

Sustainability Education: Systemic Impacts



Cornell University

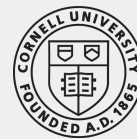


Civic
Ecology
Lab

Alex Kudryavtsev
October 22, 2024



Introduction to the interactive webinar



Cornell University



Civic
Ecology
Lab

<http://CivicEcology.org>



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In the chat, please introduce yourself:

- Your name
- City and country
- Your organization and role
- 3-4 keywords about your interests in our field



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Example:

Hi! My name is Alex Kudryavtsev. I'm in Ithaca, New York, US. As a Research Associate at Cornell University, I conduct environmental education research. Interests include: urban environmental education, civic engagement, urban agriculture education.



Please welcome others

Reply to any 2-3 people by sending positive vibes

- Welcome!
- Hello!
- Great to see you!
- Hi from South Africa :)



During the webinar:

- Please use chat to write your ideas, comments, and responses
- React to others' comments, use emojis
👍❤️😊🌿☀️

Webinar Objectives

1. **Articulate systemic impacts** of your education program
2. Understand which **activities contribute** to these impacts
3. **Implement these activities** in your program



Sustainability Education

Sustainability education

- Education for sustainable development
- Education for sustainability
- Learning for sustainable development
- Learning for sustainability

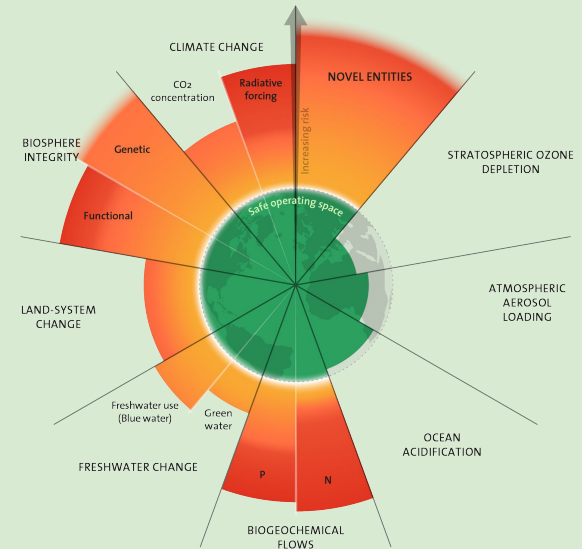
Emphasizing the 17 Sustainable Development Goals (United Nations), and the overlap of social, economic, and environmental questions



Sustainability education

- Education for environmental sustainability
- Environmental and sustainability education

Featuring a prominent place of the environment in achieving sustainability



Sustainability education

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- Education for sustainability
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Featuring a prominent place of the environment in achieving sustainability

We use the term ***sustainability education*** to emphasize its goal of enabling society to foster a sustainable future across environmental, social, and economic dimensions.

Sustainability education

Outcomes are specific and easily measurable

Impacts are more long-term, more systemic



What are the narrow outcomes, and broad impacts of your program?

- Use QR code with your phone:



- Or use <http://menti.com>, Code: **5566 0533**

- Or open this link:

<https://www.menti.com/al6j5o78gimw>

Sustainability education in schools

- Students spend most of their time in schools
- Currently, it's rarely education for sustainability
- Real-life learning is needed



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*“Young students are very interested in justice, and get really passionate when they see something unfair,” they say “**Why don't we do something to help?**”*

Teacher in a high school
in **Queens, NYC**

*“Education should not be a simulation of real life. **Students deserve to participate in society as active and engaged citizens.**”*

Teacher in a middle
school in **Brooklyn, NYC**

Case study

New York Sun Works



ABOUT NY SUN WORKS



NY Sun Works, a non-profit organization that builds **hydroponic farm classrooms** in NYC K-12 public schools for the teaching of:

- Science
- Sustainability
- Climate
- Nutrition

We envision a generation of **environmental innovators**, empowered to create solutions to global climate challenges.

<http://nysunworks.org>

** NY Sun Works slides are provided by
Manuela Zamora and Megan Nordgrén*

Educating students about sustainability science through hydroponics



HYDROPONIC CLASSROOMS



**Sustainability science and
climate education**

**Reaching 120,000 students
annually**

350+ schools

<http://nysunworks.org>



Hydroponic tower



Classroom hydroponic farm



Ready for harvest



Student before presentations at an annual conference in NYC



Teacher workshop



Any questions for NY Sun Works?

Research about systemic impacts



<https://youtu.be/ymkioZ92ino>

NY Sun Works: desired educational outcomes

Students

- Science literacy
- Environmental literacy
- Climate change literacy
- Sustainability action skills
- Urban agriculture skills
- Civic engagement
- Systems thinking
- Problem-solving skills
- Leadership skills
- Equity and justice values

Schools

- Integrating sustainability, climate, and environmental topics across subjects
- Offering teacher professional development
- Contributing to green infrastructure in schools
- Providing fresh produce to students in classrooms
- Enhancing student-teacher collaboration

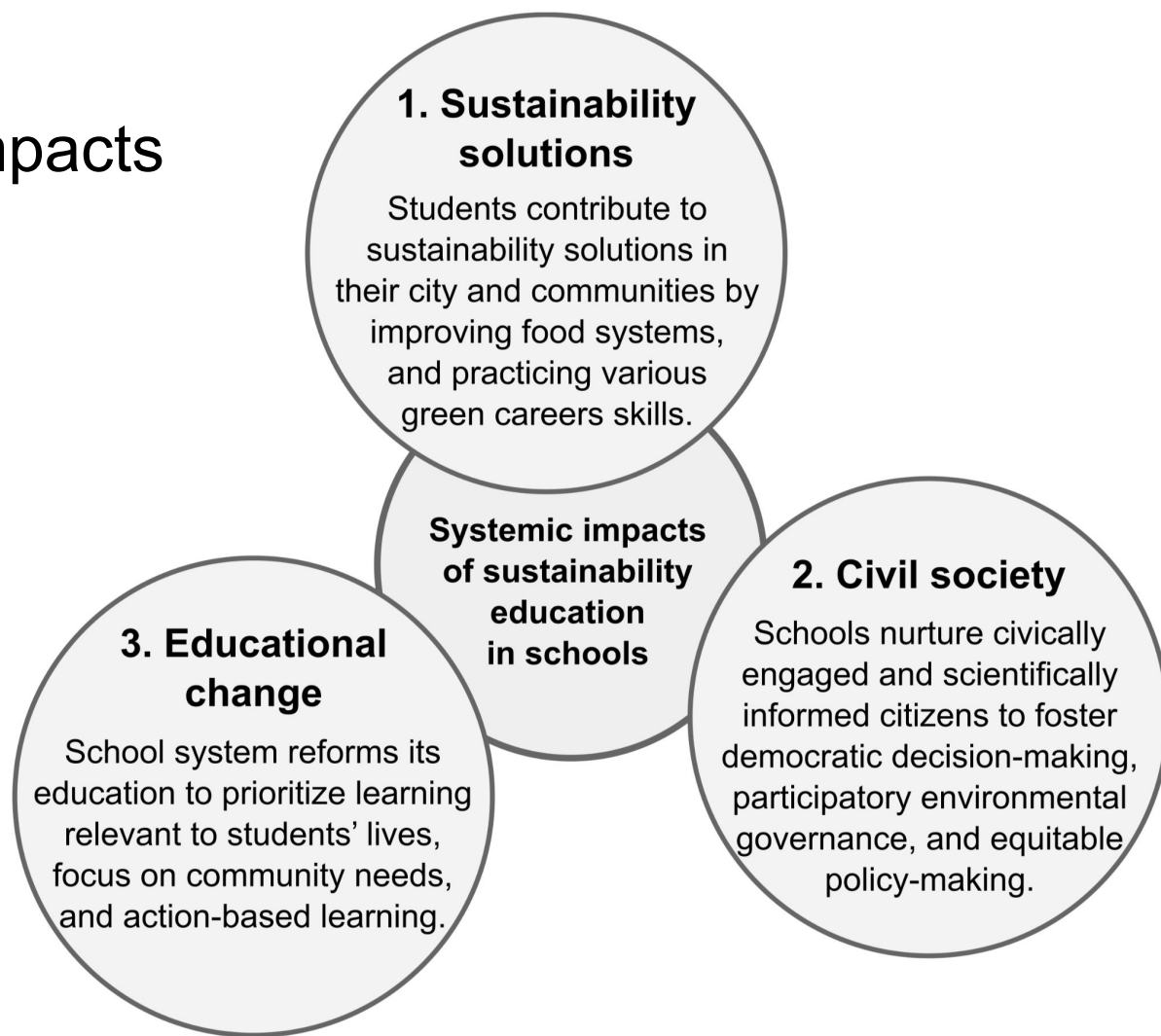
Communities

- Donating vegetables to local communities
- Growing culturally significant crops
- Engaging parents and families in sustainability actions
- Building school-community partnerships for sustainability

City

- Promoting equitable food systems
- Enhancing urban environmental resilience
- Developing city-wide sustainability solutions
- Nurturing a democratic, civically engaged society

Systemic impacts



Systemic impacts

1. Sustainability solutions

Students contribute to sustainability solutions in their city and communities by improving food systems, and practicing various green careers skills.

Inquiry-based, project-based, and problem-based learning focused on improving local food systems, contributing to food justice, promoting plant-rich diets, reducing waste and energy use, and acquiring urban agriculture skills.



Systemic impacts

2. Civil society

Schools nurture civically engaged and scientifically informed citizens to foster democratic decision-making, participatory environmental governance, and equitable policy-making.

Promoting civil society through participatory classroom decision-making, policy analysis, collaboration with community and city government, and the creation of inclusive learning environments that respect all voices.



Systemic impacts

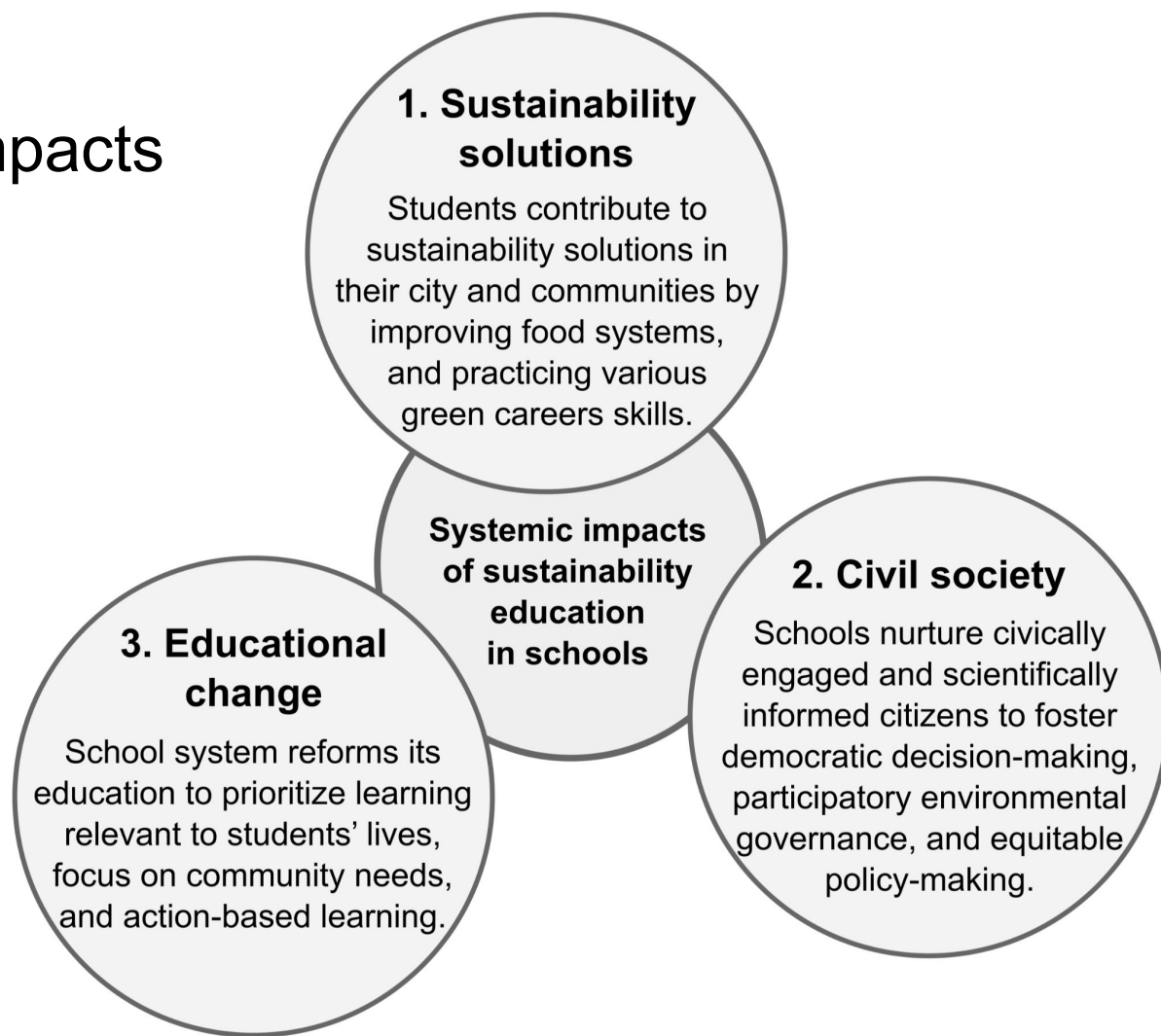
3. Educational change

School system reforms its education to prioritize learning relevant to students' lives, focus on community needs, and action-based learning.

Focusing the curriculum on the needs and strengths of students and communities, and by promoting multiple ways of learning, culturally and linguistically relevant teaching, modern farming technology, curiosity-inspiring classrooms, and social and collaborative learning.



Systemic impacts





Breakout (3 min), then share:

What systemic changes can result from your education program in the long term?

E.g., equitable environmental governance, inclusive policy-making, ecosystem management, power distribution, science learning standards, funding for sustainability education, strengthening climate education, fostering school-community partnerships...

1. Sustainability solutions

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Systemic impacts of sustainability education in schools

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Educational approaches

- Strengthening local food systems
- Using modern farming technology
- Contributing to food justice
- Improving community health
- Decreasing urban carbon footprint
- Practicing urban agriculture skills
- Training for emerging green careers

- Participating in classroom decisions
- Influencing community values
- Addressing community needs
- Analyzing institutions and policies
- Engaging with civic leaders
- Sharing ideas with city officials

- Experiential, project-based learning
- Collaborative, team-based learning
- Culturally-relevant learning
- Transdisciplinary learning
- Using local resources and expertise
- Creating knowledge through inquiry
- Broadening school mission

Systemic impacts of sustainability education

We need significant change!

Sustainability requires systemic, transformative changes, fundamental shifts in institutions, technologies, norms, and education.

We can bring that change!

Schools and nonformal education programs can help transform social, economic, and environmental systems.



Please think after this webinar:

- What activities can you implement in your education program to contribute to systemic changes?

Discussion







