

School-Community Partnerships for Mitigation of Climate Change and Energy Transition

September 6, 2022

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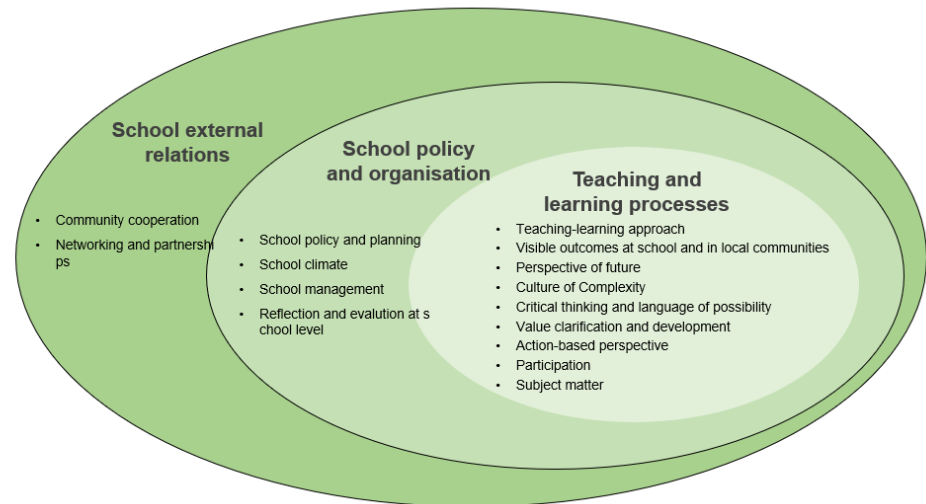
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Introduction

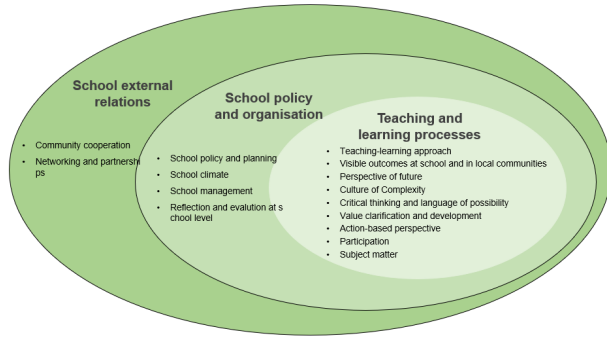
- Education is critical for promoting sustainable development and building the capacity of the people to address environment and development issues (UNCED, 1992).
- Environmental Education (EE) and Education for sustainable development (ESD) in schools appears in various ways depending on the historical background and perspectives of education in each country, including an approach that integrates sustainability into existing subjects and a whole school approach for sustainability (Breiting, Mayer & Mogensen, 2005).
- There are increasing cases in which the whole-school approach towards sustainability is considered in terms of not only teaching and learning but also managing schools or connecting with wider communities (Wals, 2009).

Introduction

- The community has been regarded as a very important factor when considering the whole-school approach in ESD. Schools are not separate institutions that provide abstracted general knowledge, but rather should play an active role in society as important stakeholders for community development (Breiting, Mayer, Mogensen, 2005).



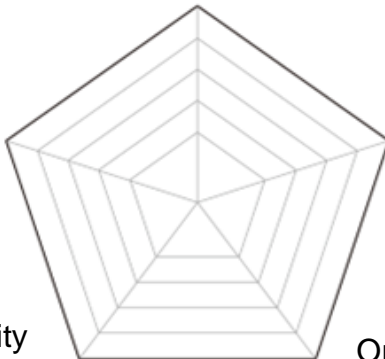
Whole-School Approaches for EE/ESD



	Food and drink		Buildings and grounds
	Energy and water		Inclusion and participation
	Travel and traffic		Local well-being
	Purchasing and waste		Global dimension

Educational contents

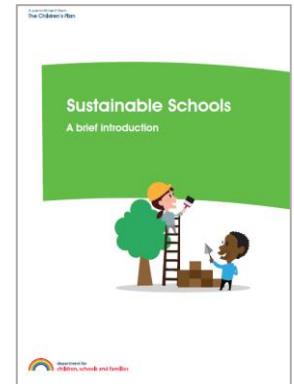
Facility Management



Teaching & Learning

Community partnerships

Organization & Decision Making



- Source : Breiting *et al.* (2005), Lee & Kim(2016), DCSF(2006).

Whole-School Approaches for EE/ESD

Key Features of Sustainable Schools

- School Leadership
- Whole-school Participation
- **Partnerships**
- **Participatory Learning Approaches**
- Integration of EE and EFS across the Curriculum
- Hidden Curriculum
- Professional Development
- 'Greening' of the School and Physical Surroundings
- Classrooms within and outside
- Reductions in Ecological Footprint
- Monitoring, Reflection & Evaluation
- Practitioner Research

(Henderson & Tilbury, 2004)

Quality Criteria for ESD Schools

• **Quality of Teaching/Learning Processes**

1. Teaching-Learning Approach
2. Visible Outcomes at School & in local community
3. Perspectives for the Future
4. a 'Culture of Complexity'
5. Critical Thinking & the Language of Possibility
6. Value Clarification & Development
7. Action-based Perspective
8. Participation
9. Subject Matter

• **School Policy & Organization**

10. School Policy & Planning
11. School Climate
12. School Management
13. Reflection & Evaluation of ESD initiatives at School Level

• **School's External Relations**

14. **Community Cooperation**
15. **Networking & partnerships**

(Breiting, Mayer & Mogensen, 2005)

In this presentation :

Seongdaegol village & Kuksabong middle school case as a school-community partnership for climate change and energy transition will be shared.



- Seoul : 25 autonomous region, Ten million people, 424 dong
- Seongdagol : Sangdo 3,4dong, 56,000 people, 25,000 household

* Source : Kim (2018)

Seongdaegol aiming for Energy Transition Village

- In Seongdaegol, energy-independent village initiatives began with the villagers' campaign to create a children's library to improve the local educational environment.
- When the Fukushima nuclear power plant incident occurred in 2011, residents were deeply concerned about energy independence and energy transition, and they began to seek out what they could do for themselves in the local area.
- They took an energy education class together in the local area, and then started an effort to reduce the energy used in each household together by creating a 'power saving station'.



< Children's library at Seongdaegol >

Seongdaegol aiming for Energy Transition Village

- In 2012, an energy festival was held with the addition of energy to the village market that had been held in the local area, and it has been running ever since.
- In 2013, Maeul.(dot)Salim, an energy cooperative, was established.
- In 2014, Energy Supermarket, a village enterprise was started.
- Since 2015, the 'Energy Transition Living Lab' has been operated, where local governments, residents, and private sectors work together to research and contemplate ways to achieve energy conversion in daily life.



Seongdaegol aiming for Energy Transition Village

- ‘Living Lab’ recruits village researchers from teens to 70s in the local area to contemplate creating an energy transition culture and to find solutions.
- In 2019, a community survey was conducted focusing on overcoming and adapting to the climate crisis, in which two S high school students participated as village researchers along with two students from other schools.



FG1 Technical team



FG2 Finance team



FG3 Education & PR team

* Source : Kim (2018)

Seongdaegol aiming for Energy Transition Village

- Since 2012, energy and climate change education (energy saving, appropriate technology, ecological architecture, renewable energy, etc.) has been conducted for local elementary, middle and high school students (Seongdaegol, 2017).
- In 2012, energy education was proposed to Kuksabong middle school, and it became an opportunity to start climate change education and energy transition in schools in the community.

Kuksabong Middle School aiming for a Sunshine School



- Kuksabong middle school established in 1986, is located in Dongjak-gu with 15 classes, 345 students and 34 teachers.
- The school was designated as the Innovative school by Seoul Metropolitan Office of Education in 2011.

Kuksabong Middle School aiming for a Sunshine School

- In 2011, the Seoul-style innovative school started.
- In 2012, teachers, students, and parents developed a “community living agreement” created and operated by students, instead of the existing student life regulations, through a six-month discussion, deepening consensus among members and building mutual trust.
- To support students in making a living agreement, a thematic curriculum was formed, which later developed into a democratic citizenship curriculum and became the basis for activating various thematic inquiry courses. This is connected to the activities of the learning community of teachers.

Kuksabong Middle School aiming for a Sunshine School

- The teachers' learning community evolved from a kind of lesson study group by grade at the beginning, to an autonomous group in which a variety of integrated thematic study such as 'local community-ecology, democratic citizen-living convention, reading, and career' were activated.
- 'One Less Nuclear Power – Creating Energy Independent Villages', 'School Cooperatives', and 'Sunshine School' are examples of thematic curricula that explore various themes and topics related to environment and energy.

Teachers' Study Tour In the Community (2019)

Energy Supermarket & Unmanned Cafe



Village Mural (Map)



Senior Center (Solar Panel)



Daycare Center (Solar Panel)



Children's Library



방치된 쓰레기산



Zerowaste shop * Source : Choi(2021)

Kuksabong Middle School aiming for a Sunshine School

- Since 2011, the 'Village is School' project has been operated under the recognition that educational activities with the village are important in creating a new school culture and class culture.
- In connection with local grassroots groups including Seongdaegol village, weekend farms, after-school art programs, and village ecology classes were conducted.



Kuksabong Middle School aiming for a Sunshine School

- The collaboration with Seongdaegol began in 2011 when a teacher in Kuksabong middle school requested a children's library in the village for special classes for students with low literacy skills.
- From 2012, Seongdaegol village activists suggested that they want to provide energy education to students, and this led to a class in the environment club (making a power saving station at Guksabong Middle School).
- In 2014, the school-community collaboration provided education on energy, climate change, and cooperatives through regular classes or club activities for the second year students, and the building of a zero-energy house on the school grounds was carried out.

Kuksabong Middle School aiming for a Sunshine School

- Guksabong Middle School continues to conduct climate change and energy transition education through various opportunities such as regular classes, club activities, and creative experience activities in cooperation with Seongdaegol village activists.
- In 2016, the school and the local community cooperated to establish a school ecological canteen for safe food in the form of a social cooperative.





Energy Transition Café(Zero Energy House)



- Solar Panel (roof)
- Solar fan (wall, student-made)

Inside the energy transition café

- Upside-down wood stove (student-made)
- Solar dryer (made by student groups)

Kuksabong Middle School aiming for a Sunshine School

- Since 2017, the student council of Guksabong Middle School, faculty, staff, parents, and the local community have installed a solar power plant together and have been working to create a council to convert school energy sources into renewable energy.
- Community members of Seongdaegol energy transition village are playing an important role in the process of creating a solar power plant as community members and parents.





- Solar power plant (33KW) on the roof of the school by the school cooperative
- The effect of planting 110 pine trees
 - > Operation of eco-energy education course in connection with Sunshine School project

* Source : Choi(2021)

Kuksabong Middle School aiming for a Sunshine School

- Sunshine School ?
Aiming for a school with 100% energy independence in the long run
- Sunshine School Project (2016 ~)
 - Operation of eco-energy education courses linked to villages
 - Energy saving practices
 - : Energy efficiency of building & students' action
 - Energy transition with solar panel (83KW) & cooperatives
 - School-community partnerships

Conclusions

1. Community as a resource, school as an activity space
 - The expertise of the Seongdaegol village activists is a great help to teachers when they want to deal with socially important issues such as 'energy, climate change, and carbon neutrality' in schools.
 - Teachers and local activists have been conducting educational programs by discussing when and how to meet with students according to the topic and situation to be studied with the students.
 - It is also important in the sense of an opportunity to inform future generations of the value of energy transition. At the same time, the school has significance as an activity space for local activists to develop their capabilities as energy/climate change education experts.

Conclusions

2. Exploring sustainability issues in the community

- 'Village program', an activity to find the promise of climate change by reviewing the election notices of the candidates of the local council running for the local elections in 2019. Students looked at the candidates' pledges for an hour, but it was hard to find any related promises such as energy, transportation, fine dust, garbage, and water.
- The students formed a political party in each group and proceeded with the activity of suggesting a climate change pledge.
 - Students learn about various climate change policies such as 'Vehicle 2', 'Reduction of public transportation costs', 'Waste recycling industry (recycling food waste to produce bioenergy)', and 'Expanding the supply of electric vehicles that do not emit greenhouse gases'. suggested They also made a list of actions they can take to realize these promises.

Conclusions

3. Understanding the region, increasing love & pride on the region

- Through school-community collaboration, opportunities to utilize local resources for education have been expanded both quantitatively and qualitatively.
- Opportunities for students to go out into the region have also increased. Students go on field trips to the local area through various opportunities such as class time, creative experience activities, and club activities. Local assets such as 'Energy Supermarket, Children's Library, Zero Waste Shop, small bookstores, traditional market merchants' association, and Village Dasselim Cooperative' have become a space for learning various topics such as energy, climate change, ethical consumption, and regional regeneration. .

Conclusions

3. Understanding the region, increasing love & pride on the region

- At the energy festival held online in 2020, students from middle school and high school played a role in planning and operating the program together with students from other nearby schools. Teenagers in fluorescent vests walked around the traditional market, actively guiding local residents how to participate in the online energy festival.
- Through school-community partnership, participation in local events, festivals, and Living Lab researcher activities, students observe closely where they live and learn about what is happening in the community, students not only gain a better understanding of the community, but also have a sense of pride in the region and are willing to participate in local activities.


Implications

- The result of this study is to enhance the discussion and practice related to the whole school approach, so that education for sustainable development can change the culture by expanding to the whole school rather than staying at the fragmentary level of individual subjects or special activities.
- In particular, it provides implications for important points, elements and processes in the process of initiating, developing and deepening an attempt to link a school with a specific educational orientation, such as ESD or eco-education, with a curriculum or region.

Implications

- Through this case, the role and importance of the teachers' professional learning community in whole school approach can be visualized. It can be confirmed that the process of expression of the teacher agency, such as the reconstruction of the curriculum in the teacher learning community and its results, lead to the growth of teachers and changes in schools. This may provide a new paradigm for changes in school culture and teacher education in the future.
- This case shows that the ultimate goal of ESD education, that is, education can enhance the sustainability of local communities.

Thank you

 This research was supported by Humanities and Social Science Basic Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education(2019S1A5A2A03053436).