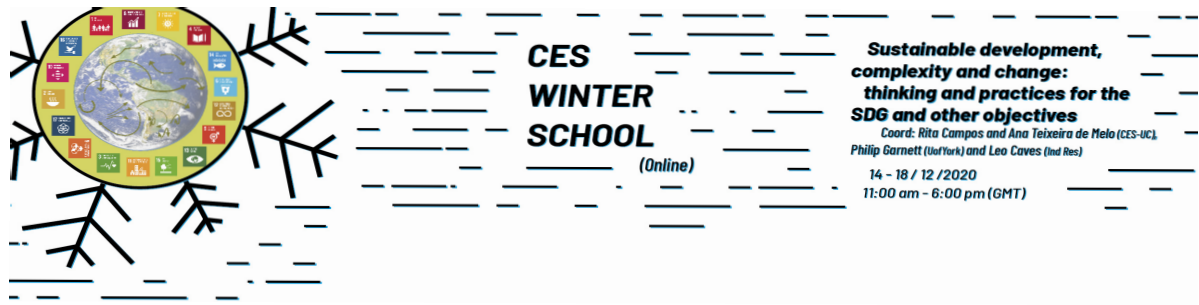
### The virtual platforms: Zoom and Miro

The School took place using two platforms simultaneously: Zoom and Miro<sup>3</sup>. Zoom provided the video interface and the audio medium for the School while Miro was used to support all the activities and interactions, providing a visual medium and differentiated spaces for each activity. A mock version of the School in Miro and a brief video were created and shared with facilitators and participants a few days before the starting of the School, so that all could get familiarized with the platform (see below). In the beginning of the first day participants also had a brief about the tools and spaces and how to use and navigate them. The purpose of the different Studios and spaces in Miro was explained during this moment.

### Logistic, preparatory meetings and support activities

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<sup>3</sup> Cf. [www.miro.com](http://www.miro.com)



Preparatory meetings. Preliminary meetings were held with the group of participants and facilitators to provide an introduction to the platforms to be used and the dynamics of the School and to clarify some ground rules, namely on how to make contributions to a collective discussion or request support during the different sessions. Video Screens were made and sent to both groups before the School providing some instructions into how to navigate and use the available tools in the Miro platform.

Technical support. A support person was assigned from the group of coordinators to whom participants and facilitators could ask for technical support regarding any difficulty during the School. Anticipating the possibility of some technical failures a WhatsApp group was also constituted to ensure the possibility of direct communication between participants and the coordination at any time, namely for problem-solving. Preliminary meetings were also held with one participant regarding her anticipated difficulties and in order to build a support plan.

Support spaces: The reception and SDG's space. Because the School was focused on a debate around the SDG there was a space available with the SDG's symbols each linking to the SDG official definitions and indicators pages. The reception space gathered some support documents that participants could access during the School, namely the program, the link for the Facebook webpage and suggested hashtags as well as the support video screencast on how to navigate and operate the Miro board.

## **The Schools' activities and the corresponding virtual spaces in Miro**

In this section, we present an overview of the major categories of activities and the different spaces of the School, in the Miro board, that supported them. Figure 1 presents an overview of the Miro board with its different spaces at Day 1 while Figure 2 shows the final space as it was transformed and expanded throughout the activities. The board allowed participants to navigate and zoom in and out of the different spaces, interacting with them and with other participants in them.



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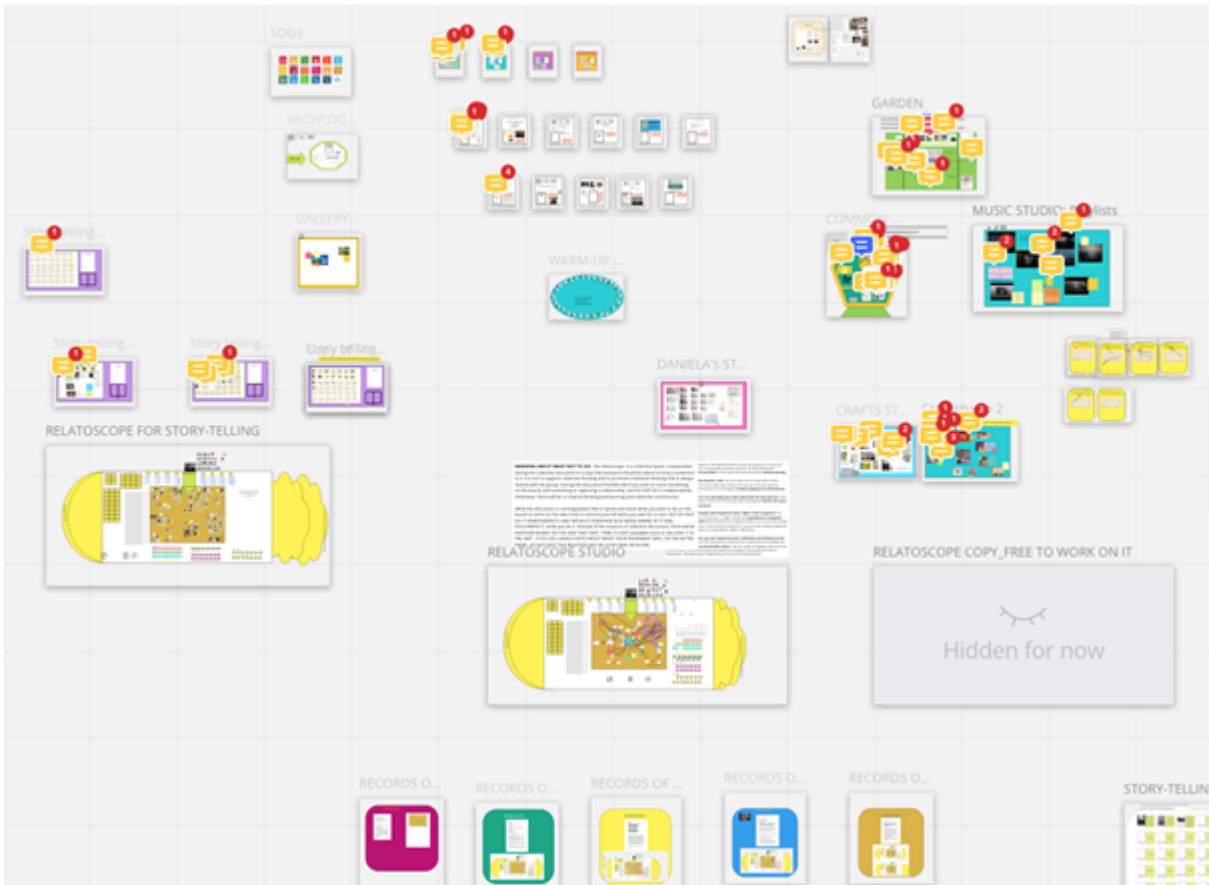
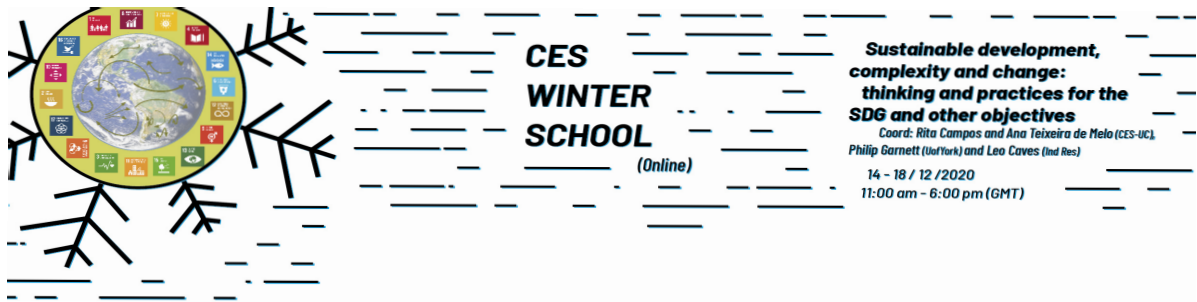
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14 - 18 / 12 / 2020

11:00 am - 6:00 pm (GMT)



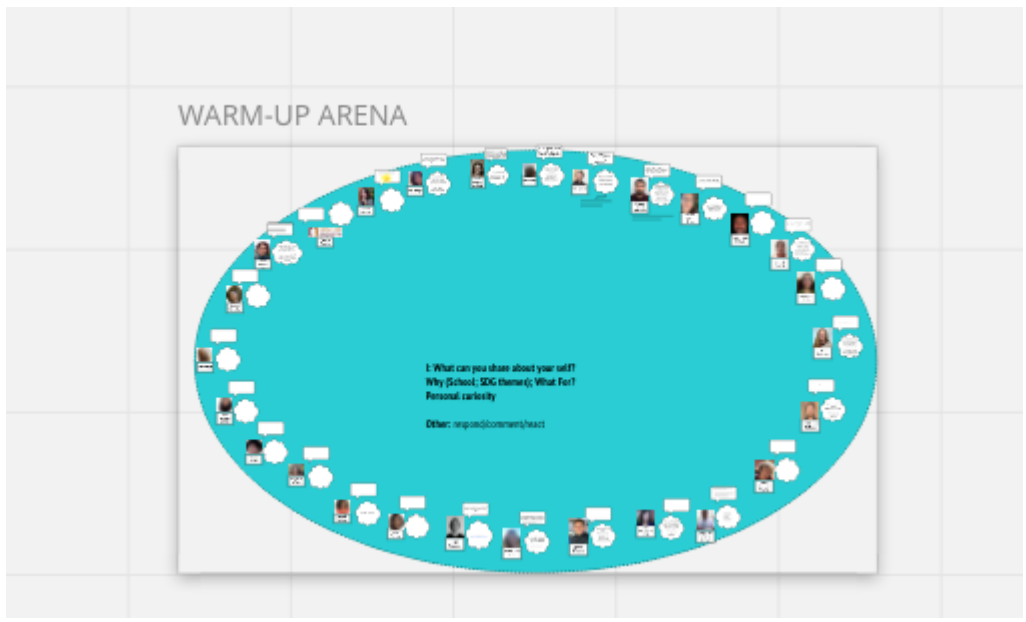
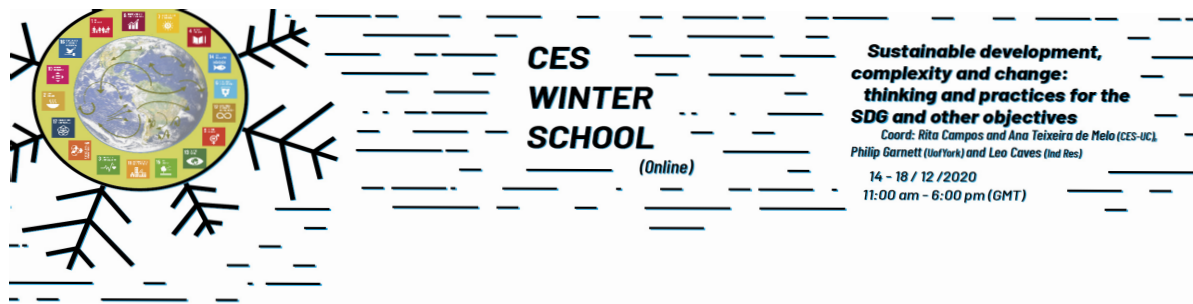
Figure 1. Artistic representation of the starting of the School, the group and an overview of its Tools (Drawing authored by Daniela Barros)



**Figure 2. A zoomed out overview of the “filled” and transformed space of the Virtual School by the end of Day 5 (end of School)**

*Warm-up activities and the Warm-up arena*

The warm-up arena was a circular space used for the initial presentations and warm-up activity. As shown in Figure 3, it contained an “avatar” for each participant, with their names and photos as well as thinking and speech balloons attached. Participants were asked to present themselves responding to the questions of ‘Why?’ (to participate in the School) and ‘What for?’. Additionally, they were asked to share something personal or a curiosity about themselves.



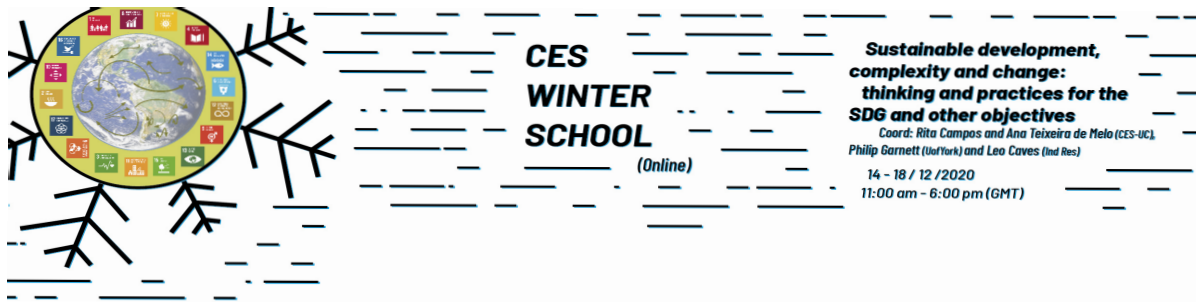
**Figure 3. A Zoomed out snapshot of the warm-up arena**

*Group building and social interactions: the Common Room and the Garden as the virtual social spaces*

Two spaces - the Common Room and the Garden (Figure 4) - were deliberately designed to promote interactions at a personal level and the sharing and disclosure of personal information and about each other’s contexts, hence situating the experience in time and space and allowing for the exploration of similarities and differences, for mutual appreciation and surprise. The social spaces added an embodied dimension to a virtual interaction since participants were invited to focus on their embodied experiences.

In the Common Room, a space with the shape of 2-tier house, participants were invited to: ‘choose’ their drinks from the cupboard, writing down which they were having or preferred; take photographs of the ‘views from their windows’ and upload them, along with comments, sharing something about their contexts and location; share their meals, preferably something typical of their cultures and location in the ‘dining area’ by uploading photos and commentaries. A pinboard was available allowing participants to share any information, such as ‘postcards’ or notes pertaining to their ‘situatedness’ and contexts as well any other personal information.





**Figure 4. Zoomed out images of the Common Space and the Garden Space**

The School’s Garden space had links to some videos and photos of yoga and other exercises that could be used to prevent strains and injuries from sitting at a computer for too long. There was a sports table where participants were invited to identify their favourite sports activities or add other hobbies. The garden also had a link for a folder to host videos or photos of the participants ‘garden walks’, sharing something about their activities outside the time of the School.

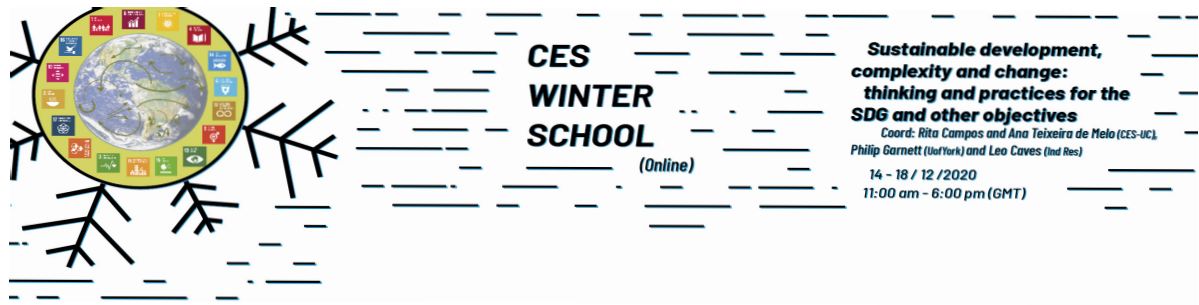
In these spaces participants could use the comment functions to leave comments on each other’s posts. Many of these interactions and contributions occurred outside of the official time of the School, both during the breaks as well as before and after the end of the working day.

A world-clock was available where the time zones of the different participants could be found.

*Emergent social interactions and new spaces*

Some spaces were added to the Miro board during the course of the School as the dynamics of the interactions within the group became more diversified and the participants made suggestions. Two additional spaces were created: the Sharing Studio and the Music studio.

The Sharing Studio was a space where participants could share documents and videos pertaining to their own projects and activities as well as publications. The Music studio was a space where participants could indicate playlists or youtube videos of particular songs they would like to be played and shared collectively while everyone was doing individual work for the story-telling and the crafts studio. These moments of individual activities (where the videos and audios continued to be shared) were then punctuated by a common experience of listening to the same music and the



sharing of personal information through the choice of background music and songs to be played or reactions to them.

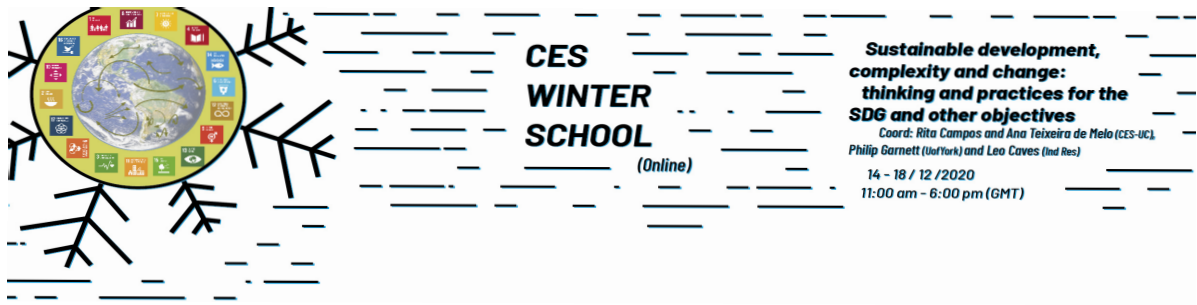
### *Records of the Day Space*

At the end of each day, the coordination team collected all the comments left on the Notes panel (details below), as well as other left on each seminar room and/or the Zoom chat, and saved in a file that was made available to all on this dedicated space.

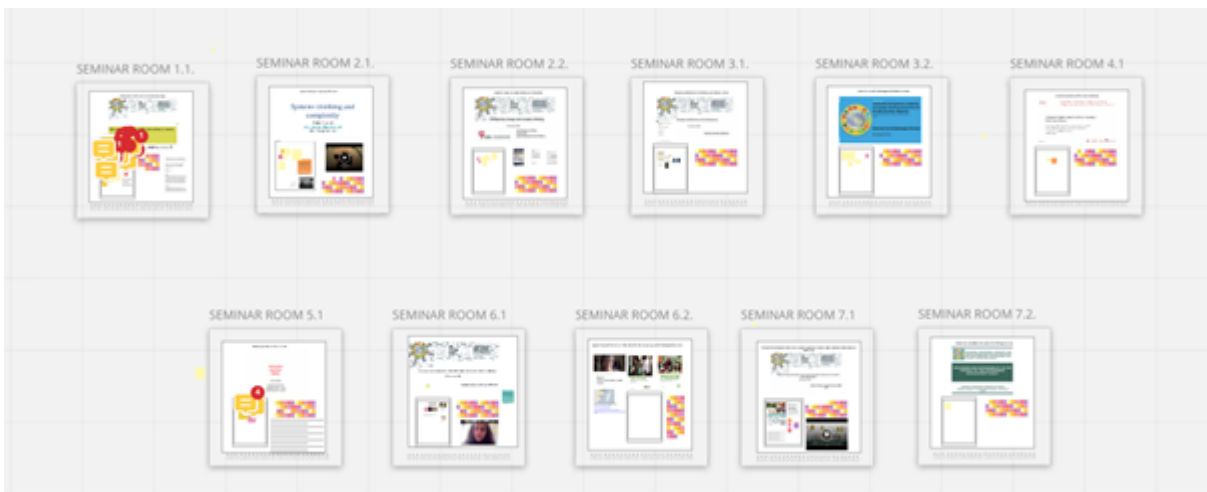
### *Lectures and the Seminar Rooms*

Each keynote lecture had an allocated room in Miro, to which the program referred, as shown in Figures 5 and 6. Each virtual room was customised by each speaker. In some rooms, the speakers made available papers or other publications as well as links to website or videos. While the speaker could make a presentation sharing their screen using Zoom, participants had the possibility of interacting independently with the slide presentation on Miro. A panel of sticky notes and a whiteboard was available in each room.

As the lectures unfolded participants could take notes of comments or questions to the speakers, in the seminar room using these tools. They could also comment on each other's posts. The interventions made in these spaces were more directed at the presentation. At the same time, there were designated spaces on the Notes panel (explained below); comments left on this panel were more reflections elicited by the talks, sometimes opening new conversations and threads of discussion.



**Figure 5. Zoomed out snapshot of a lecture room after the session.**



**Figure 6. A general zoomed out overview of the Seminar Rooms**

Overall, there were 11 lectures organized in 7 sessions. These were more “traditional” sessions, including a 40 minutes presentation followed by a 10 minutes questions and answers (Q&A) moment. To complement the brief Q&A, there was a dedicated space and a dedicated comment thread on the Notes menu for each presentation in Miro (more details are given below), where all participants could leave comments and/or engage in a parallel discussion. All the ideas shared in



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these moments and media were integrated into the other categories of sessions (collective narratives, craftwork, and integrative discussions; see below).

Session 1 had one presentation, “Introduction to the ODS and critical visions”, by Rita Campos, offering an overview of the formulation of the concept of sustainable development, that delimitates the formulation of the SDG, the integration of other knowledges, experiences, ways of looking and making sense of the reality(ies), and the importance of cooperation and dialogue. Figure 7 represent these and other topics brought to the discussion.



**Figure 7. Artist representation of the Introductory Lecture themes and discussion (Drawing authored by Daniela Barros)**

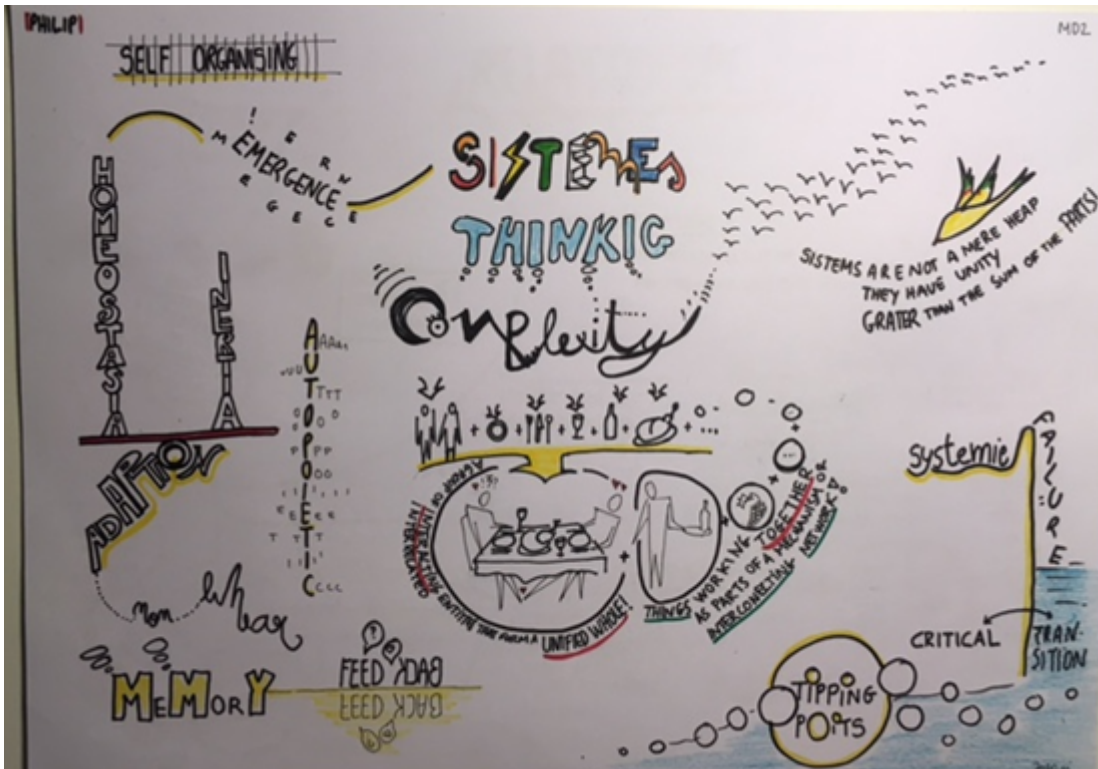
Session 2 had two presentations: “Systems thinking and complexity” by Phil Garnett, sharing some insights about system mapping and the notion of systems as interactive entities forming a unit and how system approaches can be closely related to different theories, models and worldviews; and “Complexity, change and complex thinking” by Ana Teixeira Melo, who talked about how our ways of thinking complexity influences the different possibilities of action and giving a relational look over



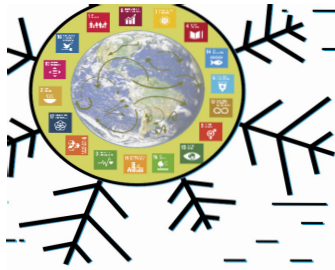
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complexity and development. The main topics, as well as related ones that came up during the Q&A, are summarized on Figures 8 and 9.



**Figure 8. Artist representation of the Systems Thinking Lecture and discussion (Drawing authored by Daniela Barros)**



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**Figure 9. Artist representation of the lecture on Complex Thinking and discussion (Drawing authored by Daniela Barros)**

Session 3 also had two presentations: “Ontologies and Multiverses of the Anthropocene” by António Carvalho, talking about the relation between meditation and mindfulness with new ways of building affect and the impact of the separation of mind and nature on the current ecological crisis and the contribution of these practices to the connection with humans and non-humans; and “Critical views from the Epistemologies of the South” by Sara Araújo, calling for the need to acknowledge the existence of a line that creates invisible zones, where the most vulnerable, stigmatized and excluded people are, and of the deconstruction of the concept of sustainable development from other experiences, knowledge, livelihoods. Figures 10 and 11 give an overview of these lectures and related discussions.



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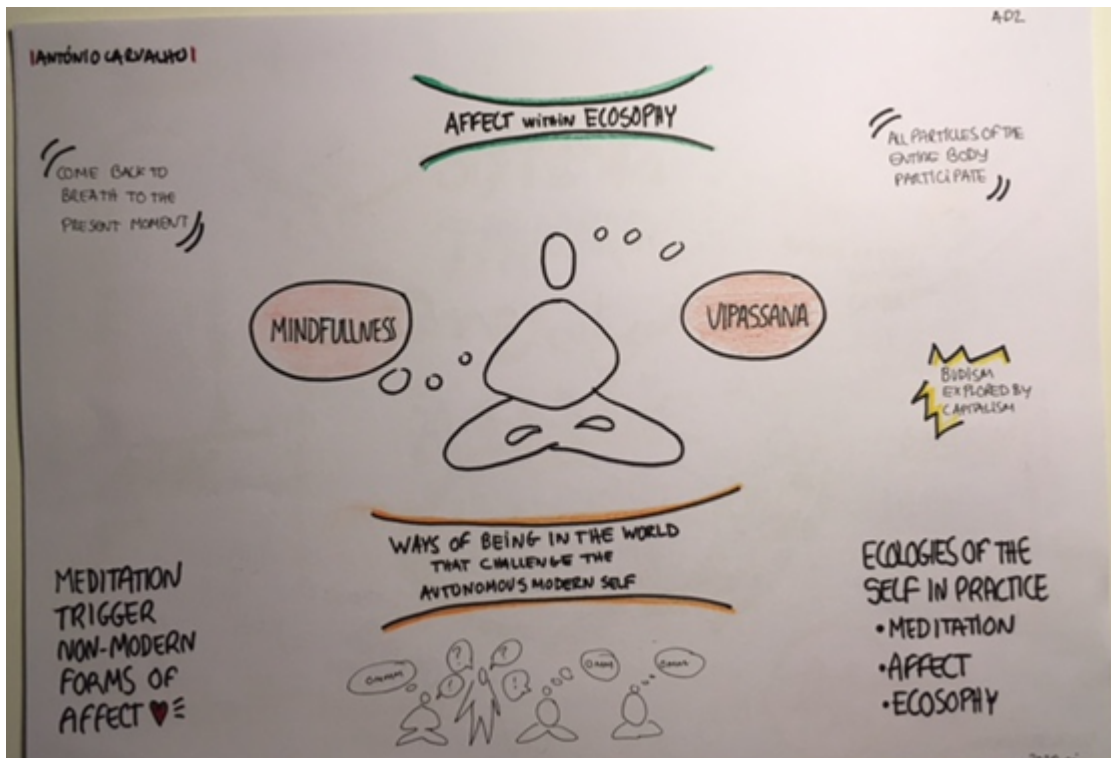


Figure 10. Artist representation of the lecture on Ontologies and Multiverses of the Anthropocene and discussion (Drawing authored by Daniela Barros)



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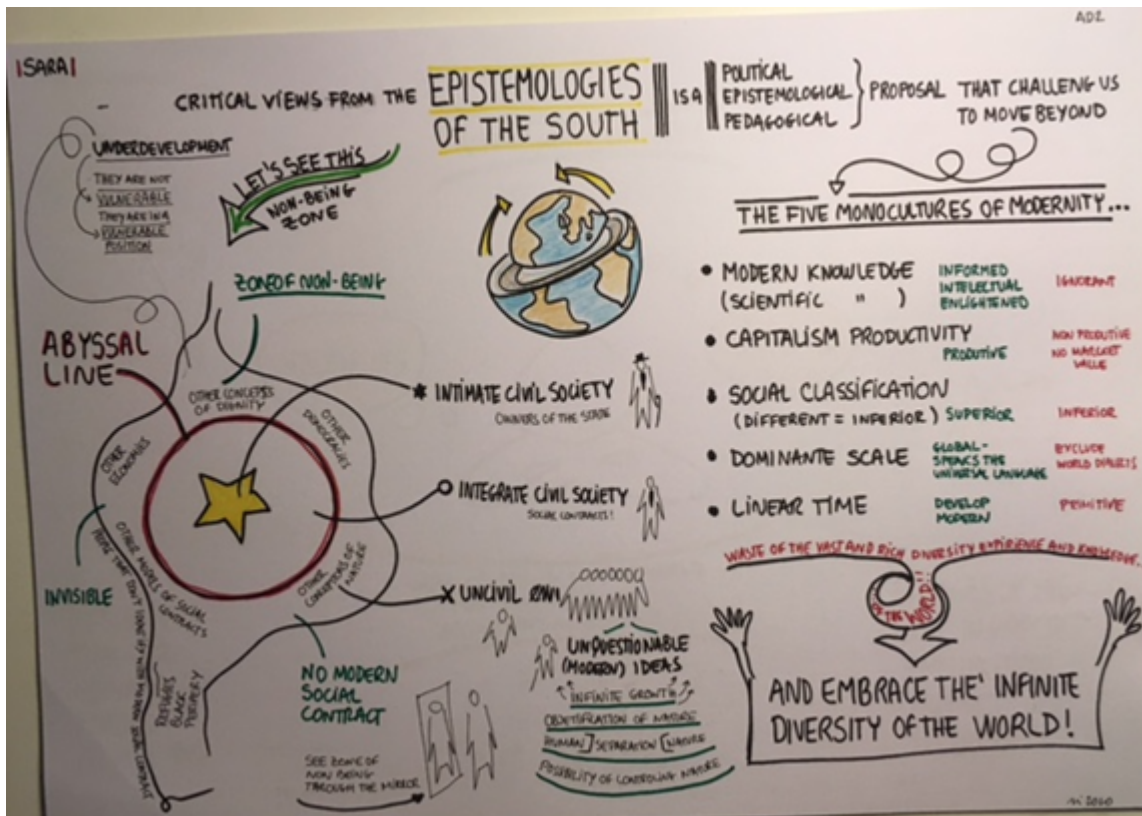
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**Figure 11. Artist representation of the lecture on Critical views from the Epistemologies of the South and discussion (Drawing authored by Daniela Barros)**

Sessions 4 and 5 had one presentation each, by Paula Duarte Lopes, on the topic of “Construction of policies and SDGs”, and Leo Caves, on “Network approaches and SDGs”, respectively. Paula spoke about the different challenges in the implementation of the SDGs in different contexts and the interference of monocultures in many levels, from the construction of the Agenda 2030 to local action. She used the example of the water in the discussions around these challenges and in looking for alternatives that embrace the diversity of points of views. Leo offered an overview about the properties of network models and their usefulness in different situations and contexts. He further discussed the application of these models in the analysis of the SDGs and in the identification of the inconsistencies and flaws in their development that may cause conflicts and compromise the results they intend to achieve. Both the topics treated during the lectures and the ones brought about during the Q&A are depicted on Figures 12 and 13.





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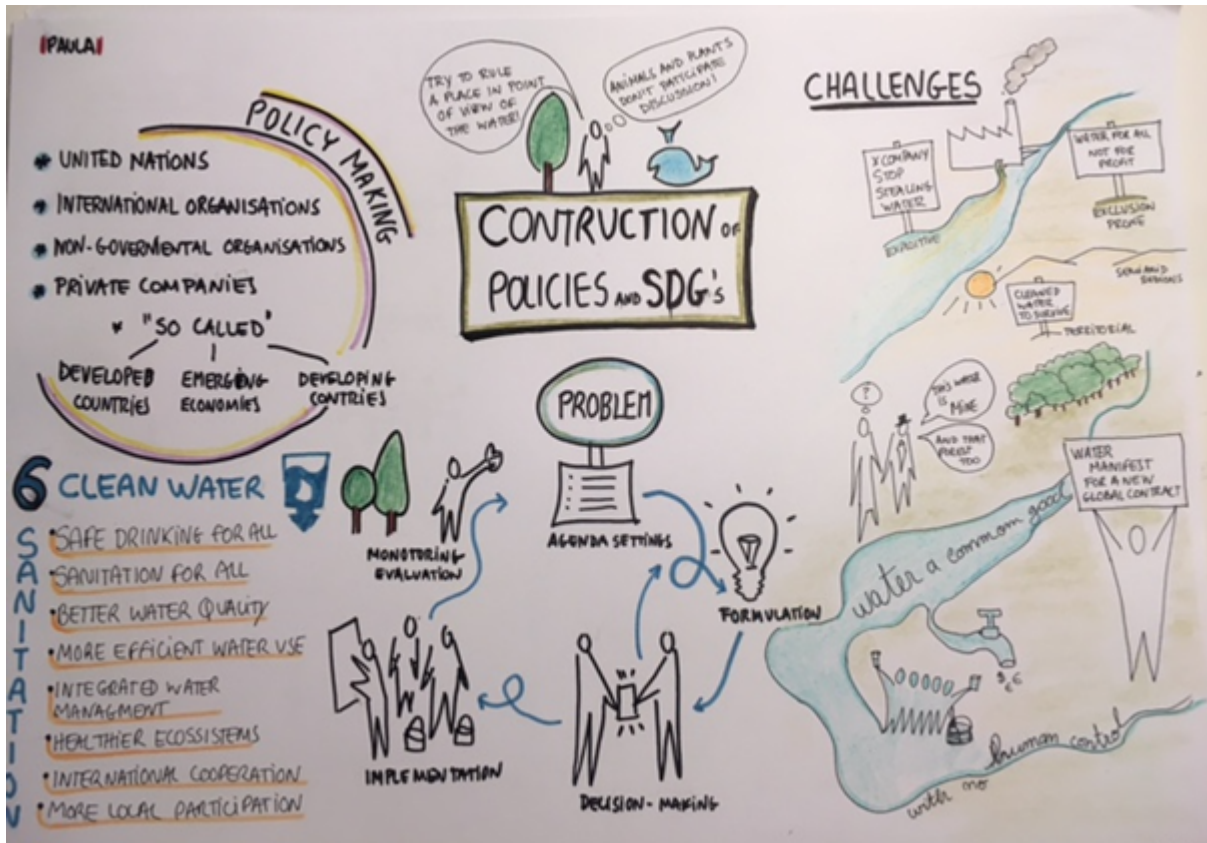


Figure 12. Artist representation of the lecture on Construction of policies and SDGs and discussion (Drawing authored by Daniela Barros)

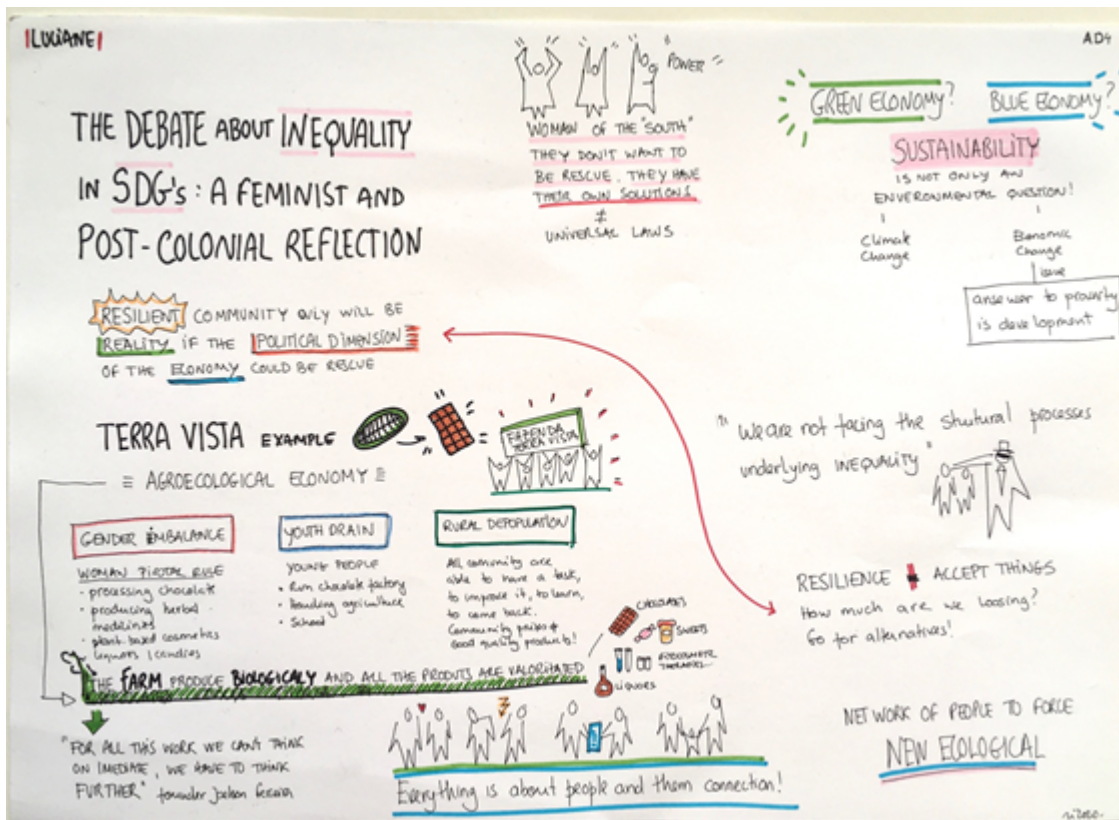




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**Figure 14. Artist representation of the lecture on The debate about inequality in the SDG and discussion (Drawing authored by Daniela Barros)**



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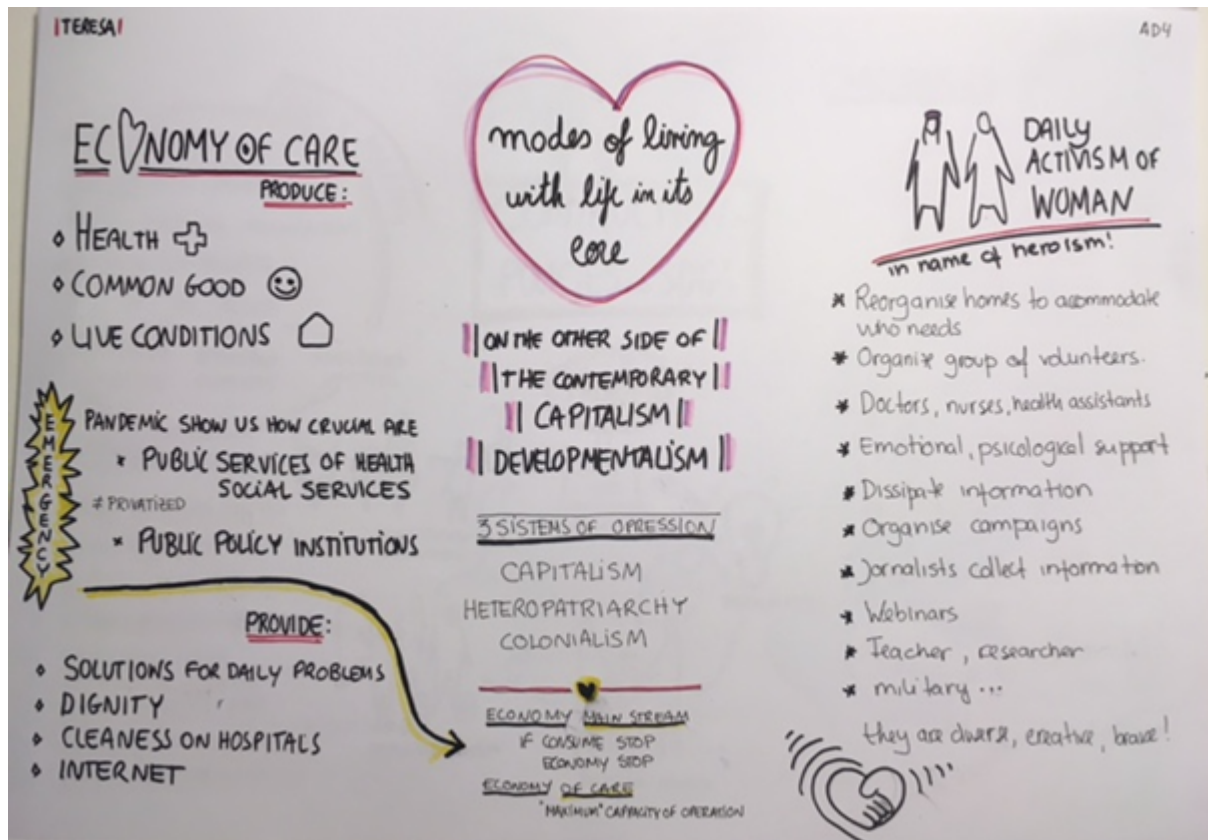
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**Figure 15. Artist representation of the lecture on Modes of living with life in its core and discussion (Drawing authored by Daniela Barros)**

The last two presentations, in session 7, were given by Beatriz Caitana and Isabel Ferreira, “Modes of living with people at the center. Co-creation experiences in inclusive urban regeneration”, and by Magnólia Araújo, “Education for sustainability in the context of the SDG”. Beatriz and Isabel talked about the cities as living and dynamic entities, and the right to the city, and shared some approaches to inclusion and effective participation of citizens that live and/or work in the cities, built from a perspective of nature-based solutions. Magnólia discussed the different dimensions of education for sustainability, and the absences and mismatches in discourses and contents related to education for sustainability, and on the resources that exist to its implementation. These lectures and the related discussions are represented on Figures 16 and 17.



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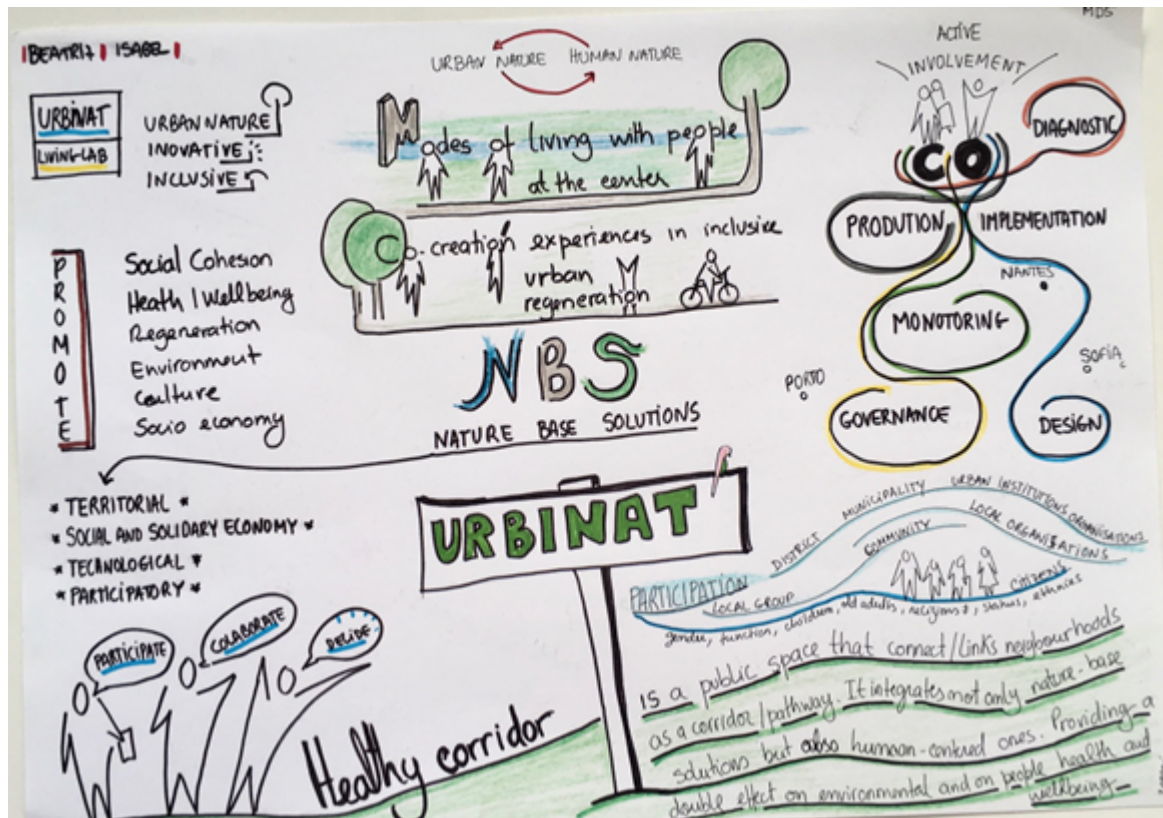


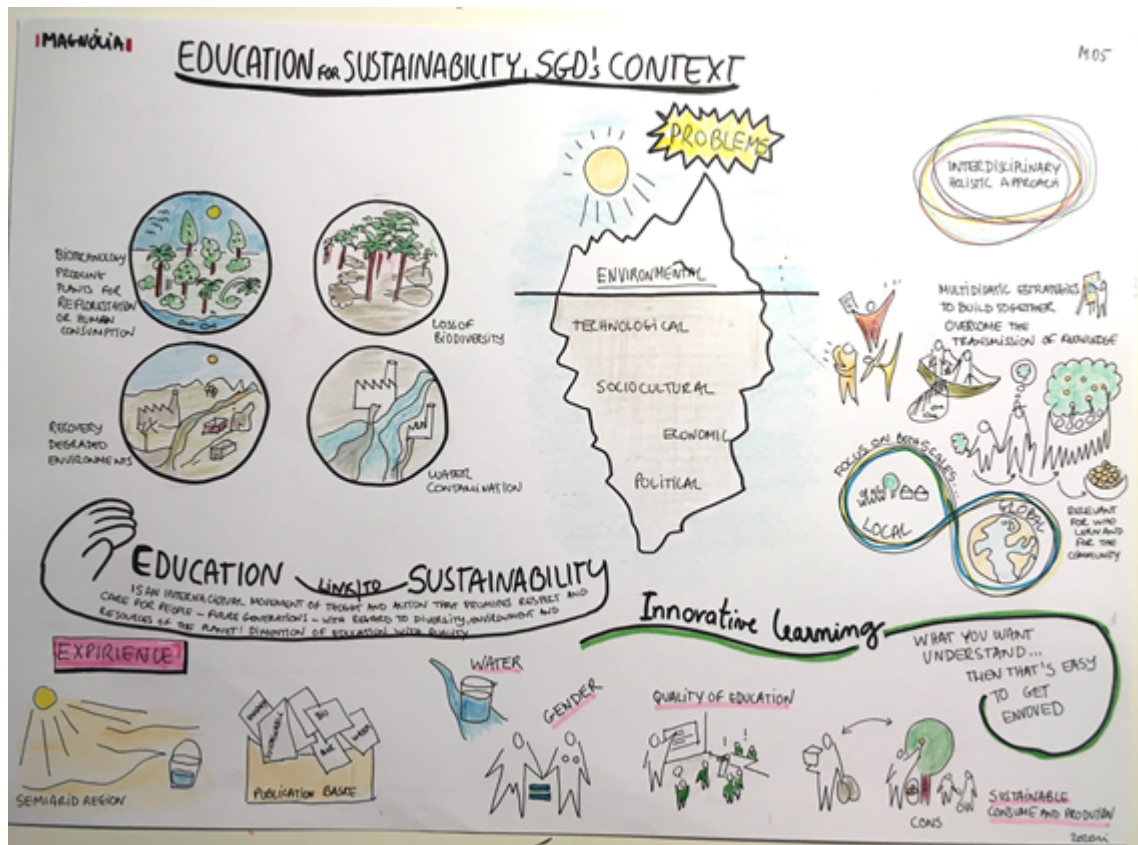
Figure 16. Artist representation of the lecture on Modes of living with people at the center and discussion (Drawing authored by Daniela Barros)



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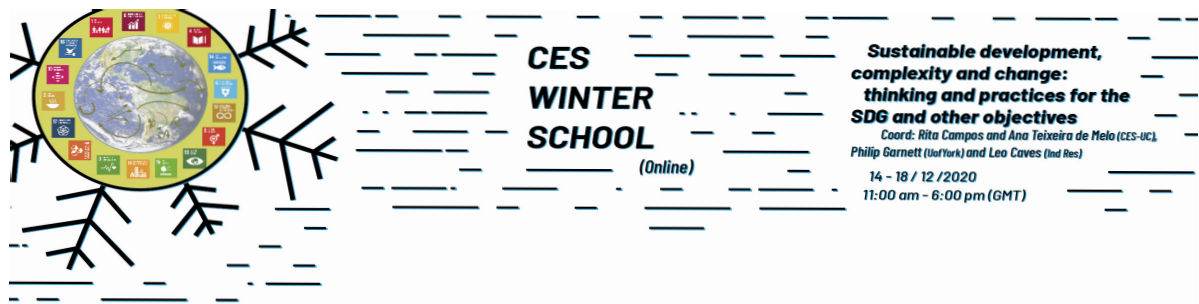


**Figure 17. Artist representation of the lecture on Education for sustainability and discussion (Drawing authored by Daniela Barros)**

*Stream of consciousness, live reflections and synchronous dialogues: The Notes panel*

As the activities unfolded, participants were invited to use the Notes function on Miro to register their 'stream of consciousness' and their live reflections. They were free to engage in synchronous conversations with each other in these Notes. At the end of each day, these notes were compiled and made available to the participants as a file in the Records of the Day Space. The notes panel, along with other resources where participants could share their reflections while the activities, allowed for each participant to manage their own attention in the most suitable way and offered a different medium for processing information according to individual preferred styles. It also supported different rhythms and time scales of reflection and of interaction which promoted positive conditions for creativity and the emergence of ideas.

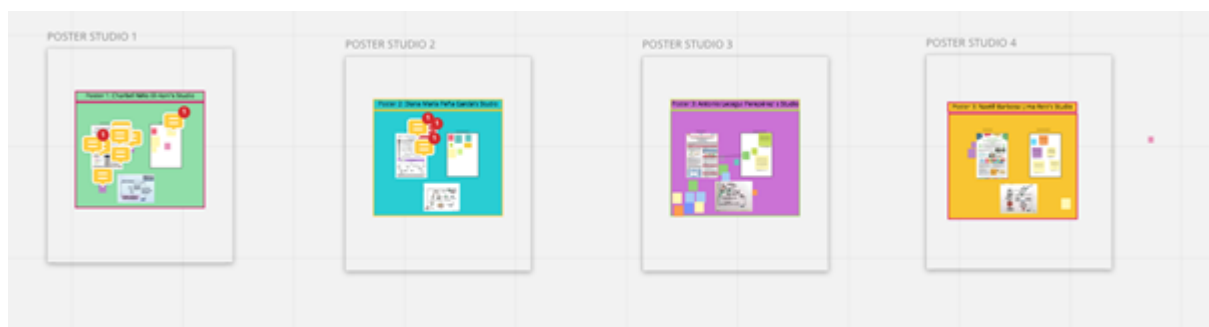
The discussion and reflections happening on the notes panel became also opportunities to freely associate and explore different ideas appearing throughout the School. The coordinators contributed



to the facilitation of this space not only with their individual reflections but also by importing into the stream of notes the contributions left on other sections of the board, for example, through sticky notes, or on the chat of the Zoom.

### *The Poster Sessions and the Poster Studios*

Similar to the lecture Rooms, each poster presenter had an allocated space where their poster was exhibited (Figure 18). A 'sticky-notes' corner was available to receive comments or questions that participants wrote during the poster presentation and throughout the School. Each studio had a blank space to support the work of reconstruction of the poster on the last day.



**Figure 18. A zoomed out snapshot of the poster studios by the end of the School, showing the collective reconstruction work**

Four participants presented their poster on the first day and received comments and feedback on the allocated spaces. Figure 19 depicts the main themes presented and discussed. On the last day, the group offered suggestions for potential reconstruction of the posters, under the light of the contributions of the School and the work developed. New inputs and perspectives were offered and written on the poster studios. The poster owners then offered their comments on the offerings for the poster reconstruction.



# CES WINTER SCHOOL

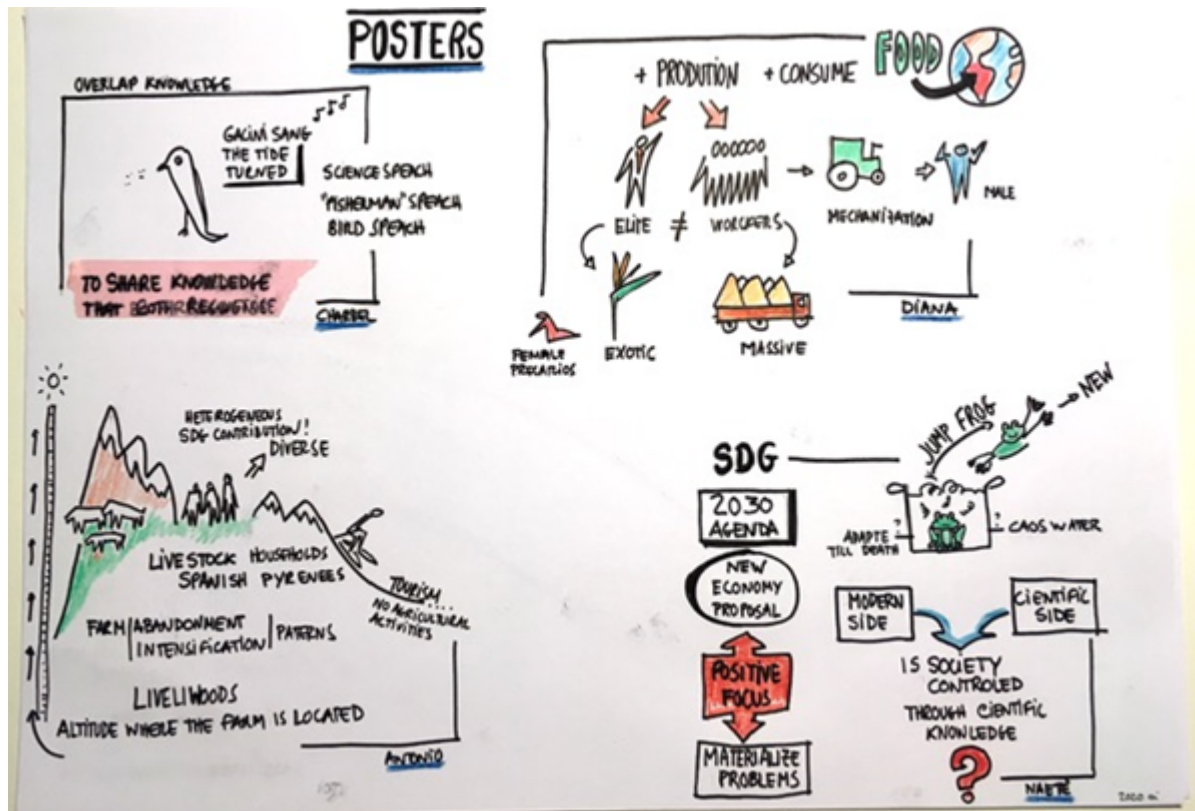
(Online)

**Sustainable development,  
complexity and change:  
thinking and practices for the  
SDG and other objectives**

Coord: Rita Campos and Ana Teixeira de Melo (CES-UC),  
Philip Garnett (UoYorK) and Leo Caves (Ind Res)

14 - 18 / 12 / 2020

11:00 am - 6:00 pm (GMT)



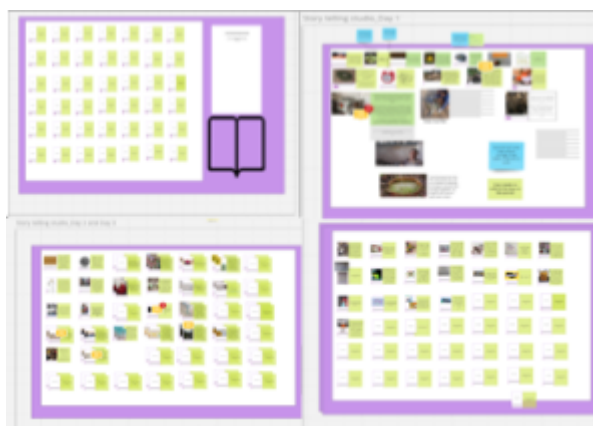
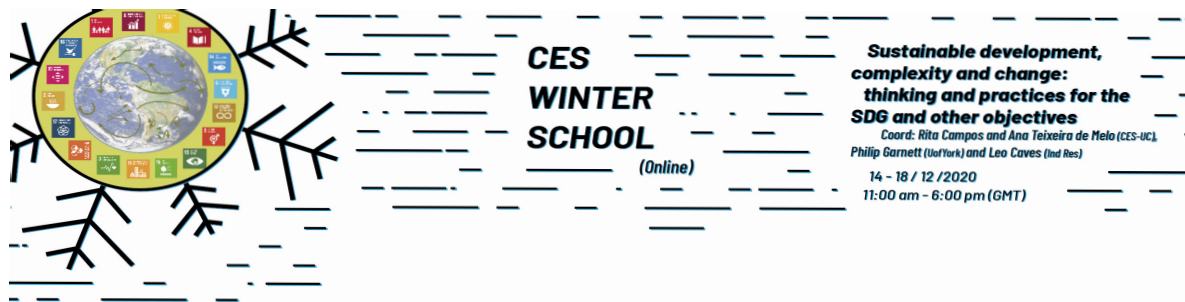
**Figure 19. Artist representation of the poster presentations and its themes and discussion (Drawing authored by Daniela Barros)**

### *Creative narratives for change and the story-telling studios*

Creative narratives were daily sessions of collective work called “Building narratives for changes”. These moments allowed the participants to reflect on the topics under discussion in the School by creating or integrating short stories that could support, enact, inspire or guide change and that could be communicated to others. Participants were invited to build small narratives using a combination of words and images. These sessions were usually divided in two main moments: an individual reflective and creative moment dedicated to the building of a narrative, from a keyword and a key image, and a collective moment for sharing and commenting on these individual constructions, exploring patterns that connected them.

The School began with one Story-telling studio which was replicated to accommodate activities of the different days (Figure 20). The Studio contained sections where participants were invited to leave a word, an image and a mini-narrative.



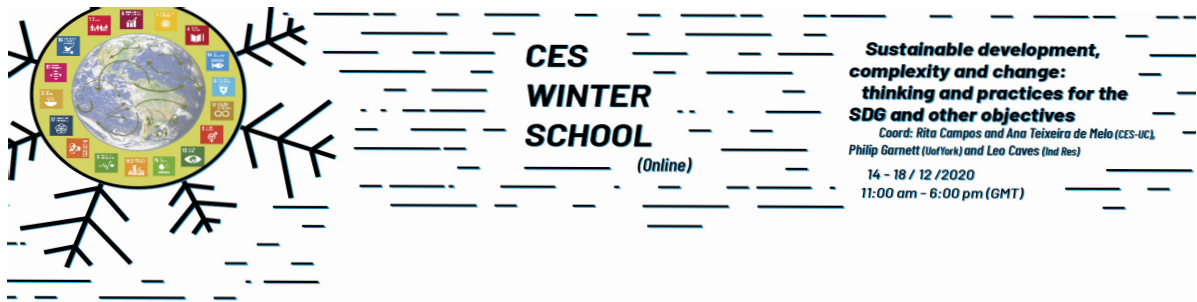


**Figure 20. Zoomed out snapshot of telling studios from first zero (top-right) to fourth day (bottom-right)**

The exercises were very productive and allowed for the construction of 52 mini narratives. On the last day, the Relatoscope method used for the general integrative discussion (described below) was also used to explore relations between the micro-narratives and to find emergent patterns (as shown in Figure 21). Some of the work produced in the craft studio (see the description of the craft work below) was also integrated in the construction of mini-narratives for change.

In the context of a collective exercise, the mini-narratives were compared and explored in relation to what differentiated and connected them and in search for underlying themes. They were organised by categories corresponding to the themes that connected them with some narratives belonging to more than one category. The following categories were created: Visions and goals; Wake-up call; Symbols; Worldviews; Inspirational cases; Practical challenges; Methodological challenges; Processes; Processes: levels and inter-levels; Education; Practices; Practices old-new.

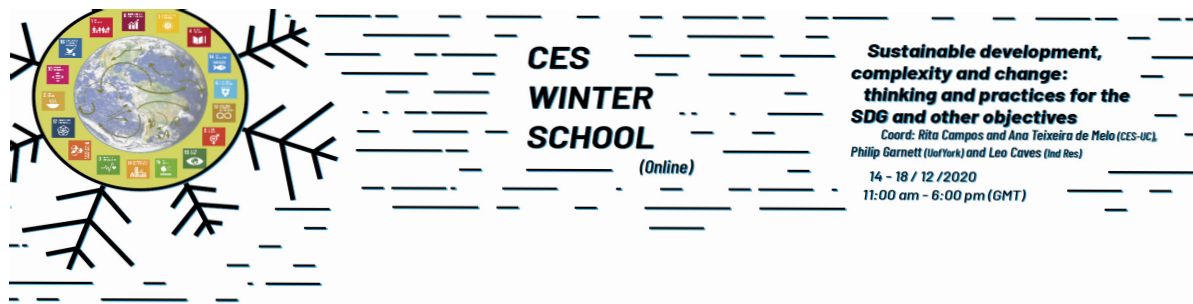
This reflexive and circular methodological approach created several opportunities for interaction and integration of ideas, knowledge, practices and experiences, feeding and being fed by the discussions held in the different sessions of the School.



**Figure 21. The final relational configuration of the narratives for change clustered by underlying themes**

*Creative Craftwork and the Crafts Studio*

Another category of sessions for creative collective work was based on creative craftwork. The crafts studio was a space where participants uploaded photos of their craftworks and comments (Figure 22). As with the mini-narrative work, also for the craftwork additional spaces were created during the School to accommodate all the creative work produced on these dedicated moments.



**Figure 22. Zoomed out snapshot of the craft studios**

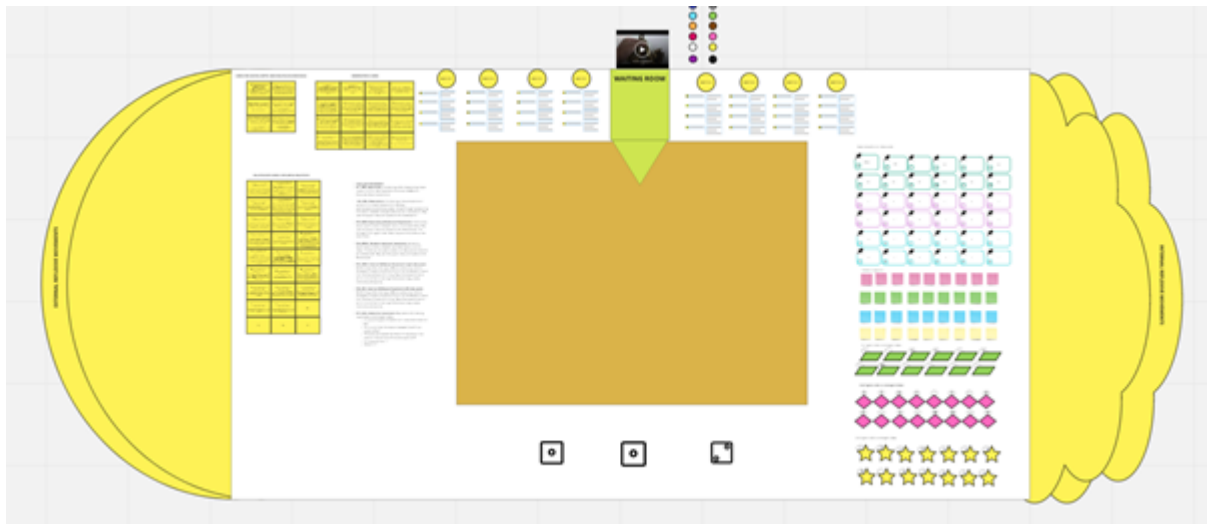
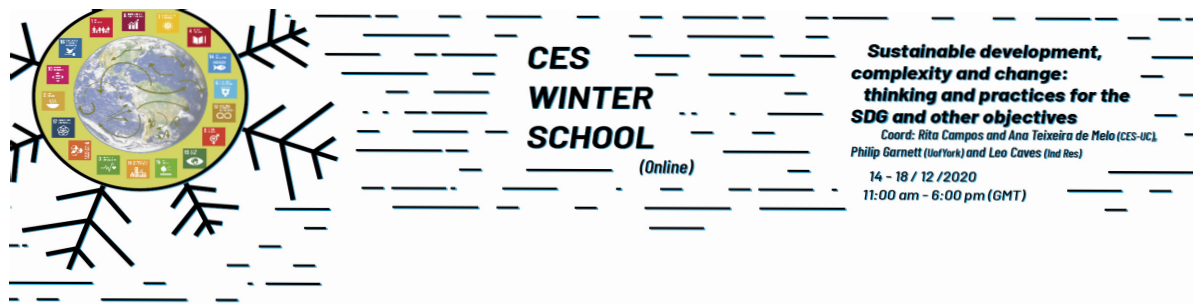
As a requirement to participate in the School, participants were requested to have a working kit with materials such as white and colour paper, sellotape, scissor, glue, colour pen or crayons, plasticine, pieces of cloth or journals and magazines for paper cuttings.

During the creative craftwork sessions, participants were asked to explore ideas and their resonances and reactions to the different inputs and discussions held during previous activities and to express their ideas creatively using some type of craft or artistic expression. The products were then photographed and the photos were uploaded onto the Crafts Studio. The last part of the sessions included a 'show-and-tell' where each participant presented their work and explained its meaning.

Different types of works were produced from drawings, collages, mobiles, paper constructions, plasticine constructions, window painting, crochet works, photography, mixed-methods constructions. Selected works were then transported into a Storytelling Relatoscope studio, created for the purpose during the School in order to support a final integration exercises of the narratives created (as described before).

### *The Integrative Discussions in the Relatoscope Studio*

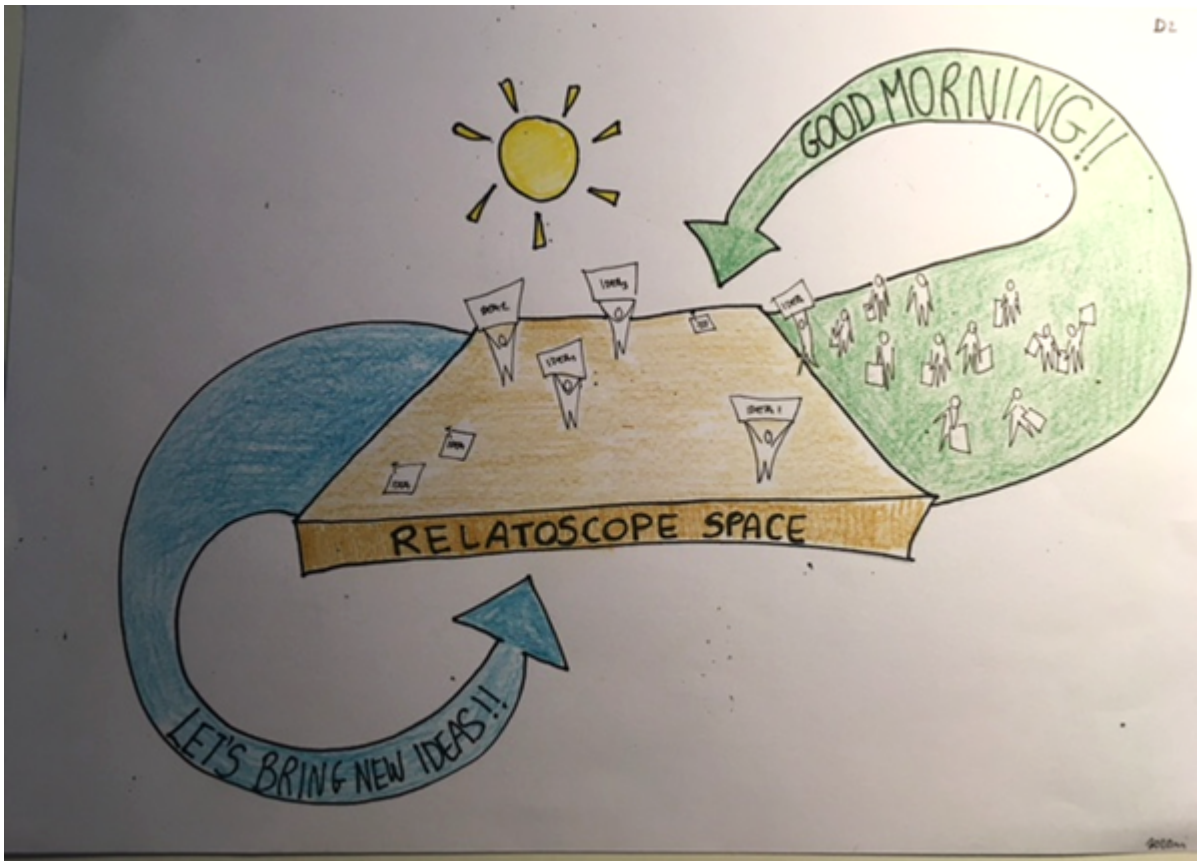
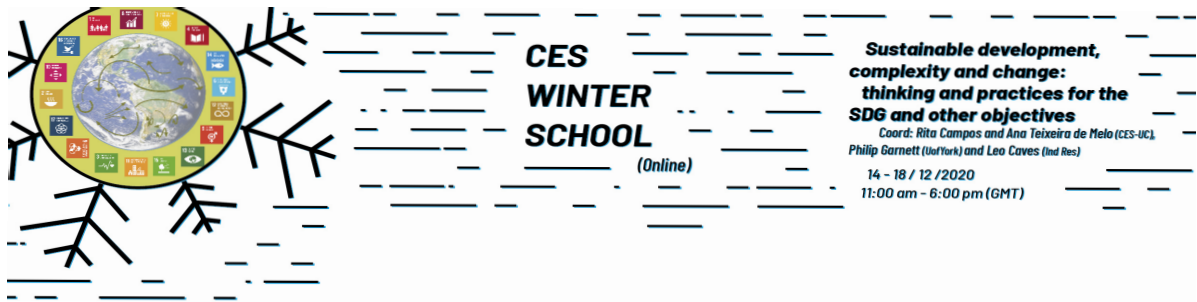
The Relatoscope studio constituted a space for the practice of relational thinking working with all the ideas and constructions of the School, supporting integration and facilitating the emergence of new insights and ideas through the exploration of different types of relations between the different ideas, perspectives and constructions selected by the participants from the different ideas. The School started with one studio, dedicated to a final integrative discussion moment (Figure 23). As the School unfolded and the creative work led to the production of a wide number of mini-narratives, an additional Relatoscope was added to Miro (as described above). They were used both to support the general integration of ideas and to support the story-telling exercise.



**Figure 23. The blank Relatoscope space at Day 0**

Participants would bring to the discussion base selected from the previous activities or their reflections, resonances and reactions to them. Contributions left on the questionnaires were also added to this studio and integrated in the relational experience.

The Relatoscop method used in these moments was an adaptation of a set of proposals described elsewhere (Melo, 2020; Melo & Caves, 2020). It is designed to facilitate emergence of ideas, namely from interdisciplinary debates and allows to visually track the collective thinking trajectories and to integrate and further relate their emergent outcomes. It is a method for exploring, in non-linear ways, different types of relations between different base ideas or concepts. This dynamic is represented in Figure 24.



**Figure 24. Artist representation of the Relatoscope overall dynamics and its role in the School (Drawing authored by Daniela Barros)**

The Relatoscope method comprehends a protocol where participants could perform a variety of thinking movements on the board from pinning a base idea, to intentionally exploring relations (with or without the help of support cards), to randomly explore relations and to perform an abductive or integrative movement. Ideas resulting from the exploration of relations between two or more base relate are expressed in posts-it and become new base ideas to be further related with others.

As relations are related to each other, higher order ideas emerge which are marked on the board using different shapes. The board supports a visual inspection of the relational movements which guides the activity in supporting a check that all ideas are connected and related to each other and that recursive movements are performed.

Figures 25 and 26 give an overview of the discussions held during these moments. Images of the final boards showing the integration of ideas can be found in Melo and Campos (2021).

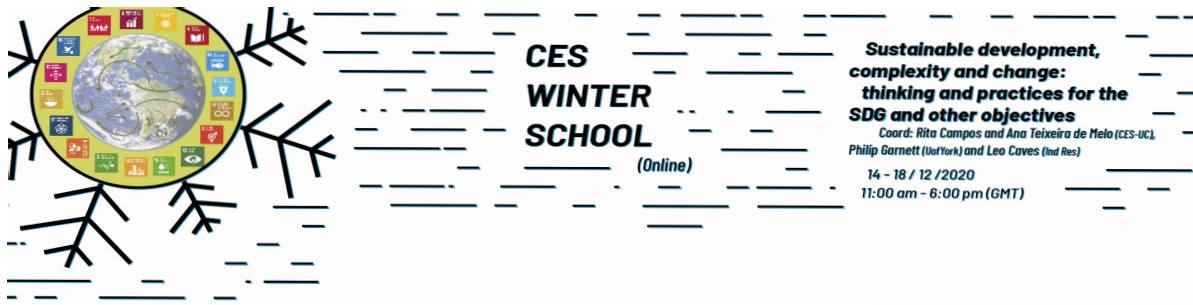


Figure 25. Artist representation of some Relatoscope sessions discussions on Day 2 (Drawing authored by Daniela Barros)

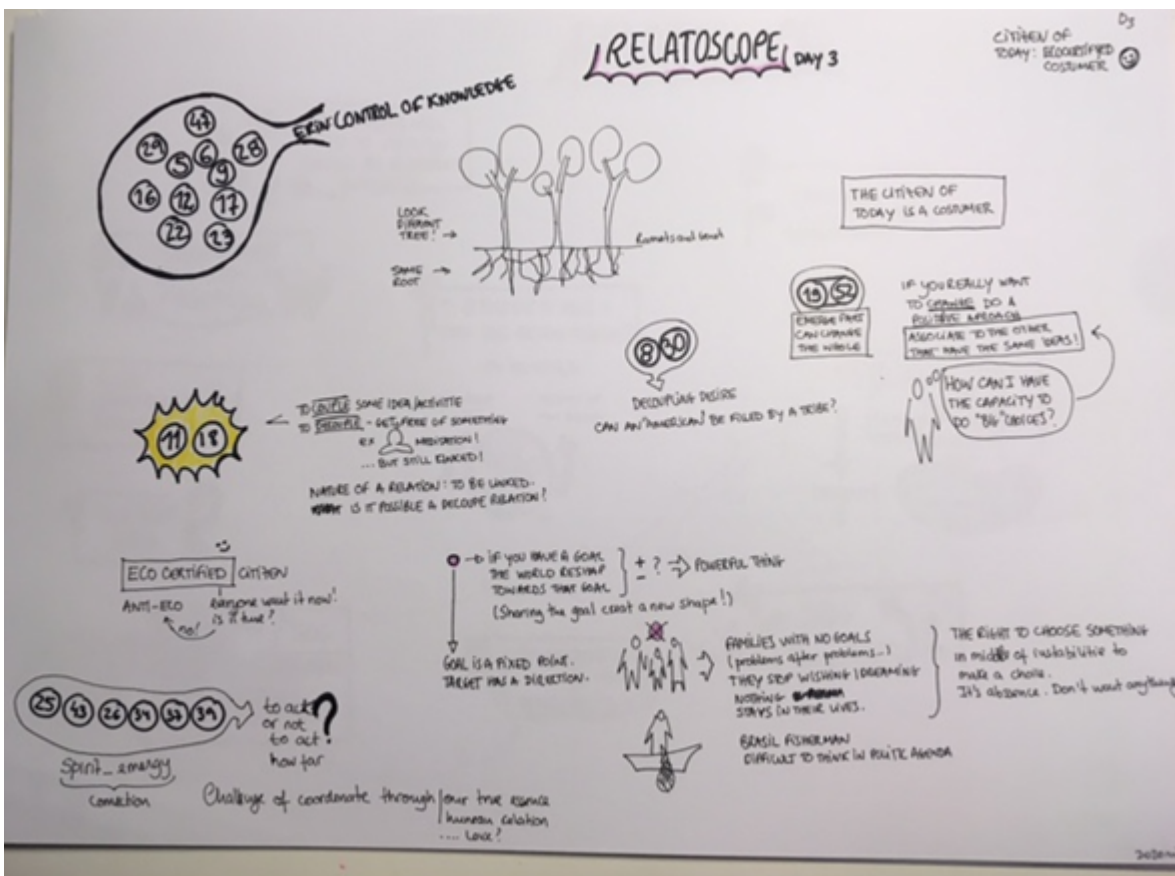
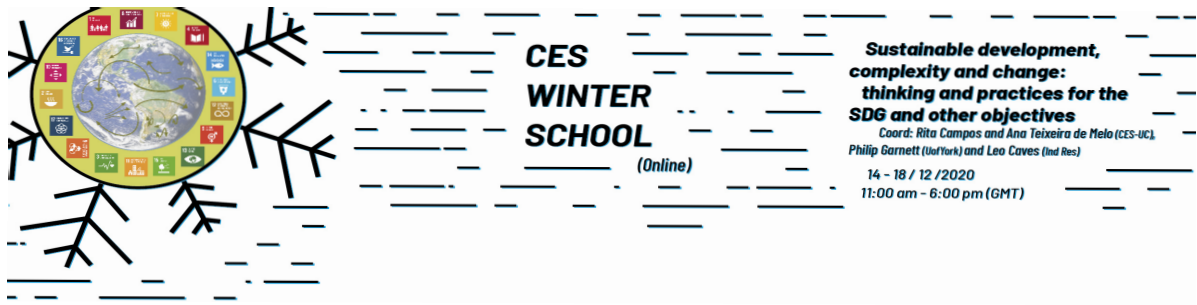


Figure 26. Artist representation of some Relatoscope sessions discussions on Day 3 (Drawing authored by Daniela Barros)

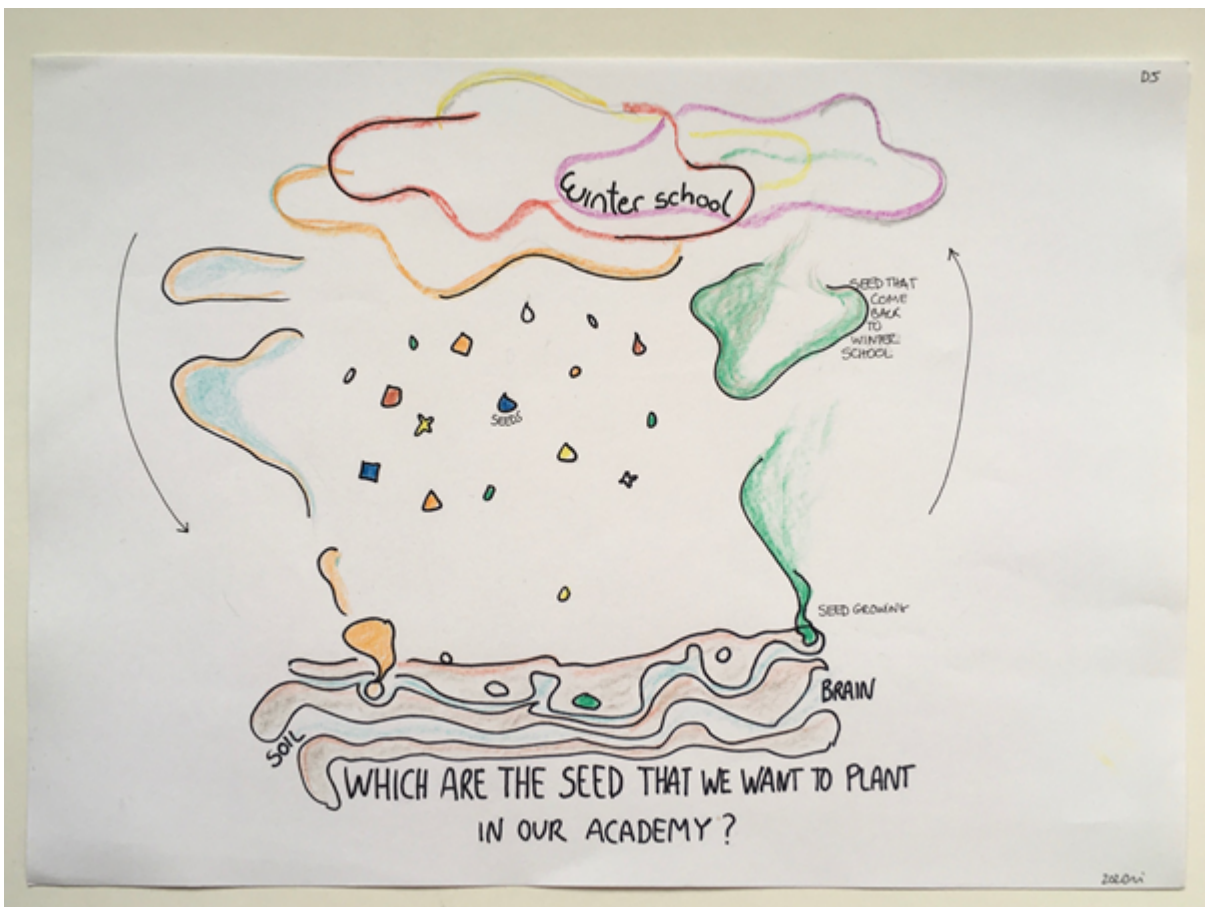
### Graphic reporting and the Artist Studio

The resident artist Daniela Barros was invited to do the graphic recording of the School. Her daily works were exhibited and available for comments in a dedicated space - the Artist Studio - and were presented in a final session. Daniela also helped to facilitate the last integrative discussion aimed at the construction of a Visual Manifesto, visually representing some of the integrative ideas discussed (Figures 27 to 30). However, this manifesto was not terminated as the group concluded it needed more time to deepen the integration of ideas and to decide on core themes to convey in it. It was



agreed that the work produced could be continued in follow-up activities and the artists' recording served a visual memory of the School.

At the final session Daniela offered the group a plan for a new 'building' for the School (Figure 31).



**Figure 27. Artist representation of exploratory final Integrative Ideas (Drawing authored by Daniela Barros)**



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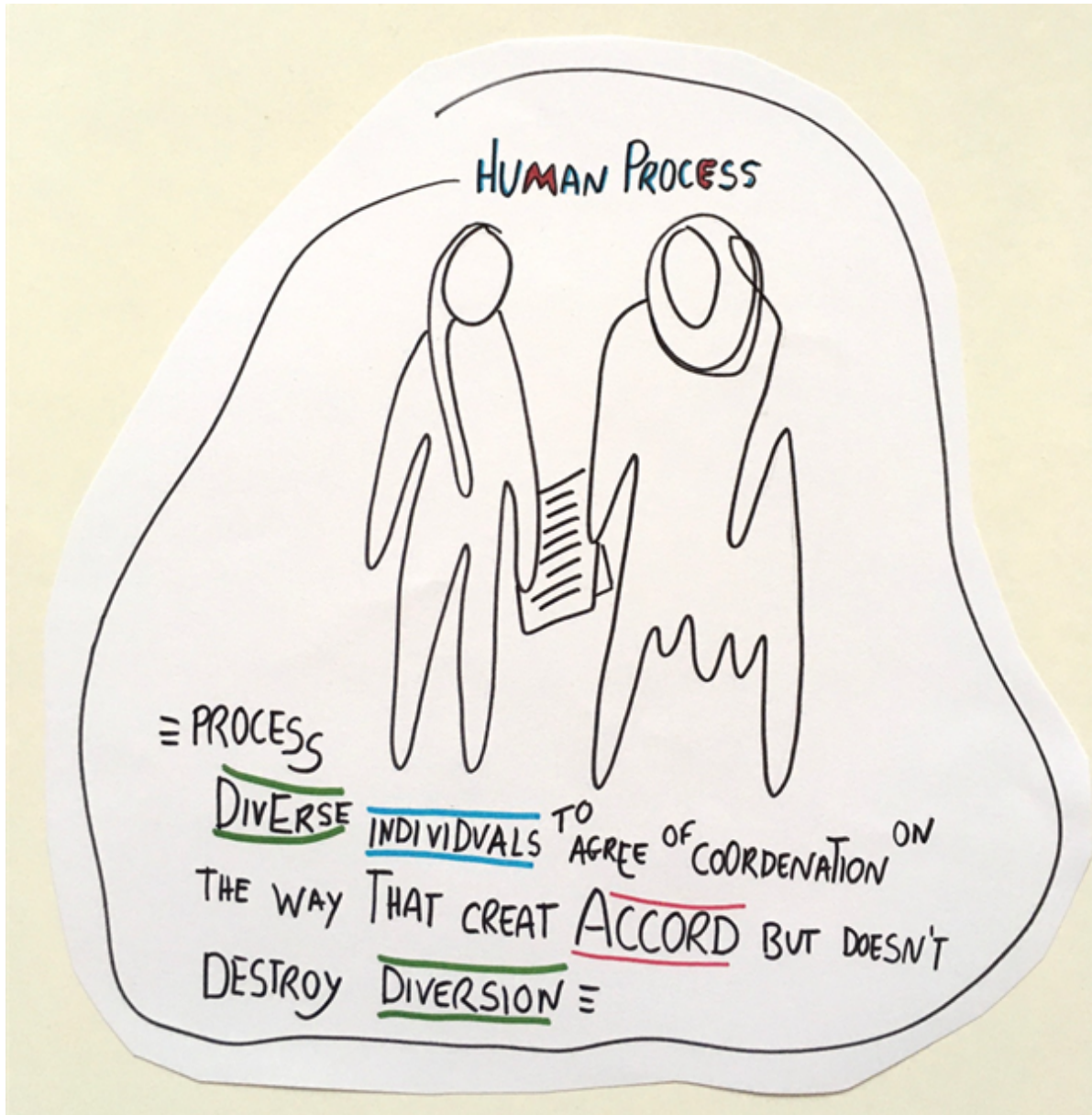



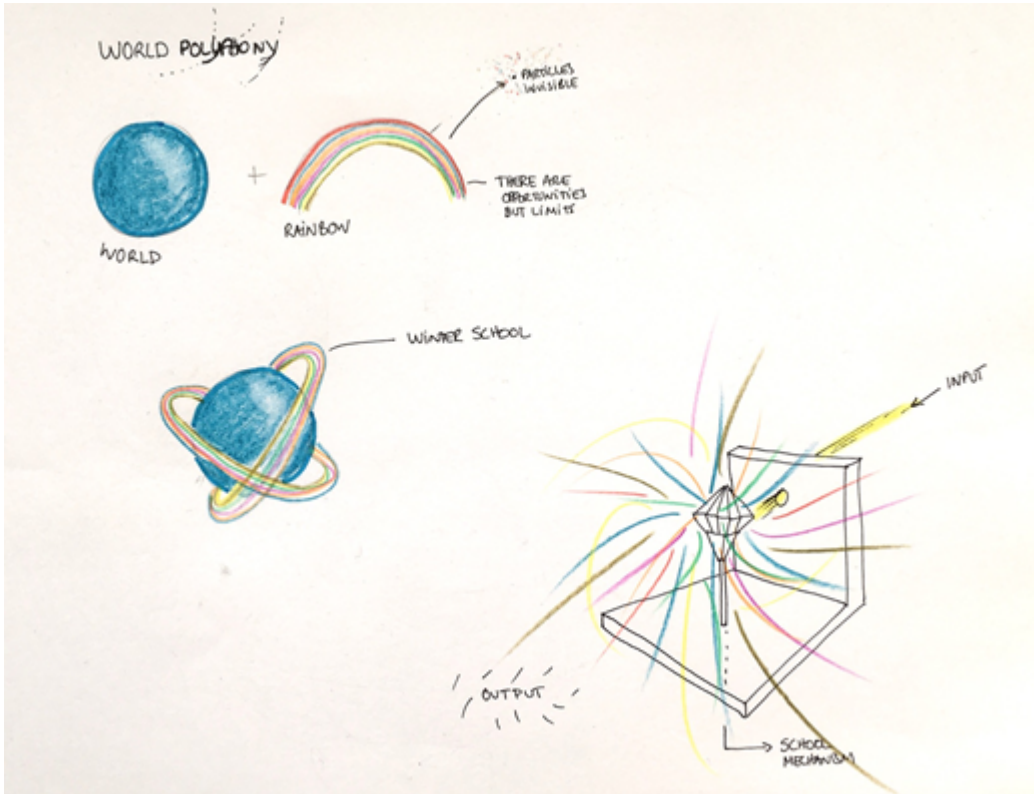
Figure 28. Artist representation of exploratory final Integrative Ideas (Drawing authored by Daniela Barros)






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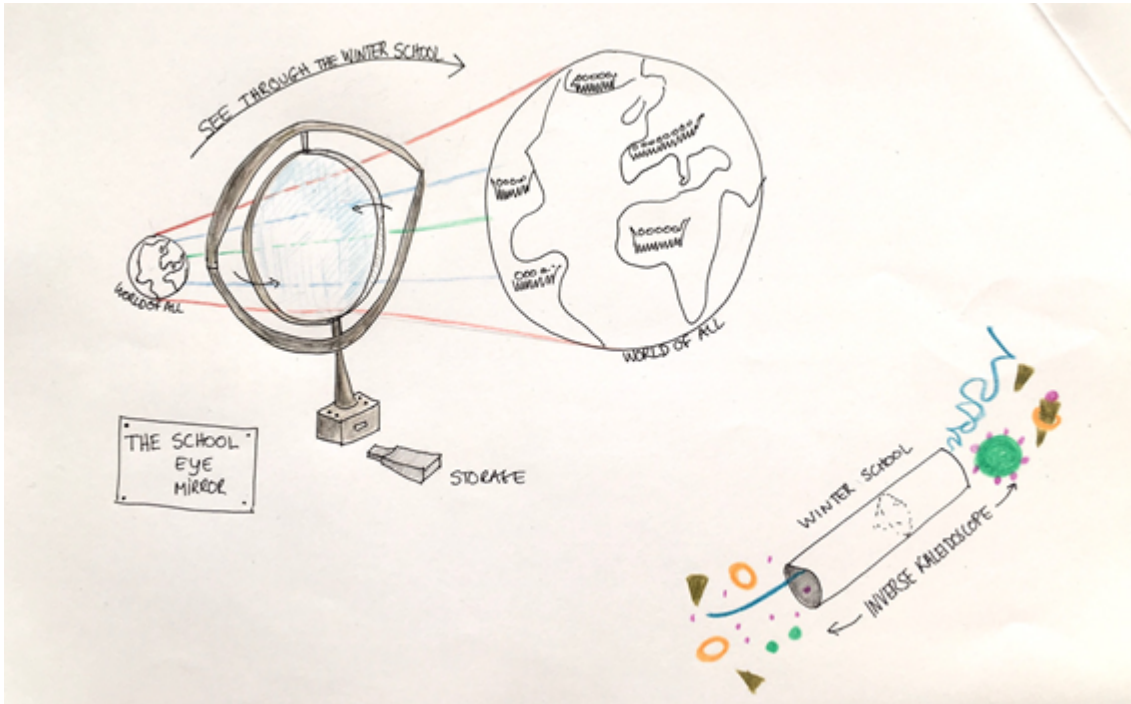


**Figure 29. Artist representation of exploratory final Integrative Ideas (Drawing authored by Daniela Barros)**

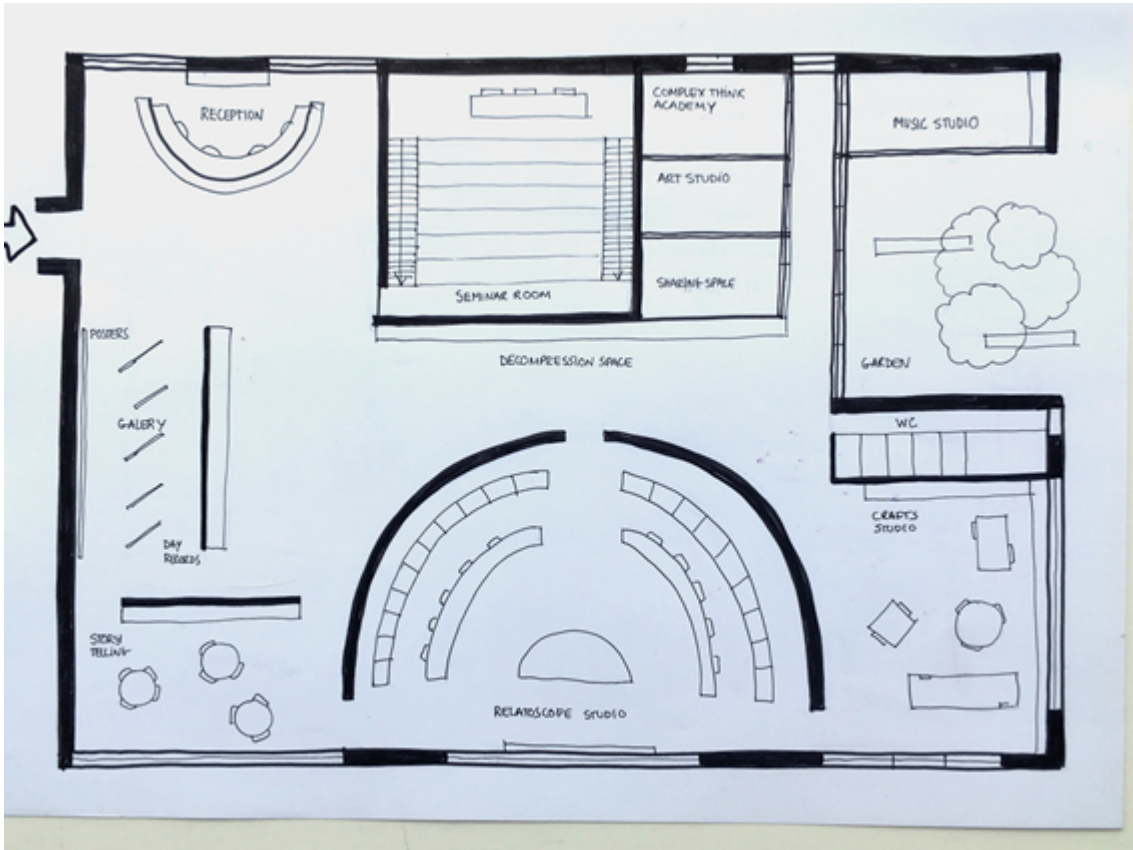
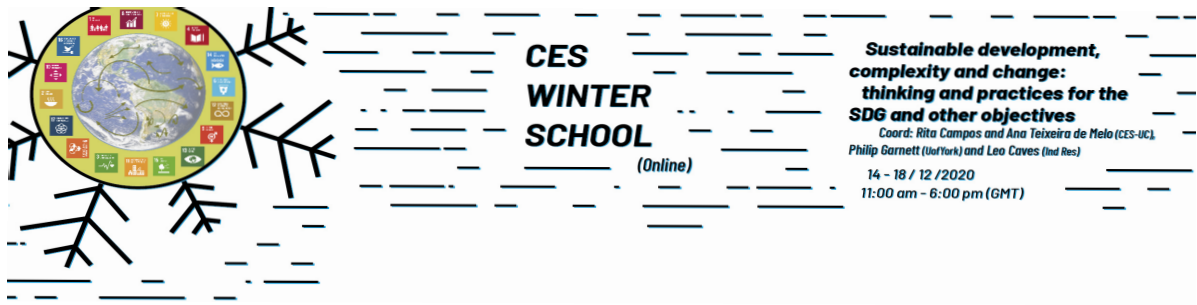


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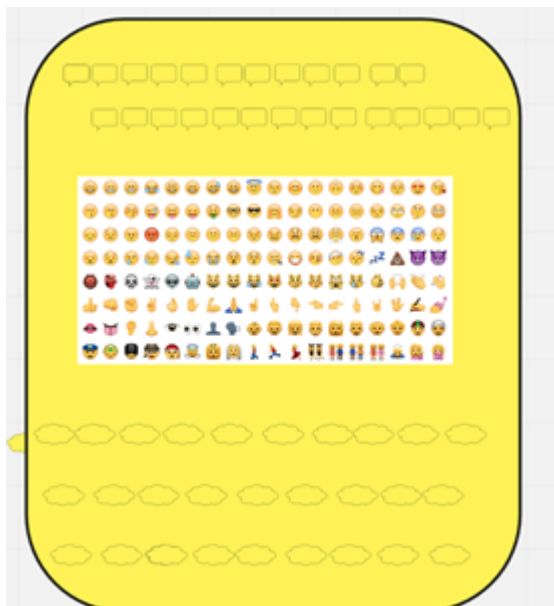
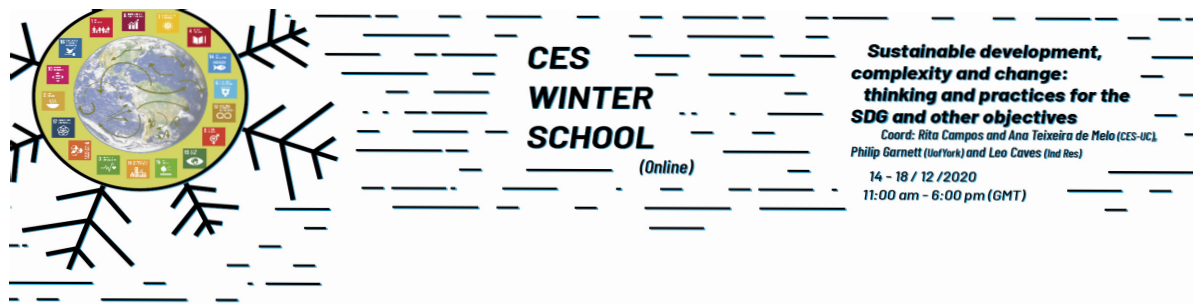
**Figure 30. Artist representation of exploratory final Integrative Ideas (Drawing authored by Daniela Barros)**



**Figure 31. Artist plan for the construction of a new Building for the School (Drawing authored by Daniela Barros)**

*The Decompression Chambers*

The decompression chambers were spaces destined to collect participant’s thoughts, reactions, experiences and their evaluations by the end of each day. For this, the space had emojis and speech balloons (Figure 32). This was an optional space but was frequently used by the participants throughout the duration of the School to leave messages of appreciation for the daily work and their overall feelings about the School.



**Figure 32. Example of a decompression chamber in the beginning of the School**

## **EVALUATION METHODS**

### **Data collection methods**

Both quantitative and qualitative data were collected primarily through an online evaluation form with a section responding in a Likert Scale of 5 points (1- Very unsatisfied/Not interested/Not recommend; 5- Completely satisfied/Very much interested/Highly recommend) and a set of open-ended questions. Both the facilitators and the participants were asked to fill the form at the end of the School. Four facilitators and 12 participants responded to the questionnaire. Qualitative data also included the participant’s feedback about the School and the sessions provided both in the Notes on Miro and on the Decompression Chambers of the last two days of the School.

### **Data analysis**

Quantitative data was treated considering the distribution and frequency of responses. The qualitative data analysis is reported in (Melo & Campos, 2021). In this report only information pertaining to the participants and facilitator’s suggestions to other editions of the School are reported.



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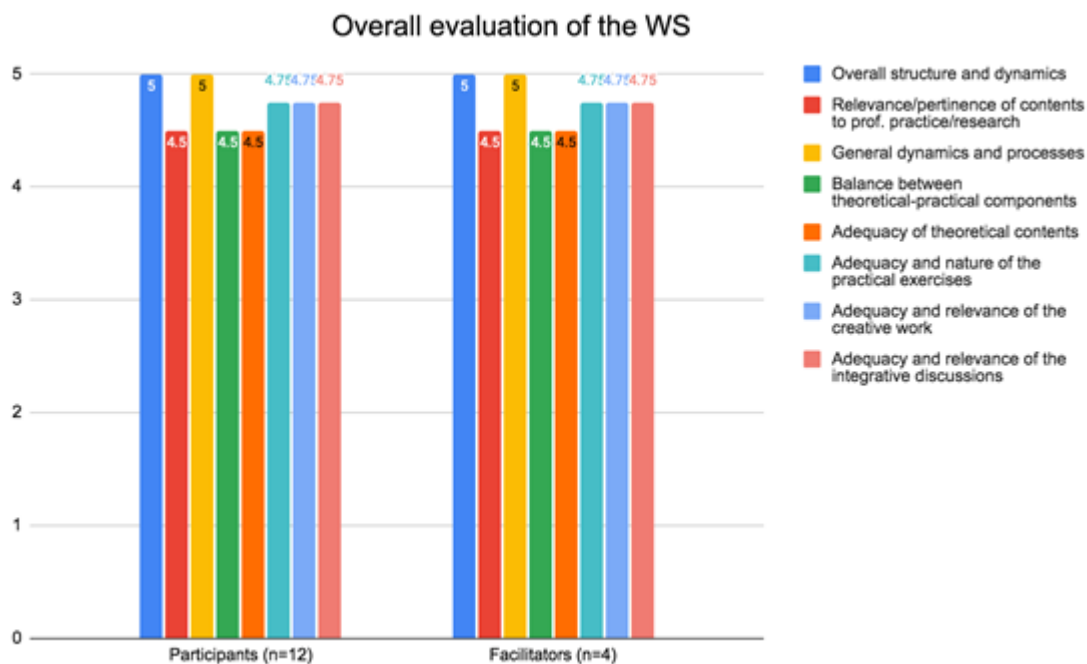
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## QUANTITATIVE EVALUATION RESULTS SUMMARY

This section reports the quantitative evaluation of the School that was analysed, taking the total of 16 responses given in the online evaluation form.

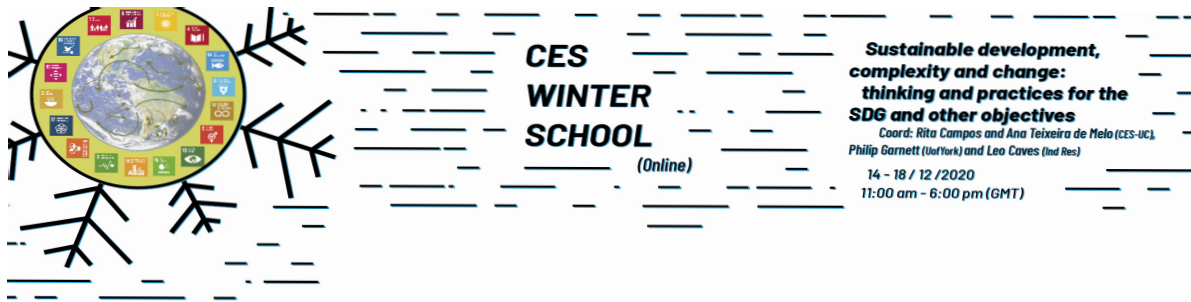
Images 1, 2 and 3 present the average ratings for each evaluation dimension collected from the completed forms, organised in three categories: the overall evaluation of the School; the evaluation of the processes of participation in the School; the evaluation of the impact of the School.

### Image 1. Overall evaluation of the School



The overall structure and dynamics of the School was highly evaluated: 75% of the respondents affirmed to be very much satisfied and 25% quite satisfied. Most of them (81.3%) also considered the School to be very much relevant for their professional practice or research and only 18.8 % considered it to be somehow relevant.

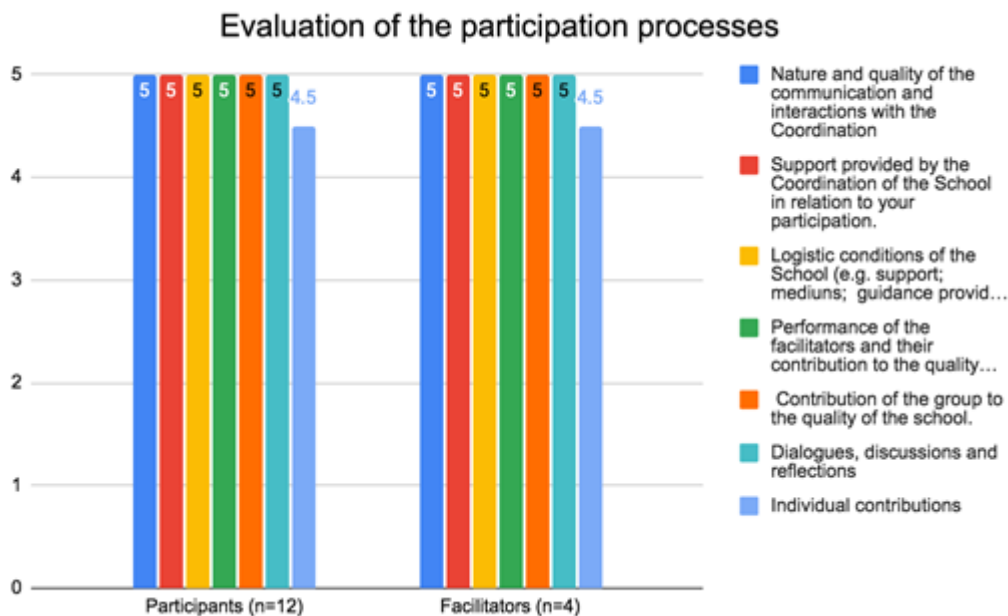
In terms of the general dynamics and processes, again the majority of the respondents (81.3%) were very much satisfied, while 12.5% were quite satisfied and 6.3% were somehow satisfied. Most respondents were also very much satisfied (81.3%), quite satisfied (12.5%) or more or less satisfied



(6.3%) with the adequacy of the theoretical concepts while most were also very much satisfied (62.5%) or quite satisfied (37.5%) with the balance between the theoretical and the practical components.

Regarding the adequacy and nature of the practical exercises, most respondents were very much satisfied (75%), somehow satisfied (18.8%) or more or less satisfied (6.3%). The creative work was met with very positive evaluations with most respondents being either very much satisfied (75%) or quite satisfied (25%). Finally, in relation to the satisfaction with the integrative activities most respondents were very much satisfied and (68.8%) or quite satisfied (51.3%).

**Image 2. Evaluation of the participation processes throughout the School**



The participation processes were all very highly rated. On average respondents were very much satisfied with most dimensions under evaluation including: the nature and quality of the communication and interactions with the Coordination of the School, and the support provided by it; the logistic conditions of the School, the performance of the facilitators and their contributions as well as the contributions to the group and the nature of the dialogues, discussions and reflections.

The quality and communication with the Coordination of the School and the support provided by them was met with very high satisfaction from all respondents (100%).



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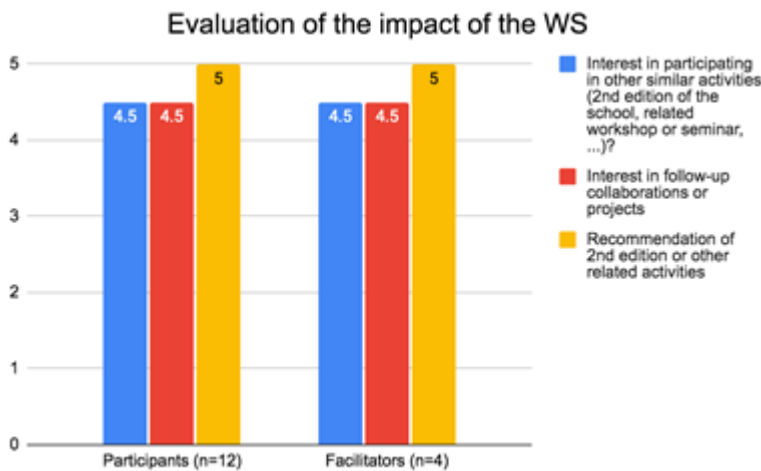
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The evaluation of the logistic conditions of the School showed some more variation, with 87.6% of the respondents being very much satisfied, 6.3% being quite satisfied and 6.3 % more or less satisfied.

The performance of the facilitators was, in general, evaluated with very much satisfaction (81.3%) or quite satisfaction (18.8%). Similar results were found for the evaluation of the contributions of the group where 87.5% showed very much satisfaction and 12.5% quite a lot of satisfaction. Similarly, most respondents were very much (81.3%) or quite satisfied (18.8%) satisfied with the quality of the dialogues, discussions and reflections on the School.

The satisfaction with the individual contributions was the lowest-rated dimension but nevertheless rated at 4.5, indicating that most respondents felt at least quite satisfied: half were quite satisfied (50%) while others were either very much satisfied (31.3%) or more or less satisfied (18.8%).

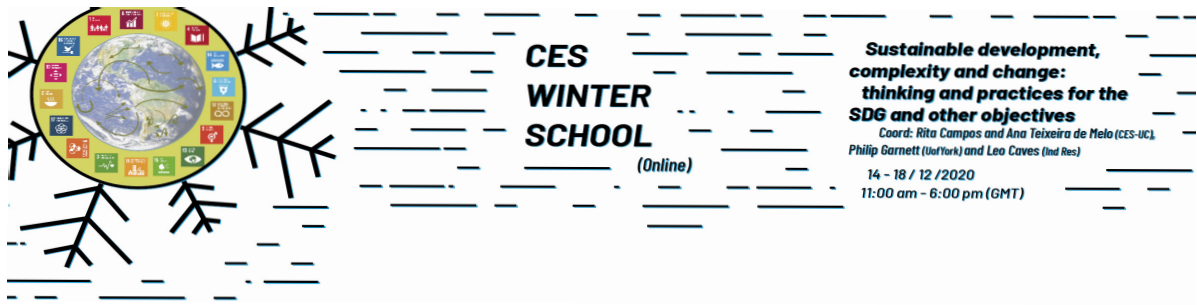
**Image 3. Evaluation of the impact of the School**



In relation to the impact of the School the majority of the respondents (81.3%) were very much interested in participating in similar activities, while a few (18.8%) were quite interested. Most respondents were also very much (75%) or quite (25%) willing to engage in follow-up projects or collaborations. Finally all respondents would recommend a second edition of the School or other related activities.

**DISCUSSION**

Overall the School was successful in achieving its aims. Both the organisation of the School and the processes of participation were highly rated by the participants and the facilitators.



The results point to the fact that the School generated opportunities for transformative learning, for the emergence of deep personal reflections and for collective and shared constructions of new and emergent ideas. The methodology was clearly highlighted as a distinctive feature of the School and associated with the unique experiences it afforded (more details on this can be found in (Melo & Campos, 2021). The virtual mode of engagement was prepared and shaped by the methodology and allowed for unique outcomes and experiences to emerge. The care and attention placed on the design of the methodology and the different spaces and activities were clearly justified and fulfilled its objectives.

Physical and face-to-face meetings present advantages. Nevertheless, it is worth highlighting how the detailed planning of the methodology allowed for very rich, productive and complex experiences, marked by the emergence of a unique, higher-order, collective environment, impacting on the individuals and on their (increased) capacity to make meaningful contributions. It is also worth highlighting the congruence between the methodology and some of the key theoretical contributions guiding and inspiring this School, namely in relation to the role of Complex Thinking (Melo, 2020b).

While the virtual experience has some downsides, such as increased demandingness in terms of effort, it clearly allowed the possibility of engaging a very diverse group from all over the world, which, otherwise, would have not participated in the School.

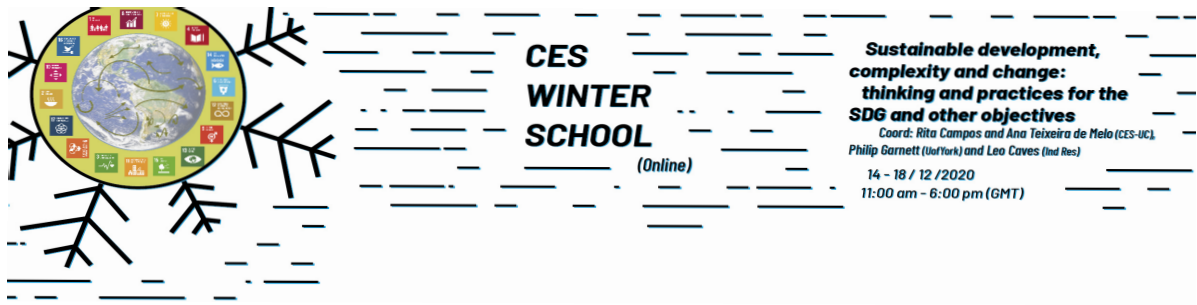
## **FUTURE DIRECTIONS AND SUGGESTIONS**

A set of suggestions was collected from the participants and facilitator's responses to a corresponding section in the online evaluation form. Reflecting on what went well and what could have been done differently, and also paying attention to the suggestions and reflections shared by the participants, the Coordination team is working on a new School proposal - a second edition of this School - that already integrates some changes in its design. Below we present the suggestions left in the form and how they are being considered in the general planned structure and dynamics for the second edition of the School.

### *Preparatory readings*

As a way of addressing constraints related to the multidisciplinary nature of the group, respondents suggest that preliminary readings on the topics be provided before the beginning of the School. For





the second edition, facilitators will be invited to share at least one recommended text related to their interventions (that will focus on specific topics; see next suggestion).

### *Question driven*

Following a suggestion of making the School more question-driven, namely by the participant's interrogations, doubts and questions and personal quests to which theoretical inputs would follow, the second edition will have the theoretical-like sessions organized around key-challenges/themes. This strategy will allow for more directed and focused interventions from both the facilitators and participants, both during the sessions and the follow activities. Also, the underlying methodology for these theoretical-like sessions is a flexible and integrative one, inviting the facilitators to adapt their talks and reflections to the group's main questions. To do so, all facilitators are asked to attend at least the integrative discussion previous to their intervention.

### *Added time for mutual knowledge*

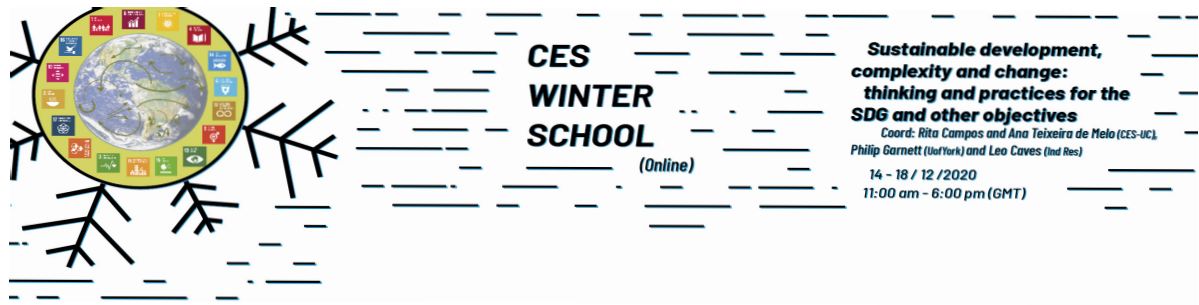
One suggestion was related to having more time allocated to activities promoting mutual knowledge. The Coordination team acknowledges the importance of this, and a new space will be created to allow participants to use it to share their work - papers, posters, videos, books, or any other material they wish to share.

### *Personal and collective goal-setting*

Participants suggest setting personal and collective goal setting at the beginning of the School. To address this, a specific session was created on the first day of the School. This session will allow the group to set the grounds for the School, sharing experiences, and building shared visions and purposes.

### *Event in Portuguese and/or simultaneous translation*

Participants suggested that events held in Portuguese, for Portuguese and Spanish speaking participants, could be organized. Also, that simultaneous translation could be used. While the Coordination team acknowledges that language can be a barrier to a more effective engagement and participation, it will not be possible to incorporate these suggestions in the second edition of the School that will again have English as the official language. We will, nevertheless, be willing to mediate some participation in Portuguese or Spanish.



### *Stronger action-research and practice focus as starting point*

A stronger action-research and practice focus at the start of the School was suggested. To address that, the second edition of the School will have an extra session to set the grounds of the School and an extra space to share participants' work (see above). Also, the facilitation team will be expanded to include colleagues from both a more theoretical and a more practical background. This will help to equilibrate the theoretical and conceptual dimensions with examples of field work experiences.

### *Include space for sharing publications and outputs*

Participants suggest including a zone in Miro for the sharing of participants' publications and outputs. This would allow for better mutual knowledge and enhance opportunities for future collaborations. This space was added during the School, and is also predicted for its second edition (see above).

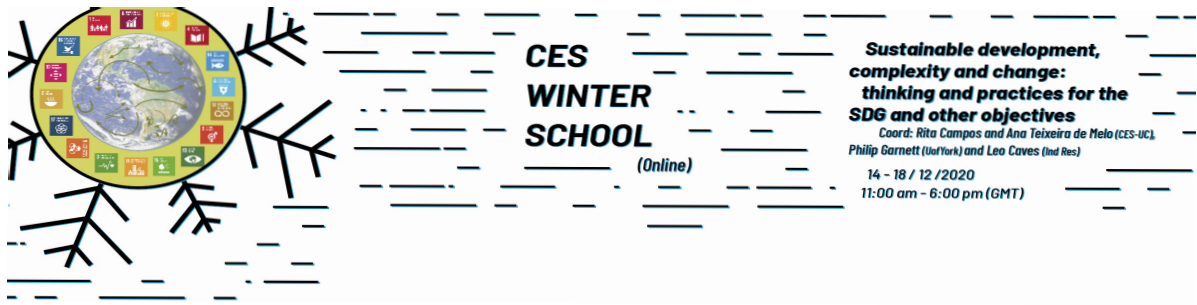
### *School more dispersed in time*

Participants suggest that the School becomes more dispersed in time, with sessions apart, even if longer overall. The high diversity of topics covered and facilitating strategies used created a space for immersive and intensive work. While this was highly evaluated by both participants and facilitators, it also led to the production of many outputs that needed more time for in-depth reflection and work. As such, the second edition will incorporate this suggestion in two ways: it will have a weekend in between, before its ending, and will have an extra, optional, day with an open programme, to be defined by the participants and facilitators willing to use that extra time. Also, and importantly, a follow-up workshop was scheduled with the facilitators and participants from this School, so that the group can meet again and decide together what outputs from the School will be further explored and how.

### *More time for final integrative and collective construction activities*

Allowing more time towards the end of the School for integrative and constructive work, so that there could be more time for emergence to take place and for the group to engage in final comments and discussions of their perceptions was suggested. This suggestion relates to the one above, and is being addressed with the follow-up workshop and the extra day in the second edition.

### *Follow-up activities*



There were a number of follow-up activities, some related to the continuation of their internal collaboration (keeping shared virtual spaces to exchange information and projects), follow-up meetings with more targeted topics eventually preceding another School suggested. Other suggestions related to more external activities and included activities focused on the SDG's including leaders of social movements and traditional communities, the production of materials (e.g. podcasts, manifesto, videos, articles) as well as dissemination of these outputs to other groups and forums. These suggestions will be discussed in the scheduled follow-up workshop with the group.

## REFERENCES

- Melo, A. T. (2020a). Complex relational thinking method. A proposal for facilitating the emergence and integration of ideas in debates, round-table discussions and dialogical meetings. [Method] V3.EN.2020. Doi: 10.13140/RG.2.2.17185.02408
- Melo, A. T. & Campos, R. (2021). Online Group Facilitation guided by Complex Thinking: An evaluation case study of an Interdisciplinary Advanced Training School. *Manuscript submitted to publication.*
- Melo, A. T. (2020b). Performing Complexity: Building Foundations for the Practice of Complex Thinking. In *SpringerBriefs in Complexity*. <https://doi.org/10.1007/978-3-030-46245-1>
- Melo, A. T. & Caves, L. S. (2020). Relational thinking for emergence: A methodology for guided discussions. V1.2019. Doi:10.13140/RG.2.2.30469.70881.