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# The Power of Employing Science and Diverse Arts for Immersive, Sensory Food Education

## A Case Study of Tiistenjoki Elementary School

Katja Juhola, Joan Kelly, and Anu I. Hopia

**In this article, we present how arts-based methods can facilitate the exploration of children's everyday food experiences, emphasizing nonverbal expressions of feelings and values. Through a case study of an international collaboration in food and socially engaged art (SEA) led by Finnish artist and researcher Katja Juhola, our study highlights the intersection of art, community engagement, and food education. With a strong commitment to diversity and respect for all participants, Juhola's research planning revolved around the theme of food, particularly relevant in an area where agricultural work is central to family life.**

Part of the International Socially Engaged Art Symposium (ISEAS)<sup>1</sup> initiative, the 2022 Lapua event brought together 20 artists and scientists from Finland and abroad, culminating in an exhibition at the Lapua Art Museum. Juhola's research (2018, 2019, 2020a, 2020b, 2021; Juhola et al., 2020, 2022) focuses on the integration of SEA within conversational art, aiming to provoke social change through artistic practice. This approach emphasizes the role of conversation and communication in the artistic process, often seeking to generate new perspectives or insights through dialogue and interaction. SEA represents a dynamic form of creative expression deeply rooted in communal contexts, fostering collaboration across diverse media (Kester, 2004; Kwon, 2002; Matarasso, 2019; Suominen, 2018). This collaborative ethos extends to making kin (Haraway, 2016) of natural elements, such as animals, plants, and nonliving elements. The study aimed to address environmental issues with elementary school students, utilizing arts-based methods in collaboration with natural science and artists (Trickett, 2021; see also <https://sciart.org.uk>).

### Food and Dining as a Sensory Experience

Food and dining offer a rich sensory, cultural, ethical, and emotional experience engaging both the mind and body. Research by Auvray and Spence (2008) indicated that humans perceive food through vision, hearing, smell, touch, and taste, forming a holistic experience with flavor, appearance, texture, sound, and aroma. Spence (2017) noted that perception of food begins with these sensory modalities before actual tasting, entwining with emotions, memories, and social interactions (Herz & Schooler, 2002). Sensory receptors detect stimuli, translating them into sensations like sight, hearing, smell, taste, or touch. These stimuli

often interact, leading to cross-modal perception, where all five sensory modalities combine and influence each other (Lawless & Heymann, 2010). Our brains process these perceptions, integrating them with past experiences, knowledge, expectations, values, and attitudes. Ultimately, these stimuli transform into experiences, shaping preferences or aversions toward food. Food experience thus emerges as an emotional and cultural phenomenon, weaving individual sensory perception, personal characteristics, and experiences into a unique response.

### Conceptual Framework: Dialogic, Relational Collaboration

Art inspires new ways of thinking and encourages creativity and innovation. It can provide a space for experimentation and exploration, prompting us to see the world as nonverbal expression in new and different ways. Conversational art (Bhabha, 1998; Gablik, 1995; Kester, 2004) entails the artist creating a space or environment that encourages dialogue in its many forms. Art can apply new processes and inspire new ways of thinking through the iterative process of appraising, evaluating, examining, editing, reaching conclusions, and realizations (Botella et al., 2018). In conversational art (Kester, 2004), the artist creates a space or environment intended to encourage dialogue in various forms. This is exemplified by the interactions of primary school students, whether through drawing, engaging in bodily movements, interacting with farm animals, or initiating conversations with an art museum visitor. These activities align with the principles of socially engaged art by emphasizing shared goals and collaborative practices that foster meaningful connections and participation.

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Dialogical aesthetics is often associated with “relational aesthetics,” a term coined by French art critic Nicolas Bourriaud (2002) in the late 1990s in his translated work of the same name. Relational aesthetics emphasizes the importance of social interactions and human relationships in contemporary art and views art as creating connections between people and fostering social engagement. Artistic practice becomes an invaluable spectrum of methodologies to craft for the context when there is no existing infrastructure for engagement between communities and researchers (Kelly, 2019). Numerous examples of collaborative

projects between art and science exist (Ballengée, 2015; Hediger & Scott, 2016; Muller et al., 2015; Schnugg & Song, 2020). The most valuable results are often unexpected (Levine, 2013). Serendipitous events bring fresh perspectives and imaginative ideas—the “fairy dust” that fuels successful art–science collaborations. ISEAS exemplified such magic by connecting people, nature, and animals through multiple artistic approaches, enabling a holistic exploration of the overarching theme of food. Achieving these unexpected results requires a leap of faith and a deep trust in our “partner in crime” (Segal & Meroz, 2023, p. 1). By fostering creativity, embracing play, and promoting genuine transdisciplinary collaboration, we have the potential to instigate a cultural shift within the scientific community—crucial for driving present and future discoveries (Chappell & Muglia, 2023).

### Research Approach and Design

The chosen methodology was arts-based research (ABR; Barone & Eisner, 2012; Leavy, 2015, 2017, 2018; McNiff, 1998) in the context of SEA. ABR is a qualitative approach that utilizes creativity, sensitivity, and expressiveness (Barone & Eisner, 2012). Artistic methods allow for the expression of information that may be difficult to verbalize, and the unpredictable nature of art makes it particularly suitable for discussing challenging topics, such as food. Engaging in the iterative process allows explorations

**Figure 1. Drawings based on the six questions during the 1st day of the workshop. Courtesy of Fabio Cito, 2022.**



and surprise revelations, creating deeper artistic and verbal conversations. Varto (2017) stated that although artistic activity reveals artistic phenomena and entities, they are never theoretically limited because they appear sensory and utilize bodily experimentation.

ISEAS's approach to art is multifaceted, as it includes artists and scientists from diverse fields working in collaboration with the SEA project. The interaction of different art forms shapes the ISEAS research perspective. ISEAS values the role of professional photographers and videographers as integral to data collection. The photos and videos produce data sets for analyzing processes and outcomes, forming integral parts of the exhibition where the process of SEA can be viewed.

Arts-based methods were employed to facilitate meaningful artistic dialogues with schoolchildren, addressing important topics such as food in our daily lives and the interconnectedness of all living networks. We incorporated five arts-based activities: drawing, crafts, physical activity, meeting animals, and creating music. This creative exploration culminated in an exhibition, Our Shared Food, at the Lapua Art Museum, serving as both a showcase and a space where the conversational art initiated during the fieldwork continues.

### Workshops at Tiistenjoki Elementary School

In spring 2022, Juhola arranged a workshop completed that August at a small rural school. This dedication reflects the ethical foundation of her dissertation research, characterized by extensive teacher involvement and tailored school curriculum adaptations. The principal's enthusiasm was evident, advocating for the participation of all 47 students. Every student's parent received a detailed letter outlining the upcoming event and requesting written research, photography, and videography permits, allowing them the option to deny or withdraw consent at any point. The goal was to approach food in a gentle and multifaceted way while fostering empathy and understanding for food and animals.

During the planning session, food scientist Anu I. Hopia introduced her research on the multisensory experience of food. Consequently, the subteam decided to navigate the food theme by encouraging students to express emotions and feelings toward food through various arts-based methods, including body exercises, drawing, and painting.



Figure 2. Children create the final artwork on imaginary food in their classroom. Courtesy of Fabio Cito, 2022.



Figure 3. Example of the finalized artwork of a younger child of 7 to 9 years of age. Courtesy of Fabio Cito, 2022.

**The subteam decided to navigate the food theme by encouraging students to express emotions and feelings toward food through various arts-based methods, including body exercises, drawing, and painting. Joan Kelly engaged the children creatively, prompting quick drawings to capture their initial, instinctive reactions without the influence of overthinking or societal expectations.**



**Figure 4. Professor Hopia guiding children's work. Courtesy of Fabio Cito, 2022.**



**Figure 5. Artists Kelly and Yadav helped during the challenging part of the work. Courtesy of Fabio Cito, 2022.**

painting. Joan Kelly engaged the children creatively, prompting quick drawings to capture their initial, instinctive reactions without the influence of overthinking or societal expectations (Gawronski & Payne, 2010). Crafting six thought-provoking questions linking emotions to specific sensory organs, the team sought to delve deeper into the children's perceptions. The first question, designed to evoke surprise, aimed to unveil immediate, unfiltered responses. Using visual language through line- and mark-making facilitated expression and transferred valuable insights from the community to the ISEAS team, enriching their understanding of the children's perspectives.

On the 1st day of the 4-day workshop, the children from 1st to 5th grade ( $N = 47$ , aged 6 to 12) were asked to draw a series of six food images:

1. Draw a picture of the smelliest food you can imagine.

2. Draw a picture of the most beautiful food you can think of.
3. Draw a picture of the food that comforts you when you are a little bit sad or down.
4. Draw a picture of the food your mom wants you to eat but you do not like.
5. Draw a picture of the noisiest food you can think of.
6. Draw a picture of the food you invented, and describe how it tastes and/or where and with whom you would like to eat it.

During the subsequent days, the children worked on transforming their sketches into full-fledged artworks (Figures 1–5). The younger participants, aged 6 to 9, created two-dimensional artworks on A3 cardboard using materials like paint, felt fabrics, craft braids, and beads. Meanwhile, the older children, aged 10 to 12, made three-dimensional stuffed soft sculptures using fabrics (Figure 6). Each child also wrote a short narrative accompanying their artwork and describing its meaning.

Jokiranta and Yadav led a body-oriented workshop for children aimed at exploring the connection between the mind and the body through creative and experiential methods (Figures 6–9). They included a bodily activity to deepen the children's thinking about food and associated emotions. Children worked in pairs using interactive, creative movements to examine food from different perspectives. An intriguing observation was how children used food creatively, such as making candy chains resembling pearl strings. This activity sparked creativity, fostered social integration, and encouraged diverse perspectives, consistent with

dialogical aesthetics (Kester, 2004). The workshop also aimed to enhance self-reflection by guiding students to explore sensory and emotional connections with food, deepening their understanding of the body–mind connection.

On the final day, the children took a trip to Jokiranta's farm to meet cats, dogs, bunnies, horses, and sheep. With Jokiranta's guidance, the children improvised and created songs based on their weekly experiences. Jokiranta played guitar and prompted the children for words related to their experiences. Although she initially took the lead, the children quickly became excited and joined in. The ISEAS documentary team recorded their chorus, which was featured in the official ISEAS documentary and in the Lapua Art Museum exhibition (Figures 10–13).

## Results and Discussion

The workshop incorporated five arts-based activities: drawing, crafts, physical activity, meeting animals, and creating music.



**Figures 6–9. Body exercises during the workshop will give students tools and stimulate their creativity to understand food-related issues in the future. Courtesy of Fabio Cito, 2022.**

**Through collaborative approaches, participants—children in this instance—developed their sensory awareness and emotional literacy by engaging directly with ISEAS subteam members from diverse cultural contexts, thereby fostering global awareness through experiential learning.**

Engaging children’s senses can aid in developing their cognitive, social, and emotional skills, and it can expand their vocabulary and knowledge of the world around them. Drawing materials can provide varied possibilities and complexities for early childhood educators and young children. Through collaborative and unpredictable engagement, these materials turn children, educators, and the medium into colearners and coteachers, cultivating a distinctive form of knowledge within the pedagogical space (Chung, 2022).

By using diverse arts-based methods, our study investigated how children relate to food from their own perspectives. The child’s viewpoint took the lead, shaping the resulting outcomes. We first posed questions tied to sensory and emotional experiences to elicit various emotions. The final question—prompting children to invent and describe a new food, specifying where and with whom they would like to eat it—encouraged them to imagine and create freely, yielding a wide range of imaginative responses. One child wrote:

A doughnut without a hole.

A doughnut is made from dough, milk and sugar. It has sugar in it. You can eat it anywhere but shouldn’t eat it in a volcano.

The children’s imaginative and joyful relationships to food, inspired by art, constitute an important finding that could be harnessed in future food education. Such an approach may inspire new ideas for changing consumption habits. By complementing knowledge-based art and food education and engaging with others, participants can experience the interconnectedness of living and nonliving things (Haraway, 2016; Laininen, 2022; Pihkala, 2019; Ylirisku, 2021). Art may also provide a tool to process harmful or threatening feelings connected to food or environmental anxiety.

From an educational perspective, arts-based methods effectively promote thinking and nonverbal expressions of feelings and values regarding children’s everyday relationship with food. Considering their varying attention spans, we recommend using multiple arts-based methods when discussing food with young children.



**Figures 10–13. Animal-assisted activities in the lamb farm focus on social connection and body–mind themes between animals and children. Courtesy of Fabio Cito, 2022.**

Collaboration between artists and science was vital for this project, enabling participatory art activities and resulting in a multivoiced, gratifying work of art.

It is also essential to recognize how socially engaged art practices can foster local ideation and action. In this case, the children’s engagement with food and animals may have led to a deeper understanding of local and global food systems, encouraging reflections on broader issues such as sustainability and ethics—even if these concepts were not explicitly introduced. Some children chose to include noodles and durian in their artwork, although these foods are not part of their everyday diet in rural Finland, possibly reflecting curiosity about other cultures and diversity in food.

Children’s feedback further highlights emotional engagement, creative expression, and reflections on cultural exchange—aligning with ISEAS objectives:

It was nice when you came. We hope you will come again. It was a really nice experience. I also liked it when I learned English. I also liked that I could teach them Finnish. (written feedback from anonymous student, September 2022)

It was fun. It was nice to do crafts. I used my imagination, and it was nice to be with the animals. (written feedback from anonymous student, September 2022)

It was a bit tiring because there weren’t many physical tasks/ things other than once or twice. It was difficult because some spoke English and didn’t understand us or we didn’t understand them. The best part of the week was when we went to the farm to look at animals and sing. The sheep were really cute and fluffy. (written feedback from anonymous student, September 2022)

The children’s artworks formed the exhibition *Our Shared Food* at the Lapua Art Museum, serving as a starting point for dialogue among visitors who could reflect on their own experiences. In alignment with socially engaged art, this work continues its conversations by inviting visitors to read, see, listen, and watch the pieces created by ISEAS artists (Figure 14).

Overall, this study integrated socially engaged art to explore how sensory experiences and emotional connections deepen our understanding of the environment, focusing on food as a fundamental aspect of life. Through collaborative approaches, participants—children in this instance—developed their sensory awareness and emotional literacy by engaging directly with ISEAS subteam members from diverse cultural contexts, thereby fostering global awareness through experiential learning.



**Figure 14.** Juhola and Hopia in the Lapua Art Museum created the *Dream Dinner Table* installation. Process descriptions in the form of menu cards are integrated into the installation. The works are “joyfully anarchistic and boundary-pushing,” emphasizing themes of happiness, delicacy, sharing, and celebration. Courtesy of Anna-Kaarina Perko, 2023.

## Conclusion

### *Highlights and Key Takeaways*

#### 1. Collaborative Approach

- ISEAS brought together three artists and a food scientist for a socially engaged art initiative grounded in conversational art theory.
- The team worked with children in a Finnish rural school, promoting an inclusive environment.

#### 2. Arts-Based Activities

- Drawing exercises enabled children to explore emotional connections with food.
- Physical body exercises and farm visits nurtured empathy, extending understanding beyond human relationships.

#### 3. Artworks and Exhibition

- Children’s creations culminated in the Our Shared Food exhibition at the Lapua Art Museum.
- This display reflected creativity, joy, and meaningful outcomes that reached a broader public.

#### 4. Educational Impact

- Arts-based methods encouraged nonverbal expression and reflective engagement.
- Emotional development and innovative thinking emerged as pivotal outcomes, demonstrating the potential for arts-based approaches in food education.

#### 5. Collaboration Between Art and Science

- Integrating artistic and scientific approaches offered unique interdisciplinary learning experiences.
- This collaboration enriched understanding and provided tools to address complex issues such as sustainability and food ethics.

#### *Broader Implications*

This socially engaged ISEAS project provides a practical model for implementing interdisciplinary art initiatives with elementary-age children. By combining art, science, and community engagement, it illustrates how creativity can deepen understanding, foster emotional connections, and inspire potential solutions to global food challenges. Future research on the intersection of art and food science may continue to unlock valuable insights and strategies for education, sustainability, and community engagement. ■

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## ENDNOTE

<sup>1</sup> <https://www.iseasfinland.com>.