Greening secondary school:
the pedagogical experience in education for sustainable

The article discusses the experience of Virgen Asunción school in adopting and implementing UNESCO's proposal of education for sustainable development with an additional approach: working through integrated in rural secondary education projects linked to society and the community.

Reverdecer la secundaria en el Cusco la IE Virgen Asunción y su experiencia con la educación para el desarrollo sostenible

Se aborda la experiencia de la Institución Educativa Virgen Asunción al adoptar e implementar la propuesta de educación para el desarrollo sostenible de la Unesco con un enfoque adicional: trabajar por proyectos integrados vinculados a la sociedad y la comunidad en la educación secundaria rural.

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# of Virgen Asunción school development

NAYRUTH TRIVEÑO ANAYA

EDUCATION FOR SUSTAINABLE DEVELOPMENT: AN ACTION-ORIENTED APPROACH TO PEDAGOGY

At the United Nations Conference on Climate Change (COP25), the World Meteorological Organization's State of the Climate Report warned that the signs of rising temperatures and more frequent weather events with devastating consequences are the visible face of the fact that we are approaching what they called, with a sense of real urgency, "a point of no return" in what humanity can do to mitigate the effects of climate change.

Four years have passed since that appeal; and although global action and public opinion now show a clear agreement on climate action and the urgency of sustainable development, the world is still far from achieving a true change in the social and economic paradigm. In this context, educators have entered the field of demand, increasingly focusing on how, from the classroom, they can contribute to this profound change in habits, production systems and collective resilience through the younger generation - the children and adolescents who are receiving their school education today and are already exercising their citizenship and agency there.

This new demand has given rise to various initiatives on how to address climate change education. One of them is UNESCO's Greening Education proposal, which envisages learning based on the efforts of education systems

to educate for environmental education or to include climate awareness in a more ambitious framework that guides education comprehensively, through education for sustainable development (ESD).

In line with UNESCO, ESD arises precisely from the need for education to address the growing challenges posed to sustainability, applying an innovative and action-oriented pedagogy so that all students can exercise their agency to transform today's society, and that of the future, into a more sustainable society. UNESCO proposes renewing education by transforming teaching skills to address action-oriented pedagogy closely connected to local and global challenges, traditional knowledge and learning environments which go beyond the classroom and involve students in solving their community's immediate and real problems (UNESCO 2020).

This article gathers the experience of Virgen Asunción school, in the Pillpinto district, Paruro province, Cusco region, which adopted and implemented UNESCO's proposal of education for sustainable development, and applied an additional approach of innovation for rural secondary education: the pedagogical work by integrated projects, linked to society and the community. The school is part of the Horizons Rural Secondary Program promoted by UNESCO in Peru since 2018.

Greening rural secondary education: Pillpinto, Cusco

Virgen Asunción school is a non-integrated rural secondary school, with a regular school day and direct state management, which offers regular basic education. It is an intercultural bilingual secondary school (IBE), serving Quechua ethno-linguistic students from the Cusco region. The school's general data can be seen in Table 1.

In 2021, UNESCO in Peru, together with the Latin American Center for Learning and Solidarity Service (CLAYSS) and Antonio Ruiz de Montoya University started a process of training and support for rural secondary school teachers, attended by the administration and teaching staff of Virgen Asunción school. The objective was to start a pedagogical reform of the rural high school service, using the solidarity service-learning project methodology as a catalyst. This methodology has been applied in the Latin American region for twenty years, and adapts the project-based learning (PBL) model to learning situations arising from issues that affect a community, to which students respond with action that provides alternatives and solutions.

Cuadro 1. Datos generales de la Institución Educativa Virgen Asunción (2021)

Module code	0933531
Annex	0
Venue code	166038
Level	Secundary
Type	School
Category	Mixed
Administration type	Direct State
Address	Palomapata
UGEL)Local Education Department)	Acomayo
Village	Pillpinto
Geographical area	Rural
District	Pillpinto
Province	Paruro
Department	Cusco

Source: Map of schools. Educational quality statistics (Ministry of Education) (Escale-Minedu), https://sigmed.minedu.gob.pe/mapaeducativo/

The solidarity-service learning project methodology proposes that the school use a participatory approach and design to address a highly significant learning situation, which enables the school to link up with local community needs. This ensures that learning is relevant, and develops students' citizenship skills, as each student has the opportunity to participate in real-life activities, putting into practice what they have learned at school and having an impact on the needs or problems they experience (Tapia y Ojea 2018).

Project-based learning methodologies have for several years been an interesting alternative to the school model that focuses on conveying content to students, who play a passive role. This model is reinforced by an instructional level designed on the basis of curricular areas, and hampers collegial work for running integrated learning projects. This is different from pre-school and primary school levels, where teachers are usually in charge of all curricular areas of a grade level. Likewise, according to the description of secondary education in the Education Law (Law 28044), the very origin and meaning of secondary education is that it complements and expands on primary education. This leads to a strong bias towards content-centered activities, which is far removed from the action-oriented pedagogy proposed as a pillar of education for sustainable development.

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Hence an in-depth understanding of a successful rural secondary school experience with the service-learning methodology provides a highly interesting source of lessons for understanding the process of secondary school pedagogical reform, by identifying the educational community's advances and constraints at Virgen Asuncion Secondary School. This can guide the purposes of a relevant and competency-based secondary education, as proposed in the Peruvian Ministry of Education's National Curriculum for Basic Education and in the Guiding Framework for Adolescent Education, while considering the conditions necessary for achieving these changes in secondary school pedagogical practices, and with a focus on education for sustainable development.

Virgen Asunción school returned to in-person attendance in 2021, after 18 months of remote learning following school closures due to the COVID-19 pandemic and two medium-scale forest fires that affected families in the educational community. This context raised awareness about people's relationship with the environment and their role as an agency in climate change, and it was in these circumstances that the school began the project with the Horizons

Program's technical assistance. The school principal and his teaching staff used the service-learning methodology applied training and implementation through the project "How to prevent and mitigate the problem of pollution and environmental degradation in my community?" for rural high school students in the Pillpinto community. The project operated from July to October 2021, and applied a pedagogy relevant to the needs and potential of adolescents, the integration of curricular areas and the management of a more horizontal model, centered on the person and his or her overall development, with active learning, less focused on content and based on a pedagogy for climate action.

The integrated learning project used the methodology proposed by CLAYSS, summarized as follows:

1. Formation of a group of the school's teachers who belong to different pedagogical areas and who are interested in working with integrated projects.

2. Applied and practical teacher-training in service-learning methodology by CLAYSS.

3. Inquiry into students' interests and concerns about their community, as a starting point for project design.

4. Articulated planning between curricular areas, producing activities in an integrated learning project based on students' interests.

5. Implementation of the project according to the planning with the students, with hybrid activities - remote and in-person - as rural schools gradually returned to in-person classes.

6. Learning evaluation and project appraisal.

Action-oriented pedagogies: service-learning projects with a focus on environmental citizenship

The subject selected by the educational community and which guided the learning project "How to prevent and mitigate the problem of pollution and environmental degradation in my community?" was the result of a consultation on possible issues raised by the teaching team in an online survey. The project implemented learning activities based on this subject to diagnose and propose solutions, put them into practice and link them to formal learning in the areas of Communication, Science and Technology, Mathematics, Social Sciences and Religion with a focus on Intercultural Bilingual Education (IBE), Art, Education for Work and Physical Education[1]. Working in this way, the project integrated areas and focused them on the pedagogy for the people who are learning and on active learning, fostering their horizontal participation and their comprehensive development, based on their potential and their identity; and, above all, allowing them to exercise what they learn and empower their agency, so that they become agents who transform their context.

These actions are in line with the situated learning that follows the CLAYSS method. The manual, consulted and adapted for Peru, points out that:

" The transition from curricular learning to service-learning comes about when classroom work is put into practice in the field, by entering into a relationship with the environment in a solidarity activity as a response to a social need that is significant for the students and their community. It raises the question of whether curricular content can be socially projected and is relevant to the real needs of the target community, in order to perform an effective solidarity service" (Tapia and Ojea 2018: 26).

When asked, the school's teachers and students said that the problems addressed in the service-learning project would tackle a real and felt need of the educational community: as the school had been closed, the surrounding area had become a rubbish dump, which affected the hygiene of the environment. Additionally, in 2020 a forest fire had affected an area near the school and highlighted the lack of water in the nearby streams, as well as the huge amount of rubbish thrown into them. This was all a matter of concern for the educational community and increased their interested in addressing the issue. Students participated in all stages of the project: they defined the solutions, implemented them and gave them shape based on their own potentialities, identities and interests. They used their technological skills to record an awareness-raising spot for the community and shared with their peers their knowledge about sewing, embroidery, recycling and painting for the planned activities. They learned from each other - with the support of their teachers - with autonomy, decision making, problem solving and collaboration, among other competencies relevant to their cognitive and socio-emotional development stage. Through exchanging knowledge, they were also able to approach the Quechua culture's visions and cosmologies of the connection with the land and the reciprocity of good living (*allin munay*) as a basis for developing ethics and common purpose. The details of the school's planning are presented in Table 2.

As shown, the proposal addresses two of the key characteristics of solidarity-based learning methodology:

i. Propose targeted and effective solidarity service activities to meet a community's real and felt needs. This characteristic corresponds both to student reintegration in the semi-presential stage following school closure, which is the reason for implementing this proposal; and to the project subject, one close to the reality and concern of the educational community, which allows the

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1   The information in this section has been gathered from the pedagogical plans of the teaching team of Virgen Asunción school, Pillpinto, conducted in 2021 by teachers Soledad Rodríguez Valer, Yaned Fiorela Quispe Humpiri, Leonardo Carcausto, Adolfo Ramos Flórez, Roy Gilmar Huamán Mescco and Benjamín Arando Torres.

Table 2. Teacher planning work at Virgen Asunción school

Table of areas and competencies to be addressed in this part of the service-learning project

To formulate this justification, the students discussed and integrated information from the following areas:

Area	Competency to be developed
Communication (students formulate the justification after finding out more about the rubbish problem)	Oral communication in mother tongue.
	Reading in various types of text in mother tongue.
	Writing in various types of text in mother tongue.
Science and Technology (the investigation of the problem of poor waste management is based on the observation of the immediate environment)	Explaining the physical world based on knowledge about living things, matter and energy, biodiversity, the earth and the universe.
	Using scientific methods to investigate and solve problems in their environment.
Mathematics (discussions using calculation and approximation regarding the use of plastics; information given regarding excessive use of plastics)	Solving quantity problems.
	Solving data and uncertainty management problems.
Social Sciences (Review of the development and indiscriminate use of plastic. This will be input for drafting the justification for our project)	Building historical interpretations.

Definition of final product or performance

To mitigate and prevent the rubbish problem in the population of Pillpinto, the project proposes several products: painting graffiti and murals, making environment-friendly bags embroidered with phrases to raise awareness among the community, and re-using plastic material to make flower pots.

Table of areas and competencies to be addressed in this part of the service-learning project

Identifying activities for developing products.

PRODUCT 1: **Graffiti and murals**

The following steps will be taken for painting murals and graffiti:

1. Identify illegal rubbish dumps.

2. Clean and prepare the place to be painted.

3. Design messages and images regarding the care of the environment.

4. Paint murals and graffiti in strategic locations identified.

PRODUCT 2: **Production of environment-friendly bags embroidered with phrases to raise public awareness**

1. Select materials and equipment to be used (fabric, embroidery thread, sewing machine and overlocker).

2. Select embroidery stitches.

3. Design and cut fabric according to the bag models and sizes.

4. Sew bags from templates according to sizes and patterns.

5. Embroider and finish bags.

PRODUCT 3:
1. Select materials to be used (bottles, buckets, drums, etc.).

2. Design flowerpot models and shapes.

3. Cut and adjust materials for making flower pots.

4. Paint and finish flower pots.

Table of areas and competencies to be addressed in this part of the service-learning project.

Area	Competency to be developed
Education for work (environment-friendly bags and flower-pots)	Managing economic and social entrepreneurship projects.
Art (murals and graffiti)	Critical appreciation of art and culture.
	Creating projects with artistic languages.
Physical education (assembling painting and graffiti panels)	Developing a healthy life-style.
	Interacting through social and motor skills.

students to be agents of change connected to the environmental issues and sustainability of their community.

ii. Students exercise their citizenship by actively leading activities linked to their learning objectives in real learning situations in the community. ❶

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