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# CO-CREATION ART TO CATALYSE COMPETENCIES FOR A SUSTAINABILITY TRANSITION

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## Introduction

A growing number of academic researchers are eagerly looking to identify an essence of inter-connecting competency needs that are required by the nature and implementation of sustainable development. As one example, *Issues and Trends in Education for Sustainable Development* (Leicht et al., 2018), published by UNESCO in 2018, posits a type of future citizenship: ‘sustainability citizenship’. It outlines competency needs according to which individuals might better learn to understand the world’s complex nature and adapt to the uncertainty and social changes that are occurring at an increasing pace (Wals, 2015; Wals & Lenglet, 2016). The most significant competency articulated here is expressly related to being able to operate within heterogenic groups, an ability that Rychen (2003) in *Key Competencies for a Successful Life and a Well-Functioning Society* also defines as essential for the global future.

Such ideologies concerning a sustainable future involve recognising and understanding relationships, the ability to understand and evaluate various future outlooks, the competency to understand the norms and values that underlie one’s actions, and the collective ability to develop and implement innovations. Professor of Higher Education Pedagogy at the University of Vechta Germany Marco Rieckman also compiles key competencies that are particularly important for achieving the ideology and actions of sustainable development. According to Rieckman, the education competencies must:

enable and empower individuals to reflect on their own actions by taking into account their current and future social, cultural, economic and environmental impacts from both a local and a global perspective. [This] requires individuals to act in complex situations in a sustainable manner – to explore new ideas and approaches and participate in socio-political processes, with the objective of moving their societies progressively towards sustainable development.

(Rieckman, 2018, pp. 44–45)

Seen from this perspective, the need for innovative, transformative solutions is obvious. The research and debates concerning the development of circular economies address many key

challenges related to the need for systemic change, the reexamining of linear growth thinking, consideration of the interconnectedness of materials, issues of energy and biodiversity, and an ongoing assessment of the overall impacts of climate change. Alongside these, the need has emerged for critical research into decision-making, cultural change, ethics and social justice, and for alternative and more creative visions of the circular economy (Frienant et al., 2020, p. 4).

Unfortunately, the term ‘circular economy’ (CE) is often used to refer merely to a type of enhanced waste recycling (e.g., Ghisellini et al., 2016) and if CE is defined mainly as a technical problem, as measurements and indicators, it may not motivate civil society to build constructive ways to create a less biosphere-destroying future (Kovacic et al., 2019). It is a question of comprehensive change. According to a newly released IPCC report (IPCC 2022), the environmental catastrophe caused by climate change will threaten all of humanity in immediate decades, sooner than previously predicted. Despite knowing this, challenges are faced by science-based approaches in working to mobilise change at individual, societal, governmental, and global levels. The IPCC 2022 report attempts to present a compelling case in describing the consequences of climate change, but it seems that scientific reports alone are not capable of instigating the substantive change required to achieve a sustainable future (Maggs & Robinson, 2020, p. 13).

At the same time, the situation may not be as bleak as the IPCC 2022 report suggests. If we consider that the technical solutions are known for tackling the challenges of climate change and development of CEs, what we urgently need is a new way of thinking that breaks away from old, entrenched mindsets, which are at the core of our current problems. Put in other words, we must answer how one might turn the 3,675-page IPCC 2022 report into something that speaks to people’s hearts rather than their intellects.

Transitions to CEs and sustainable development require humanity to let go of the rigid thinking of the past that has been primarily characterised by selfish interests. We must adopt a creative re-imagining process, which will generate a social perspective on a global scale. We must imagine the world in a different way (e.g., Lehtimäki & Pöyhönen, 2020). The traditional ‘business as usual’ mindset is not likely to yield radical or creative ways to move forward in ever-changing environmental circumstances. Here, we propose that creative activity in the arts, when used in collaborative forums, can provide effective models for such shifts in perspective (Figure 22.1).

The recent trend away from a policy-maker form of agency in the arts to a global changemaker agency can be seen in numerous art-driven projects worldwide. An example of this is UNESCO’s global effort to support artists and ensure access to culture in ResiliArt and Art of Change 21, a collective project positively contributing to addressing climate change. The utilisation of arts-based collaboration concepts is also possible in academic contexts, such as the Finnish multidisciplinary research project CICAT2025. A critical part of this project has been the review of visual catalysts as an essential factor toward a sustainable CE (CICAT2025).

### **The catalytic potential of art**

Art can be a catalyst. It can inspire reflection on the individual’s role in local and global communities, often calling into question society’s norms and practices. As described in the open call for participants in the Visual Catalysts workshop in Berlin (Figure 22.2), art can connect people so that new perspectives are learned from others. By strengthening strategic competencies that support sustainability thinking, art can play a significant role in creating change.

Artistic methods provide tools that are both intellectually and emotionally engaging. The development of collaborative interaction strategies within groups has the potential to address the challenges of animating change and support necessary shifts in thinking. Active participation in



Figure 22.1 Co-creation in process, Visual Catalysts workshop, University of Europe for Applied Sciences, Berlin 2019.

Source: The authors.

creative experiences may inspire individual motivation and reveal alternative approaches to issues. Working collaboratively creates spaces in which empathy and understanding of others can occur.

In business, art has traditionally been utilised as decoration and entertainment to create a pleasant environment. But in fact, during the past 20 years, different types of organisations have

*... ... Visual representations are a powerful global language and through a process of international co-creation, artists can be future change makers, creating new visual catalysts that can speak across cultures. Artistic methods can make us see things from a new angle. Our way as consumers needs to be seen from fresh perspectives in order to move towards sustainability.*

*Creativity happens on the edges of different cultures. Every individual's choices have an effect. Personality and locality matters. In the global sphere, respecting local perspectives is the nucleus of change for a sustainable future. ... ..*

Figure 22.2 The open call for a Visual Catalysts workshop INTAC–VICAT in Berlin, 2019.

begun giving attention to the impact of art as a noteworthy enabler of change. Although it is difficult to measure the effects of art projects realised within organisations, educators Berthoin Antall and Strauß (2013, p. 3) have discussed research in order to identify a multitude of categories of art intervention impacts. Art has strategic importance. For example, artworks in the workspace impact the development of organisations, not only with the improved general work atmosphere, but also in an expansion of social relationships and networks that increase team behaviour and a sense of belonging. There is improved productivity and an increase in business operations when art is included in the environment.

More than this, in her well-known book *Artful Creation* (Darsø, 2004), educationalist Lotte Darsø points out the instrumental opportunities of art. Nonverbal communication, improvisation, and the production of co-created art may result in meaningful shared experiences in a work community, and in this way, creative exploration becomes a strategic method for empowering and including workers within change. Artistic methods of expression combine with art's ability to communicate on an emotional level.

Creative art experiences can reshape the thinking and perspectives of individuals – in their reflective capacity and in their ability to process positive and negative emotions. There is personal growth and the development of self-confidence, encouraging the learning of new skills and methods and, thus, the strengthening of courage and risk-taking abilities. In this manner, working methods drawn from art-based strategies can help to build more comprehensive or alternative perspectives and support innovative capacity even when change and uncertainty prevail. The ability to engage with a diversity of inputs or to work in collaboration can lead to qualitative changes in both process and outcomes.

Artistic methods change the internal dynamics of organisations, communities, and businesses by challenging previous ways of doing things and creating alternative ways of thinking. Such activities can break away from analytical and structural approaches to problem-solving, allowing for playful, imaginative, and open-ended visualisations through speculative exploration and emotional expression, which are based on images or gesture rather than facts and figures. Broader forms of thinking can result, rather than technical and goal-focused statements.

Crucially, according to Berthoin Antall and Strauß (2013), art's activating potential is enabled by a shifting of established operating models, creating interspaces between formal structures and informal relationships. In this, collaboration can be key. When singular projects develop into joint community-based operations, organisations accumulate added potential, strengthening their effectiveness. New perspectives and ways of operating energise the experience of both organisations and individuals, thus activating change. Art education benefits from a shift away from a perspective that concentrates on the production of works for a materialistic society to one that collaborates in envisioning change.

When applied to thinking about sustainability and CE, such shifts in methods of working with groups can support the achievement of significant competencies (Rieckman, 2018, pp. 44–45): collective and cross-cultural thinking; emotional and empathetic awareness; critical ability to explore new perspectives. Such a role for art as a catalyser can be harnessed for enabling strategic sustainability change and since the most important future sustainability competence is precisely related to working with heterogeneous groups (Rychen, 2003), it is of particular interest to examine how artistic collaboration has pedagogical potential to shift perspectives and build a sense of global solidarity, togetherness, and willingness to participate.

When working across communities, visual tools are useful where cross linguistic or literacy barriers occur, which is why image-based models of community action and education have developed in such contexts (Barndt, 2001). The use of photography to examine the world can provide

groups with an open-ended format that thrives through individual agency and collaboration between facilitators and participants. Participatory methods like Creative Voice (Rivera et al., 2018) and PhotoVoice (Bennett & Dearden, 2013) have long used photography to give people a communal and democratic means of critical exploration of their worlds.

In the context of sustainability challenges, where the sharing of ideas that lead to options and solutions is so important, artists can model a circular and iterative process, inspired by others and visualising concepts into novel forms that contain elements of surprise. Surprise, in turn, makes us aware of our ignorance (Gross, 2010) and awakens curiosity for change. By sparking new perspectives and emotions, art and creative visions can lead to new thinking, changes in social behaviour, and real action. These are needed for catalysing our transition to a sustainable economy (e.g., Aarikka-Stenroos, 2020; Jokinen, 2020; Ladkin, 2020; Suonpää, 2020; Taylor, 2020).

### **Co-creating art and competencies through international collaboration**

This article asks, What is a potential role of an international collaborative art process in catalyzing competencies for sustainable CE? There is great motivation within the arts and culture fields for participation in positive steps towards more sustainable futures, but how does one effectively harness the energies, inspiration, and deeply affective aspects of the cultural, visual, and aesthetic realms, in order to catalyse substantive transitions in global thinking?

Today, photography is no longer a specialist activity. Most people take and share photographs and videos, providing an accessible means of communicating ideas and experiences. In a rapidly changing world, it is apparent that traditional ways of imparting knowledge cannot be relied on as before and the use of visual tools can be productive in many more learning contexts than simply the training of artists. We do know that visual images communicate and that we connect with them on an emotional level. They provoke critical thinking and provide a common arena where diverse cultures can cross-fertilise (Bertaux & Skeirik, 2018). Today, emotionally charged images and videos can spread rapidly on social media, and thus are capable of sparking an unprecedented wave of change, particularly when they speak to our humanity. For these reasons, art and creative activities can be a space where hope is embodied, where artists and audiences can face questions while envisioning and proposing solutions. Art allows for inclusion of non-experts in considering and imagining the future.

Here, we review the operations of the International Art Collaborations (INTAC) network of international institutions of higher education and the resulting change-enabling potential that they exemplify. INTAC was developed in the 2010 by Professor Peter Sramek (OCADU, Canada) and Head of Fine Art, Dr. Juha Suonpää (TAMK, Finland) to provide art students with international creative competence using a newly available combination of online tools provided by the internet (INTACnet, 2018). Early beginnings evolved into a cyclical program with a history that spans over a decade (see [Figure 22.3](#)).

Our case study reviews the INTAC network's circular pedagogic collaboration process and outlines some of the outputs, taking an ethnographic starting point (cf. Gordon et al., 2001.). We approach the artistic impact of the collaborative process primarily from an aesthetic perspective, paying attention to how art can inspire and engage new ways of thinking (cf. Sköldbberg et al., 2015). Our research material is mainly based on the participatory observations of this article's authors over a period of 12 years and review of a range of INTAC-produced works, through description and content analysis, particularly referring to photographic and video-based art projects. Alongside the conclusions drawn from the art projects themselves, it is important to review

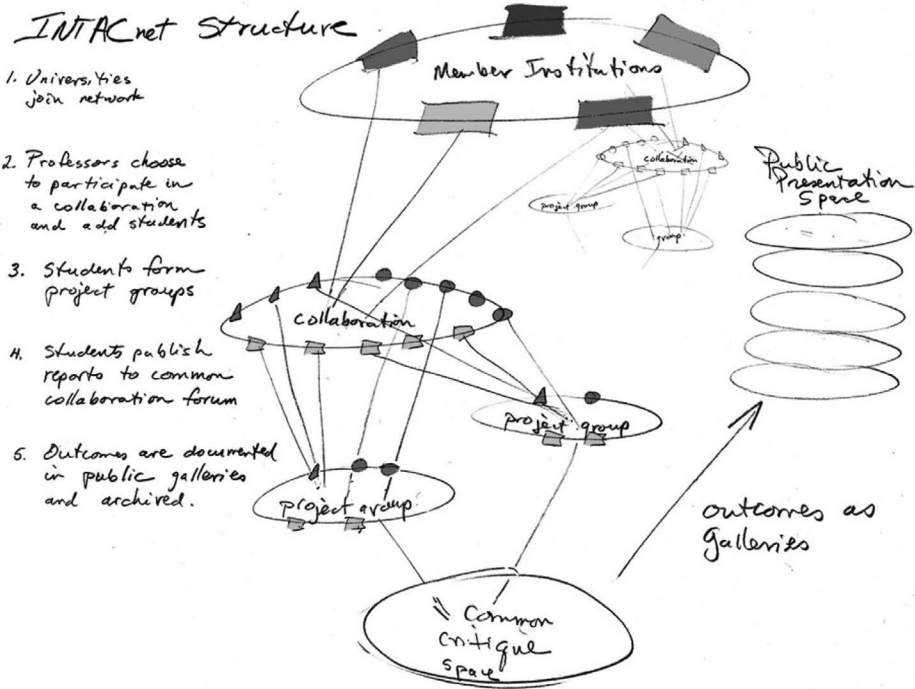


Figure 22.3 The INTAC network structure.

Source: The authors.

INTAC’s ongoing experimental, and new ideology-enabling, collaboration model, which potentially catalyses and develops the formation of sustainability competencies.

Initially, INTAC’s goal was to create interactions for many students without the need for international travel, realising that such travel was limited to only a few. Very quickly, it was discovered that structuring projects as collaborations between international partners greatly increased the level of communication and meaningful exchange. With over a decade of iterations, INTAC has honed its process, created annual exhibitions and publications, and adopted new virtual work environments as these have become available. The current use of a team workspace for online communication (Slack) and a whiteboard platform for the development process (Miro), as seen in Figure 22.4, is proving to be effective precisely because it is so visually based. Facilitation strategies are key, and these components are provided by a team of individual professors from up to seven universities each year, currently from four continents, including Europe, Asia, and North and South America.

Belief in global experiential learning, an open-ended operating objective, collaboration of international institutions and cross-cultural interaction have produced continuity for the INTAC network. As a result of this collaboration, various printed and virtual exhibition publications, documented co-creation art projects and works, websites, blog posts, printed-on-demand (POD) publications, and workshop materials have accumulated (Figure 22.5).

The INTAC model dissolves the traditional university canon of teaching individualistic creation of art and enables the formation of a mediating mechanism, which activates collaboration based on co-creation. The learning from others, seeking of new perspectives and understandings through art, critical questioning of prevailing standards and values, and seeking solutions

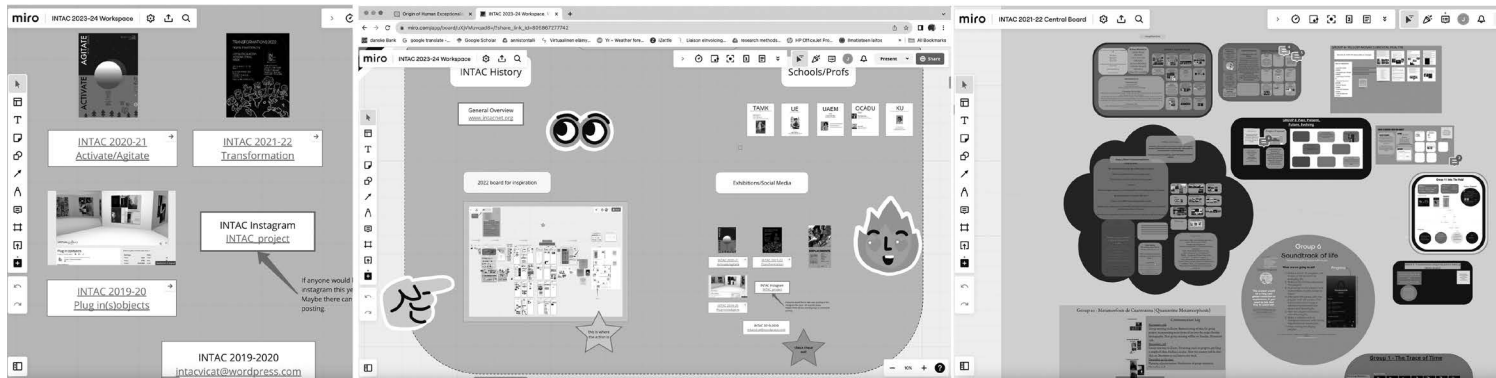


Figure 22.4 Screenshot from Miro whiteboard platform.

Source: The authors.





Figure 22.5 Examples of INTAC exhibition catalogues.

Source: The authors.

to problems have all been an integral part of the operational idea behind the learning process. Activities follow general principles of collaboration where the inherent respect for students, and their active participation, plays a crucial role in creating human-centred meanings, shared value, technical solutions, ideas, and art products and services (cf. Degnegaard, 2014; Jensen & Krogh, 2017; Roberts 2004, p. 205). The INTAC structure can be considered as a catalyst of change (ref. Cabell & Valsiner, 2011, p. 7) as the collaborative experience creates an alternative to the teaching of 'business as usual = art as usual' forms of art and limits the entrenchment of such blinkered thinking. Instead, it leads to a competency toolkit that includes critical thinking, self-awareness, and integrated problem-solving.

Over the years, the INTAC network's operations have evolved into a diverse, circular, online collaboration model with a learning platform that includes an annual program of co-creation between partner universities as well as workshops and seminars, jam events and conferences. Among these, the Visual Catalyst (VICAT) workshops concerning visual catalysts and the intensive online INTAC Sustainability Jam have been platforms for the creative development of sustainability catalysts.

The Visual Catalysts intensive co-creation workshops have been in person and short term, each taking place over one week (INTAC-VICAT, 2019). Groups of students have visited a host university and formed project teams to imagine and undertake responses to the challenge of

how art can be harnessed to respond to climate change and sustainability issues. Each location presented its own particularities. With Finnish students visiting China (2019), Germany (2019), and Mexico (2021), the local participants were living in their own context of climate change. The recognition of differences, as well as similarities, between hosts and visitors helped to build knowledge, understanding, empathy, and a sense of global community.

The 2022 INTAC Sustainability Jam workshop (INTAC Jam, 2022), sponsored by OCADU's International Online Residency Experience initiative, took the VICAT program to a larger scale where the intensive workshop model was held online. This allowed for 65 students from 17 universities in 12 countries across five continents to spend nine days developing projects and presentations. The co-creation workshop asked students and teachers to imagine how art can play a role in moving the world towards more sustainable futures and to create projects on issues that concerned them. Due to the size of the group and the compressed timeframe, working groups were pre-organised by the facilitators, but the process maintained the core values of participant agency and team autonomy in coming to their choice of topic, research, creative mediums, and outcomes.

In their structure and methodologies, these various INTAC workshops provide insight into co-creative approaches that may be applied to diverse contexts and, especially, model their capacity for movement towards change.

### **Competencies for global collaboration and thinking**

Here, we shall review three main areas of competence identified in the UNESCO in 2018 publication on education for sustainable development and which are potentially produced by the art-based co-creation process exemplified by INTAC's operating model. Various examples of projects undertaken by student collaborators, including ones mentioned here, may be accessed through the INTAC network web portal (INTACnet, 2023).

In the case of INTAC, students from diverse language groups communicate and collaborate typically through exchange of photographs, drawings, videos, and music. The multidisciplinary co-creation process forces students to pay particular attention to social interaction. The ground rule of INTAC's process is to operate in multinational groups. This means that progressing with art projects requires, in principle, considering others' opinions and cross-cultural thinking so that thoughts and ideas lead to a joint completed project. When English is used as INTAC's main language, a communications challenge arises in the student groups between native English speakers and speakers of other languages. When analysing the art projects created by the student groups, attention turns to the special opportunity that visual tools, such as videos, photographs, or drawings, provided as a cross-linguistic working method. In the *Diverse Iridescence* art project (INTAC, 2015) concerning the symbolic meanings of colours, the student group studied the associations produced by colours with the help of photographs they had taken. This enabled cultural characteristics to be brought out despite language barriers.

Seen from a more documentary angle, an image is an efficient tool when seeking a common understanding of various phenomena. An example is the *Useless Objects* co-creation project (INTAC, 2017) concerning consumption and materialism (Figure 22.6). Students took photographs of objects that were no longer useful to them and compiled the individual photographs into a large banner symbolising consumption. Such co-created photo compilations work as both a socially inclusive methodology and a tool for presenting the ideas and discussions the group may have about an issue.

Multinational co-creation artworks are most often surprising and there have been many approaches to co-creating works that students have adopted over the years. Combining diverse ideas



Figure 22.6 Co-creation project *Useless Objects* from the exhibition *Turmoil*, at the Off Festival, Bratislava, Slovakia, 2017.

Source: The authors.

in a visual format catalyses alternative meanings. On the one hand, surprisingness produces new types of creative combinations of meaning, and on the other hand, there arise intentional ‘misunderstandings’, which are constructively and consciously utilised in art projects. For example, in the *RE* video production (INTAC, 2013), a student was shown a video clip made by a partner on which basis they shot a continuation clip they found suitable for it. The working method, based on the ‘exquisite corpse’ method, produced a chain of video clips. The final video production was a surprise for all, including the members of the group. Similar structured expressive innovations have been implemented with photography. *Overlap* (INTAC, 2014) had students send an image file to the members of the group to be further edited as they pleased, while for the *Film Exchange* project (INTAC, 2017), each student took photographs and sent the roll of film to another, who, in turn, used multiple exposure to add their own photographs to the same roll.

In the INTAC workshops focused on sustainability, the participants’ keen interest in issues of climate change, environmental and social justice, and other global challenges have meant that they embodied a constituency motivated to engage with ways to create change. By incorporating creative art methods in these programs, participants were prompted to harness the nonverbal impact and emotions that images can evoke along with critical thinking and reflection. Such exploration can shift the possible rigidity of logical discourse that can lock in attitudes and current ways of thinking. The visual process can empower and inspire, create hope, and expand the imagination.

Whereas most participants in the VICAT workshops were already using photography, video, and a broad range of other art media, the INTAC Sustainability Jam (INTAC Jam, 2022) included students from the performing arts, environmental studies, and media studies programs as a deliberate shift towards broadening into trans-disciplinary territory. The active participant response suggests these are effective methods for engaging constituencies beyond the arts, as well as blending groups of professionals from multiple fields or including non-experts in workshops. The benefits that could accrue from such creative exchanges appear to be exciting.

In crossing disciplines, an ability to view issues from a variety of perspectives can be enhanced, offering a blend that can be fact-based, inquisitive, flexible, intuitive, creative, and visionary. Connecting people using virtual platforms, both in real time and offline, allows for access to information across local, regional, and international spheres. In working together, the pieces of a complex global puzzle can be assembled, and this was seen in the projects undertaken, including those related to fast fashion, food production and deforestation, wildlife protection, and microplastics (INTAC Jam, 2022). With such workshops, one understands that there can be an expanding circle of learning outcomes: the individual participant, the teams, the workshop group, and those who form an audience and experience the resulting presentations.

As an example, one group researched images of oil and mining sites in their countries, placing markers on a virtual world map. Through the process of comparing situations, the group analysed how mining companies everywhere were not only taking resources but also ‘mining’ human lives through exploitation and environmental destruction. It represented a collective ‘aha’ moment for this working group as they merged data into the visual format of an interactive website, which could be publicly accessed.

### **Creating emotions, empathy, and self-awareness**

An ability to connect emotionally and to experience empathy are significant components of motivating action in response to global challenges, yet because individuals and communities may not be directly affected by any particular problem, many may have difficulty becoming emotionally

engaged (Geels, 2011). When the INTAC structure sets participants the tasks of identifying an issue, gathering information, and formulating how to contribute to a greater public awareness, these activities can both inform and animate participants and also lead to outcomes that are meant to affect a broader audience. Objectives can be to increase awareness of issues and to expand empathy for the depth of the challenge.

Throughout the INTAC iterations, we, as facilitators, have found that if workshop participants are asked to actively select issues that mean something to them and then form into small groups to tackle the task, emotional engagement follows. They, the participants themselves, get to decide what to communicate and how to do so. By working in diverse groups, the process brings in multiple perspectives from which everyone can learn. Knowledge of other realities, experiences, and worldviews can lead to the openness to difference required for reaching complex solutions. Working with art and visual media to create experimental works provides a provisional space where diversity of views can be accommodated, unlike position papers where hard-edged statements and opinions may be staked out. Through these creative experiences, workshop participants learn skills necessary for individual and collective change.

In relation to common artistic practice, INTAC's co-creation model breaks away from the stereotype of an artist genius independently creating their work. Getting to know each other and working together is concretised in the art projects as a dialogue of emotions leading to the presentation of emotions. In various photo series made by annual INTAC participants, such as *Bedroom Portraits* (INTAC, 2018), *Childhood Aspirations* (INTAC, 2015), and *What's in My Fridge?* (INTAC, 2020), students have shared concrete views of their everyday lives and revealed intimate moments, based on a developing trust within their groups. In the *Long Distance Relationships* (INTAC, 2020) project, the group members documented their personal online remote meetings with their beloved friends. In the individual screenshots making up the photo compilation, humane moments of encounters are revealed, while overall, a common feeling of connection is shared visually. The exhibited presentation challenges the viewer to interpret the photo montage from a humane perspective and, in our experience, catalyses the personal feelings into an experience of collective empathy in those who view it.

The emotional nature of such creative solutions becomes a social glue that combines sharing of both information and emotions through the interaction of the partner participants. INTAC's art projects include examples of how the art-making activities of a co-creation group enable a sense of connection to be formed between the project members. For example, in the *You and I Are* (INTAC, 2012) project, students shared selfie-type images of their lunches, trips, transport, and belongings. On the surface, such images simply presented facts and personal choices, but through this, the participants learned about each other's lives. The *You Are Here* (INTAC, 2012) project shared details about the students' habitats and, through this, participants could feel a connection. In the interactive *Altogether* (INTAC, 2013) project, with the help of video montage software, a person sitting in front of a computer blends into the recording of another person who has previously sat in the same place, figuratively stepping into another person's shoes.

The goal of the Visual Catalyst (VICAT) workshops has specifically been to address sustainability challenges and when the stated objective is to affect an external audience on an emotional level, the visual arts provide a powerful vehicle. Within the imaginative space of the arts, creators are free to move beyond the simply informational to engage people in an experience in creative ways – using juxtaposition, humour, surprise, or other art strategies, including site-specific public interventions. In VICAT Berlin (INTAC–VICAT, 2019), several groups made posters that were aimed to create audience empathy. To create awareness of food waste, photographs were taken of imperfectly formed vegetables and fruit posed in public spaces (Figure 22.7). Laughter and



Figure 22.7 Poster project *Ugly Food*. VICAT Berlin workshop.

Source: The authors.

sympathy resulted from the final posters of anthropomorphised produce requesting to be taken home. In another project, images of common personal clothing were labelled with data of the materials, origin, and the environmental damages caused in their making. The concept was that the average westerner would connect with the familiarity of the clothes but then be confronted with a more distant problem. This connection between personal and remote realities aimed to raise conflicting emotions that required some resolution. Both projects came from research into statistics about food waste and fast fashion, but the art-making process resulted in outputs for evoking felt responses in viewers and the poster format created materials that could easily be duplicated and distributed into public spaces to reach a broad audience.

### Catalysing critical thinking

From the participant perspective, the motivation in international co-creation centres on the participants' own social, cultural, and creative identities and their interest in communication and connection with each other. Observed activity is undertaken for social interaction, a gain in knowledge and experience, meaningful project activities, significant discussion and feedback, and tangible sharing of outcomes such as an exhibition or publication. This all suggests that co-creation will result in a level of self-recognition and ownership in the project outcomes and that participants will see themselves in relation to the problems they are investigating. New ways of thinking evolve through interactive experiences and hopefully the process is designed to address the challenges of working together in a globally distanced virtual arena.

Although digital virtual platforms are nowadays a natural part of students' everyday life and enable INTAC's cross-continental communications, many of INTAC's art projects bring out the

boundaries between direct physical interaction and the virtual experience. The cultural, social, and economic challenges and power structures of the online environment quite naturally arise in this international co-creation process.

Critical attention to the means of communication emerges in multinational co-creation projects, where visual language instead of written language becomes an effective tool for exchange. When the use of English language was very limited among the Chinese students during an INTAC workshop in Wuhan, China, in 2018, the group switched to communicating with each other on mobile phones using the exchange of photographs and emoji symbols. The result was experimental art video based on visual symbols and the use of sound, building a new kind of link across the hegemonic languages of English and Mandarin. Such direct experiences develop alternative ways of thinking critically about the challenges of global cooperation.

In the *Here We Are* (INTAC, 2011) art project implemented by a student group, the almighty status of the internet was broken down by combining photographs taken with an analogue camera and computer screenshots in a collage. In *CellulART* (INTAC, 2015), students examined contemporary shifts in visual culture by seeing if popular photo-editing tools of camera phones could produce meaningful artistic expression. Then, in 2016–2017, Canadian, Korean, Chinese, Spanish, and Italian students of the *Lost in Google Translation* art project (INTAC, 2017) challenged algorithm-produced communication by entering an English saying into Google Translate. At the end of the translation chain, the English phrase had transformed into an absurd English saying, ironically questioning the perceived almightiness of companies producing online services.

The use of a digital operating platform also considers materialism from a new perspective. The transport or delivery of large art pieces to international exhibitions is not possible on a student's shoestring budget; instead, the work must fit into a suitcase. The re-scaling of art-exhibiting practices in the INTAC process has catalysed a change that, on the one hand, limits the traditional established and material form of presentation and, on the other hand, guides art-based activities towards a more community-based direction. In another approach, it is possible to implement impressive pieces of art using small elements if each student provides their own smaller work as part of a larger entity. This emphasises everyone's importance as part of the whole. Collages consisting of artistic postcards created by students (e.g., *Desire*), collages of drawings (e.g., *Scars*) or a tapestry compiled of small pieces created by students from different countries (*Quilt Project*) are examples of impressive artworks that have been created as results of co-creation and collaboration (INTAC, 2017).

Co-creation also catalyses a change in which, after identifying existing facts, art-based thinking enables alternative activities at a conceptual level. The VICAT workshop in Mexico (INTAC–VICAT, 2020) utilised a three-step approach: facing the facts, seeing the possibilities, and sharing the possibilities. This three-step approach sought not only to map out the challenging current state of the environment, but also to look for promising art interventions outside the university. The art performances that resulted related to social justice and gender equality. These performances were eye-opening, for example, from the perspective of the Finnish students who are accustomed to a sense of security prevailing within Scandinavian democracy. A need for physical integrity and personal security emerged during the workshop as a critical societal prerequisite for sustainable development and the CE.

As previously described, the VICAT workshop held in Berlin (INTAC–VICAT, 2019) saw participants question first-world consumer standards that contribute greatly to waste, land contamination, and social injustices. In gathering available data from the internet, the participants formulated messages using critical skills, as well as their creative imaginations in designing posters for potential audiences.

Overall, the INTAC experience has shown that visual art can act as a language through a use of symbols and metaphors, while also doing much more than simply conveying pictorial content. Art photographs can overcome the weight and burden of realism and carry theory elegantly and eloquently. They can encourage embodied knowledge. In many cases, the visual bypasses the purely intellectual, leading instead to expressing what a particular experience is like, how people feel and think. This suggests that images can be more accessible than many forms of academic discourse (Weber, 2008, pp. 44–48). The many student co-creation projects continue to exemplify ways of developing awareness and pointing to ways to explore and communicate complex ideas.

### **Co-created cluster of sustainability competencies**

In this case study, we started by considering potential opportunities for art collaboration's catalysing competencies for a sustainable transition. In the various INTAC activities referenced here, we described how students were given responsibility for choosing an issue, making a proposal, and negotiating the group process; every step presented problems that needed solutions. In fact, throughout the annual eight-month INTAC projects, students faced multiple challenges, whether that of coming to a consensus on topics and methods, solving communication difficulties, or managing the shared art-making process. In the international context, with its language and cultural differences, these can all be daunting at times. In bringing together these diverse partners, the abilities necessary for working collectively towards a common global goal are developed. The bonus of the art-making context is that such workshops can be creative, fun, spontaneous, and community-building, with all these characteristics supporting visionary and hopeful perspectives when faced with difficult challenges.

The history of art practice, like most disciplines, is one of reference and inspiration. The cycle of seeing effective art works that lead one to consider a response builds a continuum of articulations. Collaborative co-creation adds another layer that brings people together to share perspectives, knowledge, action, and visions. This process does not require professional skills. Anyone can feel a part of such processes of inspiration and action. As participants actively work together, innovative experiences lead to new and surprising outcomes, often not predicted by facilitators. The shared identification of issues, choosing what to tackle, setting goals, and working towards creative outcomes can become self-sustaining and expandable through a continuing series of iterations.

From a collaborative problem-solving perspective, the brainstorming sessions and small breakout group methods used to animate students in the INTAC workshops prepare them for independent team activities. Taking on a creative task together requires collective thinking and cooperation, whatever the mix of participants is given, be it a diversity of disciplines, professions, or cultures. Collaborating on the task of an art project, as opposed to solving something as big as climate change, can move people past the feeling of, 'I can't do this, it's too big for me'. In an expandable circle of connections, co-creation can link individuals, diverse groups, and sectors by building communities of support and shared motivation.

The co-creation workshop process also catalyses change skills by shifting away from traditional academic methods of teaching. Individual-centredness is an important starting point for artistic thinking and production, but the co-creation model allows for personal starting points to be linked as part of a larger entity. The power of change found in a co-creation model, such as INTAC's, is based on filling the interspace of a traditional organisation model with creative, unprejudiced, open-ended collaborative methods. In this way, a cluster of competencies is formed with a potential to catalyse international thinking for change, such as:



- The use of art-based co-creation workshops encompassing collaborations between local and international groups in working to expand global thinking.
- Art-based collaboration with internationally, culturally, and socially diverse participants to engage their emotions and create empathy.
- Artistic exploration of global conditions, complex dynamics, and sustainability issues through images to develop competencies related to critical thinking through the questioning of norms, practices, and opinions.
- Collaboration that engages and empowers the individuals by bringing them into the process of understanding problems and imagining responses. Working from where one sits in relation to such problems promotes reflection on one's own role and builds self-awareness.
- Defining problems and seeking creative responses begins the process of addressing problems holistically, through novel as well as accessible and practical means for viable and inclusive artistic solutions.

The co-creative art methodologies provide some pathways that can be applied to a diversity of contexts. Key competencies and their applications offer a usable umbrella toolbox for co-developing different projects. Our efforts are not, by any means, individual or unique, but are used here to illustrate how collaboration through art-based co-creation events can animate new thinking and essential competencies.

### **Discussion**

As many consider how to support global transitions, it is important to consider methods that catalyse changing attitudes, rather than reproduce traditional delivery of information. Group creativity and problem-solving go beyond simple knowledge accumulation. Change comes with learning, and learning is a social practice. Social skills, curiosity, and an appreciation for different perspectives are all enhanced through collaboration. Such attributes support an openness to innovation. When participants define questions themselves in search of new knowledge, there is the possibility of mobilising concern towards action and hope, using people's range of existing knowledge, skills, and creative inspiration.

An international co-creation art process harnesses capacity building for our human potential. Global thinking, enabling empathy, critical thinking, self-awareness, and integrated problem-solving can be seen as catalysts for competencies in sustainability thinking. Even though co-creation art processes do not provide a quick fix for solving societal problems, it can form a necessary competence basis for future 'sustainable citizenship' (cf. Wals, 2015). Seeing art as decoration and as an amusement is important, but in addition to this, art is an instrument for the strategic processes of transformation involving personal development, leadership, and creative innovation (ref. Darsø, 2004).

If we are to develop sustainable changes, thinking globally is needed even while addressing local situations. Forms of artistic collaboration provide models for circular thinking and co-creative actions in ways that bring people and communities together to think in new ways. Collaborative models are key because they engage participants actively, breaking the distinction between self and other. This shift is needed if humanity is to understand how we coexist in a complex web and that our survival is dependent on restoring balance. Nature is not viewed as a pyramid with humanity at the top. Co-creative experiences help to move individuals away from limiting conceptions of the world towards shared meanings – like a dance in which we move harmoniously together (Gergen et al., 2001, p. 693).

Circles of co-creation, using a process of identifying issues, choosing what to tackle, setting goals, and working towards a creative outcome can lead to cyclical initiatives that become self-sustaining and expandable through a continuing series of iterations. In working together, diverse perspectives can be shared, and commonalities can be recognised. Such circles of action can then begin to intersect and form larger and larger networks. Barriers can also be broken. Each workshop, event or facilitated group can work with its own appropriate formats and methodologies. Common spaces for sharing outcomes can be established and links maintained. An international vision can expand to reflect the need for us to grow in our understanding of how we are travelling in this one world and need to find creative solutions together.

The model of art co-creation does not, in principle, aim to create artistic masterpieces, but instead uses artistic thinking to form essential sustainability skills required in the future. In this case, we can refer to a hybrid artistic process in which the model of linear learning and activities – business as usual – is reformed with the help of creative co-creation that takes place in an international context.

In INTAC's model, learning is enabled through co-creation between several universities, and partially takes place outside the curricula, producing an interspace that allows for new methods of viewing and experiencing. In other words, open-ended international co-creation constructively disturbs the prevailing methods of learning and thinking and catalyses a change towards UNESCO's critical competencies for sustainable development and CE.

Art co-creation has the potential to build bridges between linear and circular ways of thinking. To carry out an art project with international strangers in diverse groups, project group members must find new constructive ways to communicate and develop socially respectful and creative ways to execute shared art projects. This format radically changes the traditional art process, where a talented individual is expected to create artistic masterpieces on their own.

By creating international art together, diverse group members can achieve something meaningful as a unit, producing strategic sustainability skills. Personal development, self-direction, and encountering and respecting cultural identity differences create the prerequisites to face realities in complex situations where solutions must be creative and sustainable both socially and economically.

Although co-creation art projects are planned and implemented jointly by the relevant group, the result is a multi-voiced and multi-interpretable work that does not offer simple answers to complicated questions. INTAC's international co-creation skills development model does not produce physical paintings to be sold, nor is it a hammer that can be used to drive a nail to hang a painting on a wall. Instead, INTAC can be considered as the wall of a yet empty gallery, waiting for new ideas from an operator who must have artful competencies; they must have or learn the ability to solve a challenge at the level of ideas in a socially, economically, and environmentally sustainable manner.

In the co-creation process, personality is linked to the universal. When the starting points for co-creation art projects are the participant's personal observations, emotions, and experiences, a sense of social belonging is formed. These features operate as a strategic glue in the ideology of global sustainability. For example, art-based co-creation art projects related to food, housing, and mobility are linked together at an individual and international level.

Because art-based creation and learning differ from acquiring text-based knowledge, the international co-creation art process produces an alternative toolkit and necessary agency at both instrumental and strategic competency levels for finding alternative and sustainable solutions to the current global status.

## Epilogue

COVID-19 shook the world in the winter of 2019, leading to a long-planned INTAC joint exhibition in Mexico being cancelled. This cancellation, however, did not discourage students. Instead, the completed artworks were converted into a virtual exhibition, and the opening ceremony was virtually held in Finland at Tampere University of Applied Sciences' international iWeek 2019 event. The exhibition, implemented under the lead of the Autonomous University of the State of Mexico students' digital skills, presented INTAC's agile functionality in practice. Instead of travelling, the opening ceremony of the joint exhibition could be attended from around the world. Later that summer, a second virtual exhibition, curated by the INTAC students at the University of Applied Sciences Europe in Berlin, carried in its name a core message inspiring hope and describing the problem-solving potential of co-creation: *Future Art: Stay Creative/Stay Alive*.

## Educational content

What are some key competencies that will support individuals and organisations in moving towards implementing necessary changes and move humanity to sustainable futures? How can creative art-making experiences contribute to developing these?

Visual art can lead to new ways of thinking about the challenges of sustainability. How might art-making lead to motivation, new insights, emotional identification, or hope? How might creativity alleviate experiences of climate fatigue?

How can international collaborative activities expand thinking and build cross-cultural awareness and empathy? What are some advantages to programming creative art-making projects for these collaborations?

How could the collaborative formats discussed here be used with non-art groups? How could art-making be appropriate in these contexts or how could collaboration and creative problem-solving be applied?

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