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Hope Pedagogies in Times of Crises: A Cross-Cultural Study

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Acknowledgments

I would like to start by thanking my family and friends for being the foundational rock upon which I stand. I also deeply thank my partner Marina for her unwavering support and love.

I am indebted to the three school communities that were part of this study. They opened their arms with generosity and allowed me to witness the utopian worlds they are trying to create. I would also like to thank Alfredo Jornet Gil and Peter Renshaw for their generosity in reviewing this work. Last but certainly not least, I thank Alessio Surian, my mentor and friend who guided me throughout this process, shared his infinite knowledge, and opened his home to me. To all of you, gracias, de corazón.

Finally, I echo the voices of the elderly from the Yoreme people in Sonora, Mexico¹:

“Para ser sabios y libres, es el cuerpo del pensamiento lo que debemos cultivar, del mismo modo en que cultivamos el universo que nos pregunta:

En qué se parece tu pensamiento a los millones de estrellas que anidan en el cielo.

En qué se parece tu pensamiento al viento de la tarde.

En qué se parece al sol que alumbra y nos da vida.

En qué se parece a un águila en vuelo.

En qué se parece a un río caudaloso.

En qué se parece tu pensamiento al bosque.

En qué se parece a un árbol.

En qué se parece tu pensamiento a una milpa sembrada.

En qué se parece a los granos del elote.

En qué se parece a la tierra reverdecida.

Para ser sabios y libres, es el cuerpo del pensamiento lo que debemos cultivar, del mismo modo en que cultivamos el universo.”

To be wise and free, it is the body of thought that we must cultivate, just as we cultivate the universe that asks us:

How does your thought resemble the millions of stars that nest in the sky?

How does it resemble the evening wind?

How does it resemble the sun that shines and gives us life?

How does it resemble an eagle in flight?

How does it resemble a mighty river?

How does it resemble a forest?

How does it resemble a tree?

How does it resemble a planted cornfield?

How does it resemble the kernels of corn?

How does it resemble the green earth?

To be wise and free, it is the body of thought that we must cultivate, just as we cultivate the universe.

¹ Excerpt taken from (Merçon, 2020, p. 34)

Abstract

This dissertation investigates how formal education can foster critical engagement with the intertwined social, political, and ecological crises of our time. Adopting a multiple-case study methodology, this research explores three schools in Argentina, Italy, and Uruguay that are recognised for their commitment to sustainability. By examining the pedagogical approaches and perceptions among students and educators, this study aims to understand how schools can scaffold the development of sustainability competences in students aged 11-15.

This research, grounded in a critical cultural-historical framework, employs mixed-methods including semi-structured interviews, student survey, photovoice, self-narratives, and participant observation to offer a comprehensive analysis of how different educational settings influence the understanding and practice of sustainability. The findings highlight distinct pedagogical approaches across the schools: political education, STEM-oriented, and nature-based education. Each approach presents its own strengths and limitations in fostering both awareness and action toward critical engagement with social, political and environmental issues.

This study highlights the need for educational practices that integrate social, political, and environmental dimensions to cultivate a holistic understanding and action among students. By practising hope, collective action and place-based education, schools can play a pivotal role in supporting students to address the complex challenges of our world. The findings of this study call for educational models that are adaptable, context-specific, and capable of fostering systemic change. Additionally, this research offers practical recommendations for educators and policymakers seeking to implement critical and transformative pedagogies in diverse educational settings.

Riassunto

Questa tesi indaga come l'istruzione formale possa promuovere un impegno critico nei confronti delle crisi sociali, politiche ed ecologiche del nostro tempo. Adottando una metodologia di studio di caso multiplo, questa ricerca esplora tre scuole in Argentina, Italia e Uruguay, riconosciute per il loro impegno nella sostenibilità. Esaminando gli approcci pedagogici e le percezioni di studenti ed educatori, questo studio si propone di capire come le scuole possano favorire lo sviluppo di competenze in materia di sostenibilità negli studenti di età compresa tra 11 e 15 anni.

Questa ricerca, fondata su un quadro critico storico-culturale, utilizza metodi misti, tra cui interviste semi-strutturate, questionari per studenti, foto-narrazioni, auto-narrazioni e osservazioni partecipanti, per offrire un'analisi esaustiva di come i diversi contesti educativi influenzino la comprensione e la pratica della sostenibilità. I risultati evidenziano approcci pedagogici distinti tra le scuole: educazione politica, educazione orientata alle materie STEM e educazione ambientale. Ogni approccio presenta punti di forza e limiti nel promuovere sia la consapevolezza sia l'azione verso un impegno critico nei confronti delle questioni sociali, politiche e ambientali.

Questo studio evidenzia la necessità di pratiche educative che integrino le dimensioni sociali, politiche ed ambientali per coltivare una comprensione olistica ed azione tra gli studenti. Attraverso la pratica della speranza, l'azione collettiva e l'educazione basata sul luogo, le scuole possono svolgere un ruolo fondamentale nel sostenere gli studenti ad affrontare le complesse sfide del nostro mondo. I risultati di questo studio richiamano la necessità di modelli educativi adattabili, specifici per il contesto e in grado di promuovere un cambiamento sistemico. Inoltre, la ricerca offre raccomandazioni pratiche per gli educatori e decisori politici che cercano di implementare pedagogie critiche e trasformative in contesti educativi diversi.

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1. Introduction

1.1 Background

Social, political, and ecological crises are the defining issues of our time. From an escalating climate crisis and deepening socio-economic inequalities to political instability, these challenges represent existential threats for a just and habitable present and future. The role of education in such complex issues is not neutral (Perkins *et al.*, 2018). The fact that education plays a crucial role in reshaping societal structures is widely recognised. Nevertheless, there is ongoing debate regarding the nature of education and the best methods for adapting them to local contexts (Reid, 2019).

The crises we have been undergoing are, in part, a direct consequence of social and political issues. As a global society, we have yet to properly deal with profound inequalities in terms of rights: right to live well, right to live in peace and right to flourish as individuals and in community. These inequalities are accentuated by disparities based on gender, race and coloniality (Sultana, 2022). The climate crisis is one of the ecological challenges we are facing, but it is not the only one. Recent studies have shown that climate change is one of the six planetary boundaries that we have exceeded along with freshwater change, novel entities, biogeochemical flows, land system change, and biosphere integrity (Richardson *et al.*, 2023). A detailed examination of the 2023 assessment reveals that we have surpassed all boundaries except for three (see Figure 1), while ocean acidification is rapidly approaching the critical threshold.

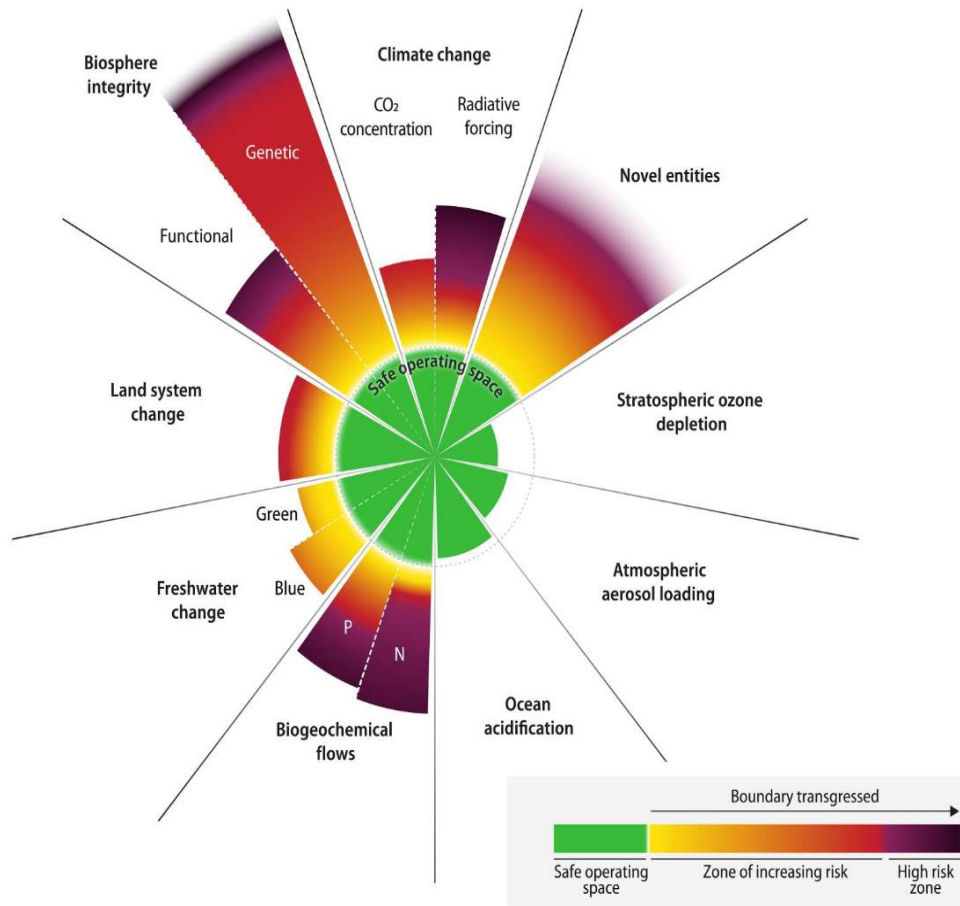


Figure 1. Planetary Boundaries (Richardson *et al.*, 2023).

There are no possible “climate solutions” unless social, political and economic inequalities are simultaneously addressed. Thus, education can be a crucial means to lever significant changes at the individual, collective and systemic level that tend towards equity, social justice and wellbeing while steering away from fossil fuels (Armstrong McKay *et al.*, 2022).

Orr (2004) argues that the root of the environmental crisis, or the surpassing of planetary boundaries, lies in our inability to recognise ecological patterns, causal relationships, and the long-term consequences of human actions; this disconnect leads to problems such as deforestation, soil degradation, species extinction, pollution, social disintegration, inequality, and economic inefficiencies. Pascual *et al.* (2023) argue that a “values crisis” underpins the interconnected crises of climate change and biodiversity loss (Pörtner *et al.*, 2023), and socio-environmental injustices (Ivanova and Lele, 2022).

The relationship between human activities, education and environmental impact is complex. Individuals who have a higher educational level generally have a larger carbon footprint. This correlation can be attributed to a more intensive use and consumption of private transportation, food, water and goods (Wals and Benavot, 2017; Komatsu, Rappleye and Silova, 2020).

Some scholars argue that having access to environmental education, information about climate change and ecology have been beneficial in fostering behavioural changes regarding reducing waste and energy use, choosing lower emission methods of transportation and recycling (Wals and Benavot, 2017). This would seem to imply that some types of education might increase our care for the environment at the local and global levels. Nonetheless, how students acquire such knowledge and skills is an ongoing fundamental debate for educators and policymakers. Focusing mostly, or even only, on environmental aspects is a common shortcoming of pedagogical approaches that claim to be “sustainability oriented”.

Formal education has played a pivotal role in perpetuating the dominant socio-political, cultural, and economic systems since its emergence. As highlighted by various scholars, formal education has been instrumental in shaping national identities (del Pozo Andres, 2000; Baker and Letendre, 2005) and advancing industrial economies (Carl, 2009). These developments have significantly contributed to both cultural homogenisation and environmental degradation. Despite its direct and indirect contributions to the current state of social, political and environmental crises, formal education is still widely regarded as a potential catalyst for change, whether at the individual (Biesta, 2013) or collective level (Freire, 1997). The contemporary focus on critical and transformative education is evident in various educational experiences, spaces, levels, and political-pedagogical programs (Merçon, 2020).

Orr (2004) challenges several myths in education, starting with the misconception that ignorance can be fully eradicated, arguing that as knowledge grows, so does ignorance. He critiques the notion that humanity can “manage” the Earth through knowledge and technology, emphasising instead that we must manage ourselves and our desires within the limits of the planet. He distinguishes between the rapid increase of information and the true growth of wisdom, noting that vital local and personal knowledge is often lost in modern society. He also critiques higher education’s fragmented approach, where disciplines are disconnected, leading to professionals who lack a holistic understanding of the world’s systems. He argues that education should aim at having graduates who are not merely successful by conventional standards, but who are peacemakers, healers, and morally courageous individuals committed to making the world more humane. Last but not least, Orr (2004) condemns the cultural arrogance that sees modern society as the pinnacle of human achievement, pointing out the failures of both communism and capitalism, and highlighting the deep social and environmental costs of unchecked economic systems.

In face of the climate crisis, there is an evident anthropocentric perspective in framing the current geological era as the “Anthropocene”, a term popularised by scientists such as Nobel

Prize-winning chemist Paul Crutzen (De Carlo and Surian, 2023). This term draws attention to the significant impact of human activity on the environment, marking a fundamental discontinuity with the Holocene epoch. In contrast, scholars like Thomas Berry and Brian Henning prefer the term “Ecozoic era”, emphasising a less anthropocentric view and highlighting the urgency of choosing between the current technozoic-industrial approach and a potential ecozoic-biological transition (De Carlo and Surian, 2023). They acknowledge that the Cenozoic era, i.e. the last 65 million years, is being disrupted by the dynamics triggered by emissions, pollution and environmental exploitation, phenomena that have accompanied the industrial revolution and the dominance of local interests driven by what Brian Swimme refers to as the “local mind” (De Carlo and Surian, 2023).

Schugurensky (2017) argues that when considering learning processes, adopting the “Ecozoic” framework instead of the term “Anthropocene” involves modernising Freire's Pedagogy of the Oppressed towards an Earth Pedagogy, which acknowledges that awareness alone is necessary but insufficient for transformative actions (De Carlo and Surian, 2023). This perspective complements the Earth Charter (1997), which advocates for encouraging and developing, through educational processes, experiences of reflection, critical analysis, tolerance, cooperation, compassion, and respect. This approach intersects with research and proposals related to learning and change within the context of education for sustainability (Hicks, 2012) and transformative education (O’Sullivan, 1999; Blake, Sterling and Goodson, 2013).

The primary gaps identified in current scholarship in the field of Global Citizenship Education as a transformative tool towards a more just and habitable planet revolve around the lack of integration between social, environmental and political aspects. There is a growing consensus that these crises are interconnected, yet many existing pedagogical approaches treat them as separate concerns and often fail to engage students as active political agents capable of addressing these issues. This dissertation explores the pivotal role of education in addressing these crises in three contexts. By fostering students to critically engage with their social, political and environmental surroundings, question dominant systems of power, and envision alternative futures, education becomes a realm of resistance and possibility.

1.2 Objective of the Study and Research Questions

This study aims to explore the educational conditions and practices that shape attitudes and behaviours towards social, political and ecological crises in three schools that are renowned for their work towards sustainability in Argentina, Italy and Uruguay. A critical cultural-historical framework is used to analyse how these schools respond to local and global crises, emphasising the importance of context in shaping pedagogical practices. Methods include semi-structured

interviews with educators, surveys with students, experiential learning workshops that include photovoice and self-narratives activities, and participant observations. These methods allow for a comprehensive exploration of how education can tackle the challenges of an uncertain present and future. The research questions and sub-questions are:

Research Question 1) How do schools provide scaffolding to students aged 11-15 towards developing sustainability competences?

Research Question 2) How do students and educators perceive sustainability? To what extent is their perception aligned with the school's educational project?

Sub-question 1) What are the defining characteristics of schools that emphasise critical Global Citizenship Education, and what can we reflect on their educational approaches?

Sub-question 2) What is the relationship between the context in which the project is immersed and its critical Global Citizenship Education practices?

Sub-question 3) How do students perceive their futures? What are the general sentiments expressed in their narratives about their own future lives?

The primary aim of this research is to investigate how formal education can provide scaffolding to students through the development of knowledge, skills, and critical awareness to address the intertwined social, ecological, and political crises. For this work, scaffolding is understood as educational support and practices that include ethos, curriculum, pedagogical methods, and dialogue. This dissertation seeks to contribute to the growing body of literature on the role of education for a more just and equitable future. In addition to its theoretical contributions, this research also aims to provide practical recommendations for educators and policymakers. By examining how different schools have implemented critical and transformative pedagogies in three diverse contexts, this study identifies strengths and potential challenges for integrating critical pedagogical approaches into mainstream educational systems. These insights are intended to support the development of educational policies and programs that are better equipped to respond to the complex and multifaceted crises of our time.

1.3 Empirical Methodological Strategy

This research follows a multiple-case study methodology (Yin, 2018). The schools are located in Argentina, Italy and Uruguay and each of them represents a distinct social, cultural and political context; thus, allowing for a comparative analysis of how different educational projects

approach the challenge of educating students about socio-ecological crises. The schools were selected based on their commitment to sustainability and their use of critical pedagogical approaches. In each of the schools, methods involved conducting semi-structured interviews with adult stakeholders, a student survey, experiential learning workshops with a focus on photovoice and students' self-narratives, and participant observation. The integration of these methods enhances the study's overall depth and robustness, as each method addresses distinct dimensions of the research questions.

The semi-structured interviews with adult stakeholders allow for an in-depth exploration of their perspectives and experiences regarding the educational factors that influence their practices. This method's flexibility facilitates focused discussions while adhering to a consistent interview framework, yielding rich qualitative data that captures the complexity of the participants' perspectives. The student survey offers a quantitative dimension to the research, identifying patterns and trends in students' attitudes and behaviours related to sustainability. Complementing this, experiential learning workshops that emphasise students' self-narratives and photovoice employ participatory techniques, engaging students actively in the research process. These workshops provide a platform for students to creatively express their views, offering deeper insights into how they perceive sustainability and their futures. Self-narratives help students form emotional and cognitive connections, while photovoice allows them to visually document and discuss their perspectives, adding a layer of narrative data that enriches the study's findings.

Participant observation serves to further contextualise the data. This method enables the observation of informal and non-structured interactions, offering insights into the everyday practices and social dynamics within the school which might not be captured through other data collection techniques. Following Bryman's (2006) principle of complementarity, this mixed-methods approach enables triangulation, thereby enhancing the credibility and comprehensiveness of the findings.

1.4 Structure of the Dissertation

This dissertation is organised as follows. Chapter 2 is the Literature Review, and it explores key theoretical frameworks and pedagogical approaches to address social, political and environmental issues. It begins by addressing the conceptual fluidity of "sustainability", discussing how its diverse interpretations impact different sectors. The chapter then delves into the ecological, cultural, and political dimensions of sustainability, incorporating political ecology and Vygotsky's cultural-historical theory (Vygotsky, 1978) as structural frameworks. Then, it examines several educational approaches, such as Education for Sustainability (EfS) (Huckle and

Sterling, 1996), Ecopedagogy (Freire, 1997; Gadotti, 2009), and Transformative Learning for a Sustainable Future (TLS) (Laininen, 2019), focusing on their potential to drive both individual and systemic transformation. The review emphasises the importance of political, place-based, and dialogical education in fostering active citizenship and critical consciousness. The last section of the chapter delves into the literature of methods used during the data collection and analysis such as question variance and photovoice.

Chapter 3 is focused on Methodology, and it outlines the methodology undertaken. This research adopts a multiple-case study methodology (Yin, 2018), and selects three renowned schools in Italy, Argentina, and Uruguay as case studies. This approach enables the study to explore how different educational contexts influence the implementation of sustainability-oriented pedagogies. Then, the methods conducted are described: semi-structured interviews with stakeholders, a student survey, experiential learning workshops, and participant observation. These methods were chosen for their complementarity, allowing for both qualitative depth and quantitative analysis. Each method contributes to a holistic understanding of how sustainability is perceived and carried out in practice in each educational setting. The chapter then discusses data triangulation (Bryman, 2006) and reflexive thematic analysis (Braun and Clarke, 2022) as important concepts for data analysis and validating findings. Lastly, ethical considerations and positionality are presented and a brief discussion on how they shape the data collection and analysis is outlined.

Chapter 4 presents the findings, and it synthesises key insights from the data collected across the three schools. Key themes in the findings include students' eco-anxiety, technological aspirations, and varying perspectives on sustainability and their futures. The survey data revealed widespread eco-anxiety and solastalgia, and a strong consensus on gender equality, but also highlighted contradictions in students' attitudes. The self-narratives about their futures showed that students across all schools imagine technologically advanced futures but expressed pessimism about environmental and economic conditions, particularly in Argentina and Uruguay. Photovoice analysis emphasised the importance of nature, community, and consumption habits in students' understanding of sustainability, with differences in how students from each country interpreted these themes. Interviews with educators and participant observations revealed that each school faces unique challenges and opportunities, from fostering community engagement to balancing innovation with limited resources, highlighting how local contexts shape educational practices.

Chapter 5 presents the discussion, and it engages with the strengths and limitations of the research, reflecting on the practical and theoretical implications of transformative pedagogies.

The chapter begins by addressing research validity and limitations through multiple strategies. For instance, the study's reliance on self-reported data and its cross-sectional design, are also discussed, suggesting the need for longitudinal studies to better capture shifts in students' and educators' perspectives over time. The chapter then explores collaborative storytelling, particularly through digital narratives like photovoice, as a tool for deepening students' connection to sustainability issues and as an update to Freinet's inter-school correspondence. This approach is linked to the concept of *perezhivanie* as proposed by (Renshaw, 2021), where emotional and cognitive engagement are essential for transformative learning. Then, philosophical and policy implications are addressed; the chapter first critiques the overuse and dilution of the term "sustainability" and challenges dominant Western pedagogical models like Student-Centred Learning (SCL). The chapter advocates for a place-based, situated and context-sensitive approach, drawing on alternative cosmovisions like *Buen Vivir*, which emphasises collective well-being, ecological harmony, and cultural diversity. Finally, the chapter introduces the Critical Transformative Ecopedagogy (CTE) framework, which synthesises various pedagogical theories to address socio-environmental challenges through education, framing it as a powerful tool for social change. This perspective contrasts sharply with the inherent individualism in SCL, positioning education as a collective process aimed at fostering wellbeing.

Chapter 6 is the conclusion. This chapter summarises the key findings of the research and reflects on its theoretical and practical contributions. It also suggests avenues for future research. The conclusion reiterates the importance of education in addressing the social, ecological, and political crises of our time and calls for a more integrated, situated, context-dependent, and transformative approach for education for a just and habitable future.

2. Literature Review

2.1 Introduction

This literature review chapter describes the fundamental theoretical underpinnings for this research. The chapter begins by presenting basic concepts of political ecology, which in this work has been a useful lens to understand and rethink education practices. Then, the fluidity of the term “sustainability” in education is discussed, as well as its widespread adoption across various sectors, and the challenges associated with its diverse interpretations. The chapter further expands into describing sustainability competences and spheres of transformations to address ecological, cultural, and political dimensions. Then, key concepts of political ecology and Vygotsky’s cultural-historical theory are introduced. These are fundamental to contextualise the subsequent section on education and for the analytical framework of this study.

Then, the chapter introduces definitions and typologies of Global Citizenship Education (GCE). Given its fluid meaning, concepts such as Ecopedagogy, Education for Sustainability (EfS), Transformative Learning for a Sustainable Future (TLS), emancipatory political education, place-based education and dialogical education are discussed and deemed essential elements of GCE. The role of each of these perspectives in promoting active citizenship is considered, emphasising their contributions to fostering critical consciousness and collective action.

This section is followed by a subsection that describes key literature reviewed for the methodology of this study. That includes the survey development based on a systematic literature review and relevant methodological elements such as question variance for survey data analysis, as well as a brief introduction to photovoice and its limitations.

2.2 Political Ecology

Political ecology intersects research fields such as the politics of knowledge, political economy, social issues and environmental degradation, examining how power relations shape interactions between humans and their environment (Robbins, 2004; Biersack, 2006; Goldman, Nadasdy and Turner, 2011; Meek and Lloro-Bidart, 2017). Despite the absence of a universally accepted definition, political ecology broadly scrutinises the influence of power dynamics in the intersection between social and environmental issues (Biersack and Greenberg, 2006; Meek and Lloro-Bidart, 2017). A critical aspect of this field is the concept of place, which is viewed variably as inherently local, a point of local-global intersection, or a site for pedagogical exploration in environmental education (Biersack, 2006; Gruenewald and Smith, 2008).

Educators that focus on environmental issues are increasingly adopting a critical perspective on place that is characterised by decolonisation and reinhabitation (Gruenewald, 2003b; Swayze, 2009; Scully, 2012; Tuck, McKenzie and McCoy, 2014). Santos (1986) argues that place should be considered a fundamental component of society, equivalent to the economic and cultural-ideological dimensions. He asserts that place is both inclusive of and integrated within these other dimensions, such as the economy, politics, and culture. Thus, the notion of place is inherently social; it is not merely a collection of natural or artificial geographical objects. Instead, place encompasses these elements in conjunction with society, with each segment of nature embodying a segment of society (Santos, 1986).

This notion of place as inherently social (Santos, 1986) invites us to rethink how we regard our surroundings, nature, wilderness and wildness. Cronon (1995) addresses misconceptions regarding the concept of wilderness and differentiates it from the notion of wildness (Jickling *et al.*, 2018). Unlike wilderness, which often connotes vast, untamed landscapes, wildness can manifest in a variety of settings such as woodlots, parks, school grounds, and vacant lots, and can even be present within classroom environments (Jickling *et al.*, 2018). These spaces, while capable of inspiring wonder and serving as valuable pedagogical sites, require a critical approach when engaged with. It is important to recognise that not all wild places have the same characteristics or values. Instead, wilderness could be understood as existing on a continuum, encompassing varying degrees of wildness (Jickling *et al.*, 2018). This nuanced perspective encourages a more comprehensive and critical appreciation of different natural environments and their potential roles in education.

The role of nature in educational processes is important. Fletcher (2015) proposes that environmental education should discard the term “nature” altogether and in turn is in favour of “socionatures” or “assemblages” to dissolve the nature/culture divide and focus on material power relations that influence environmental education and the politics of nature, such as neoliberalism and capitalism (Meek and Lloro-Bidart, 2017). This can be connected to the concept of feel-think (*sentipensar* in Spanish), which was originally proposed by Colombian sociologist Orlando Fals Borda in connection with participatory action-research (PAR) territorial mapping and planning (Escobar, 2014). This shift aligns with the broader aim of political ecology to critically interrogate the power structures underlying environmental issues, fostering a more integrated understanding of human-environment relationships and the political contexts that shape them. Socionature (*socionatureza* in Portuguese) has been defined as the closely knit relationship between society and nature (Gasché Suess and Vela Mendoza, 2011). Repetto and Carvalho (2015) argue that society engages with nature through various transformative tools, and culture emerges because of this interaction. Similarly, Gasché Suess (2008) proposes a

“syntactic” approach, understanding culture as an integral part and outcome of society's relationship with nature.

Political ecology not only provides a framework for analysing social and environmental change but also offers critical insights for rethinking education practices in ways that are more inclusive of the complex and intertwined features of socio-environmental systems.

2.3 Sustainability in Education

Sustainability has emerged as one of the most frequently used concepts in recent years. However, one of the difficulties in addressing sustainability within education lies in the absence of a universally agreed definition of the term (Huckle and Sterling, 1996). Sustainability is often assigned varying interpretations, making it a flexible and ambiguous term, with its meaning shaped by both the sender and the receiver of the message (Kioupi and Voulvoulis, 2019).

Since sustainability is commonly viewed in a positive light and its meaning can be adapted, the term has seen widespread application across a diverse range of, at times, conflicting agendas in the past decade or so. Sustainability has become relevant not only for governments, general public and environmentalists, but also for businesses and marketing purposes. This has sprouted the use of “eco”, “sustainable” and “green” products and labels across all industries, from supermarkets to airlines, regardless of their predatory neoliberal business models.

Otto *et al.* (2020) claim that sustainability cannot be imposed, it has to be learned. Sustainability knowledge, as described by Miller, Muñoz-Erickson and Redman (2011), is characterised by the following key attributes: it acknowledges the complexity of system dynamics, possesses social robustness, is validated by multiple epistemic cultures, and integrates normative criteria. These criteria, which will be further examined below, are context-dependent and should be adaptable to different circumstances. Sustainability has been conceptualised and categorised based on diverse criteria². One such framework divides it in two categories (Gadotti, 2009):

² In Spanish, there are two terms that are used for sustainability: “sustentabilidad” and “sostenibilidad”. The term sustainability was translated differently regionally e.g. in Argentina “sustainable development” was translated as “desarrollo sustentable” whereas in Mexico as “desarrollo sostenible” (Zarta Ávila, 2018). Some authors suggest that even though these terms emerged from the Burtland Report in 1987, they have acquired different meanings over time (Zarta Ávila, 2018). In short, “sustentabilidad” implies transversality between the environmental, social and economic spheres, whereas “sostenibilidad” regards each of these spheres separately (Zarta Ávila, 2018).

- Ecological, environmental and demographic sustainability: it refers to the physical natural limits and how nature can cope with human activities.
- Cultural, social and political sustainability: it deals with interculturality, identity, diversity and how these are related to quality of life, justice and participatory citizenship.

Taking a more practical approach, (Huckle and Sterling, 1996) classify sustainability as “weak” or “strong”. The former refers to a definition of sustainability more aligned with the neoliberal concepts of consumerism, “green” jobs and industries. In short, doing what we do, but “better”. On the other end of the spectrum, “strong” sustainability challenges the social, economic and cultural paradigms that have led to our climate breakdown. It entails systemic change, from what we eat, to what is a “good” life, among other complex cultural paradigmatic questions (Huckle and Sterling, 1996).

This classification is a spectrum, and therefore a specific policy or education practice, can tend towards one end or another. Needless to say, “weak” forms of sustainability have been welcomed by governments and businesses, as well as by the education system (Huckle and Sterling, 1996). There have been countless initiatives and policies for the “green” transition, and little discussion regarding the economic and political systems that are in place which are largely responsible for the social, political and climate crises we are facing. This might partly explain why, even within educational projects that claim to be focused on sustainability, there has been a focus on individual actions such as recycling, reducing personal water consumption, eating less meat, and flying less, instead of systemic challenges to capitalism, tax systems that benefit the elites, the crises of democracies, to name a few.

Sustainability inherently imposes limits on resource appropriation and the permissible effects on the environment. A fundamental first step is to establish a boundary on environmental exploitation, whether in the form of resource extraction or the imposition placed on ecosystems to manage waste or pollutants (Gudynas, 2010). Sustainability does not require an untouched natural environment, nor does it disregard social considerations. Even the most stringent interpretations of sustainability advocate for the responsible use of natural resources to improve human well-being. This issue can be analysed through the lens of resource consumption, including the use of natural materials and energy (Gudynas, 2010).

The primary aim of sustainability is to ensure that people can meet their needs, which in most contexts in the Global South translates to addressing poverty. Consequently, productive

processes must surpass a “poverty threshold” to ensure that no individuals remain in impoverished conditions (Gudynas, 2010). It is also crucial to combat the excessive and wasteful use of natural resources, as such overconsumption leads to significant environmental problems. This, in general terms, is a challenge in the Global North - and in elites in the Global South. High consumption exerts pressure on the environment by increasing resource and energy appropriation and by contributing to impacts such as greenhouse gas emissions and solid waste production (Gudynas, 2010). Additionally, overconsumption of the few exacerbates underconsumption of the many, creating stark disparities in resource access. These factors call for establishing an “opulence threshold” that should not be exceeded (Gudynas, 2010).

The last classification of sustainability that is presented in this chapter, comes from the Global South and proposes a spectrum: unsustainability, weak sustainability, strong sustainability and super strong sustainability (Gudynas, 2010). In short, unsustainability is the current dominant ideology which prioritises economic growth and disregards environmental dimensions. Weak sustainability is still characterised by an ideology of “progress” and economic growth goals, but the natural environment is quantified in terms of economic potential (Gudynas, 2010). Strong sustainability still quantifies nature, but criticises, to some degree, the idea of progress through a technical-political approach. Last, super strong sustainability has a biocentric perspective, in contrast to an anthropocentric one in the previous approaches, fosters a plurality of knowledge, proposes a critique of development attached to progress, advances the idea of commons and nature as patrimony, and undertakes an environmentally focused political approach (Gudynas, 2010).

From a political standpoint, Eco-socialism, to which several green political parties adhere to, offers a sharp critique of capitalism, asserting that the solution to alternatives lies in shifting away from the focus on exchange value and returning to use value (Gudynas, 2010). However, the challenge with this perspective is that it continues to uphold an anthropocentric valuation, wherein elements of nature are seen as valuable only in terms of their utility to humans (Gudynas, 2010). Eco-socialism maintains a materialist stance and a belief in progress, which are classic components of its modernist heritage (Gudynas, 2010). Consequently, classical eco-socialism aligns with both weak and strong sustainability perspectives but not necessarily with the super-strong perspective. The super-strong perspective transcends materialism, acknowledges value scales beyond the human, and aims to surpass the modernist project (Gudynas, 2010). In other words, biocentrism renders super-strong sustainability as post-socialist. Several authors clarify that the social and solidarity economy does not exclude the market; rather, it works towards regulating and democratising it (Gudynas, 2009), and must move beyond a centralised planning State (Coraggio, 2009).

In view of the above, it becomes imperative to define sustainability. For this dissertation, sustainability is defined as “opposed to everything that suggests unbalance, competition, conflict, greed, individualism, domination, destruction, expropriation and undue unbalanced material acquisition, regarding change and social transformation of society or environment. So in the most generous and widest way, sustainability means a new egalitarian way, a free, fair, inclusive and solidarity way to get people together in order to build their social living world at the same time that they handle, manage or transform the natural sustainable environment where they live and on which they depend to live and be together” (Brandão, 2008, p. 136 as cited in Gadotti, 2009, p. 204). Therefore, henceforth whenever the term sustainability is used and not attributed to the works of other authors, this is the intended meaning.

2.4 Sustainability Competences

The European Commission offers a comprehensive review of Sustainability Competences (Bianchi, 2020), highlighting the critical role of fostering and practising education as a means of achieving sustainability. The review largely draws on the work by Brundiers *et al.* (2020) and identifies eight essential competences that are pivotal for promoting sustainability:

Competences	Definitions
<i>Systems thinking</i>	As in Wiek et al., 2011, p. 207 (See Table 1)
<i>Futures-thinking</i>	To be able to iterate and continuously refine one's own futures thinking (visions, scenarios, etc.), in productive and explicit tension to the status quo; recognizing the implicitly held (and largely unrecognized) assumptions about how society works and how they influence the status quo and critically reflecting how they might influence futures thinking
<i>Values-thinking</i>	To be able to differentiate between intrinsic and extrinsic values in the social and natural world; to recognize normalized oppressive structures; to identify and clarify one's own values; to explain how values are contextually, culturally, and historically reinforced; to critically evaluate how particular stated values align with agreed-upon sustainability values; and to differentiate between espoused values and practiced values.
<i>Strategic-thinking</i>	To be able to recognize the historical roots and embedded resilience of deliberate and unintended unsustainability and the barriers to change; to creatively plan innovative experiments to test strategies.
<i>Interpersonal</i>	To be able to apply the concepts and methods of each competency not merely as “technical skills,” but in ways that truly engage and motivate diverse stakeholders and to empathically work with collaborators’ and citizens’ different ways of knowing and communication.
<i>Integrated problem-solving</i>	To be able to combine and integrate steps of the sustainability problem solving process or competences, while drawing on pertinent disciplinary, interdisciplinary, transdisciplinary, and other ways of knowing.
<i>Implementation</i>	The collective ability to realize a planned solution toward a sustainability-informed vision, to monitor and evaluate the realization process, and to address emerging challenges (adjustments), recognizing that sustainability problem-solving is a long-term, iterative process between planning, realization, and evaluation
<i>Intra-personal or self-awareness</i>	The ability to be aware of one's own emotions, desires, thoughts, behaviors, and personality, as well as to regulate, motivate, and continually improve oneself drawing on competences related to emotional intelligence and social and emotional learning

Figure 2. Sustainability competences (Bianchi, 2020, p. 18).

Wiek, Keeler and Redman (2011) define systems thinking as the capacity to collaboratively examine intricate systems spanning various domains such as society, environment, and economy, and different levels - from local to global. This approach considers elements like feedback loops, inertia and cascading effects pertinent to sustainability challenges and frameworks for addressing them.

Futures-thinking competence involves the skill of repeatedly refining and revising one's ability to imagine future possibilities, while critically questioning the present state of affairs (Brundiers *et al.*, 2020). This entails uncovering and recognising the hidden assumptions that shape societal norms and understanding how these assumptions influence current conditions. It also requires critically reflecting on how these underlying beliefs could affect the way we think about and plan for the future (Brundiers *et al.*, 2020).

The values-thinking competence involves the ability to distinguish between intrinsic and extrinsic values within both the social and natural realms (Brundiers *et al.*, 2020). It includes recognising entrenched oppressive structures and identifying one's personal values. This competence also requires understanding how values are shaped by their cultural, historical, and contextual backgrounds, and critically assessing the extent to which specific values align with widely accepted sustainability principles (Brundiers *et al.*, 2020).

The strategic-thinking competence involves the ability to identify the historical origins and persistent nature of both intentional and unintentional unsustainable practices, as well as the obstacles to achieving change (Brundiers *et al.*, 2020). It also includes the capacity to design and implement innovative experiments aimed at testing various strategies for sustainability. The interpersonal competence focuses on utilising the concepts and methods of various competences beyond technical skills, ensuring they engage and inspire a broad array of stakeholders (Brundiers *et al.*, 2020). It involves working with empathy, acknowledging and respecting the diverse knowledge bases and communication methods of collaborators and community members, to facilitate effective and inclusive collaboration (Brundiers *et al.*, 2020).

The integrated problem-solving competence, as described by Wiek, Keeler and Redman (2011) and further developed by Wiek *et al.* (2016), involves the effective combination of two or more sustainability-related competences to address complex sustainability challenges. This competence emphasises the capacity to synthesise multiple key competences to generate solutions that are not only sustainable but also equitable. The ultimate goal is to integrate all key competences to develop holistic approaches for tackling sustainability problems (Brundiers *et al.*, 2020). The intra-personal or self-awareness competence involves the capacity to

recognise one's own desires, emotions and behaviours, along with the capacity to self-motivate, regulate, and continuously grow (Brundiens *et al.*, 2020). This competence draws upon principles of social and emotional learning, and emotional intelligence (Goleman and Boyatzis, 2017).

An implementation competence involves the combined ability to carry out a proposed solution that aligns with a sustainability-driven vision, as well as to track and evaluate the process while adapting to unexpected obstacles through necessary adjustments (Brundiens *et al.*, 2020). It recognises that addressing sustainability challenges is a long-term, iterative effort that encompasses stages of planning, execution, and assessment. This competence emphasises purposeful and strategic action such as carrying out the steps of the solution that arise from the intellectual outcomes of integrated problem-solving competence (Brundiens *et al.*, 2020). It is worth noting that (Brundiens *et al.*, 2020) identified values-thinking as a leading competence thus offering a normative direction for the other competences and elucidating the values that are inherent within the framework.

2.5 Spheres of Transformation

Transformation can occur at various levels. O'Brien and Sygna (2013) argue that the personal, political, and practical spheres of transformation are interconnected, and they play a crucial role in shaping societal structures and solutions:

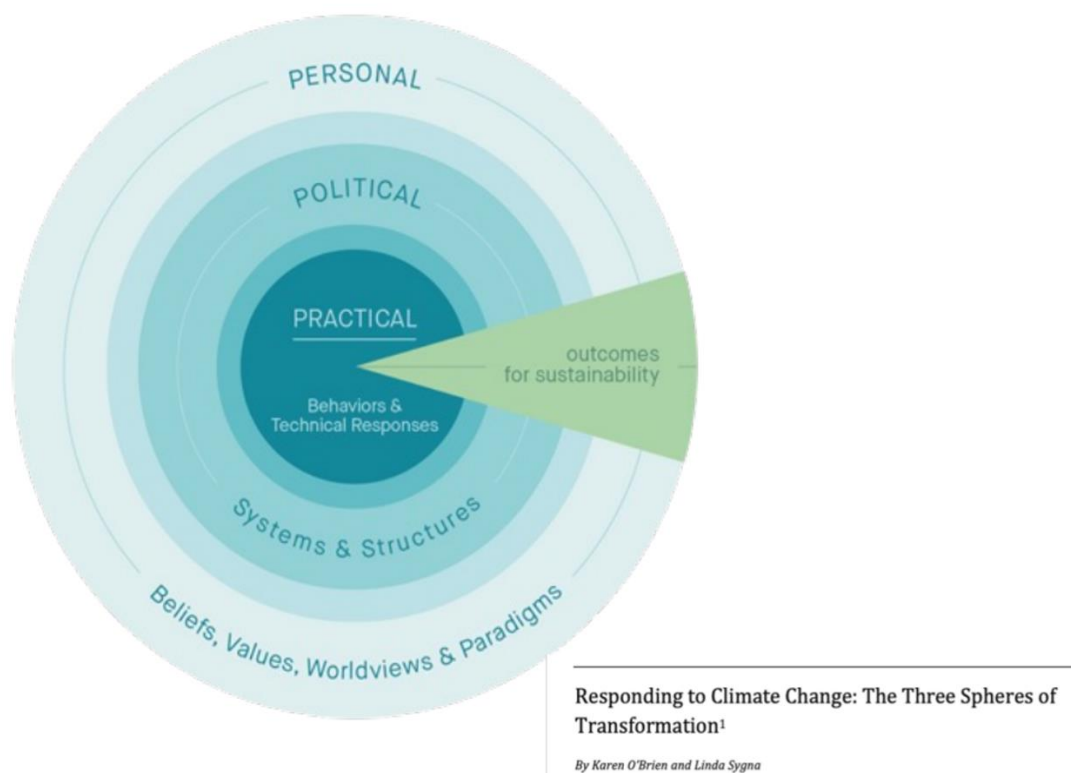


Figure 3. Spheres of Transformation (O'Brien and Sygna, 2013, p. 5).

The personal sphere encompasses individual and collective beliefs, values, and worldviews, which in turn influence how political systems and structures are perceived. These perceptions affect what solutions are deemed “possible” within the practical sphere. Although these spheres may appear as separate, two-dimensional entities on paper, they are in fact deeply embedded within each other. At the core lies the practical sphere, representing tangible goals and outcomes, surrounded by the political sphere, which defines the conditions that enable or hinder progress (O’Brien and Sygna, 2013). Encompassing both is the personal sphere, reflecting collective and individual perspectives on systems and solutions. Changes in one sphere can lead to transformations in the others, though certain interventions may be more effective in driving change across multiple spheres (Sharma, 2007).

The practical sphere focuses on changes in behaviour and technology, such as altering consumption habits and improving production methods such as buying locally produced food or being self-sufficient in terms of energy (O’Brien and Sygna, 2013; Svarstad *et al.*, 2023).

Our ability to implement these changes is influenced by the broader political and personal spheres, which provide the context in which these behavioural, sometimes even technological, opportunities can emerge. The political sphere encompasses the systems, institutions, and norms that govern what is considered legitimate, shaping the frameworks that regulate human actions (Svarstad *et al.*, 2023). These political systems are themselves shaped by overarching worldviews and paradigms that have evolved historically, setting the stage for the creation of political structures that may or may not be conducive to progress or sustainability. These worldviews are rooted in the collective beliefs and values of societies, which in turn influence the development of political institutions, as well as the behaviours and technologies they permit or restrict (O’Brien and Sygna, 2013; Svarstad *et al.*, 2023).

2.6 Cultural-Historical Theory

Cultural-Historical Theory (CHT) was developed by Vygotsky, whose work is highly regarded for redefining the development of the mind within historical, social and cultural contexts (Martin and Peim, 2009). Although CHT encompasses various psychological topics, relevant concepts often applied in educational research include mediation, internalisation, the zone of proximal development, and *perezhivanie*. These interconnected concepts form the framework of CHT (Cong-Lem, 2022). As Veresov (2016, p. 129) notes, a concept should be understood by “clarifying its role within cultural-historical theory and examining its connections with other concepts, principles, and laws of the theory”.

2.6.1 Mediation

Mediation pertains to human psychological processes and is a key principle in CHT (Cong-Lem, 2022). Higher mental functions are mediated by signs, which are “artificial, or self-generated, stimuli” (Vygotsky, 1978, p. 39 as cited in Cong-Lem, 2022, p. 1093). Examples include mathematical symbols, speech, and written language. Speech enhances problem-solving capabilities, marking an important moment in intellectual development when practical activity and speech converge (Vygotsky, 1978).

Signs, such as language, support and regulate human activities. Language enables children to problem solve, manage their behaviour, and overcome impulsive actions (Vygotsky, 1978). Sign mediation transforms the relationship between stimulus and response, creating a new psychological structure (Vygotsky, 1997; Toomela, 2016). Signs possess a “reverse action” function, allowing external stimuli to control behaviour (Vygotsky, 1978, p. 41). For instance, a child can recall a word by looking at a picture, demonstrating the reverse function of signs (Cong-Lem, 2022).

2.6.2 Internalisation

Internalisation involves the process by which external activities performed in social interactions are gradually integrated to an individual's psychological system, fostering internal mental development (Cong-Lem, 2022). Vygotsky explains that any function in a child's cultural development appears twice: first as an interpsychological category in the social sphere, and then on an intrapsychological category on the psychological sphere (Tian, 2010). This applies to attention, memory, concept formation, and volition (Veresov, 2010). CHT views the development of complex mental operations “as the history of the transformation of means of social behaviour into means of individual psychological organisation” (Vygotsky and Luria, 1994, p. 138 as cited in Cong-Lem, 2022, p. 1094).

2.6.3 Perezhivanie

The concept of perezhivanie posits that the environment, though crucial in development, is not equivalent to development itself (Cong-Lem, 2022). The environment provides the input for development, but its impact is mediated through personal meanings (Vygotsky, 1978). Vygotsky (1994) argues that the influence of environmental factors on development is determined by how these factors are refracted through the “child's perezhivanie” (1994, p. 340) i.e. an emotionally

loaded life changing experience. A perezhivanie³ thus acts as a prism that refracts environmental impacts, playing a crucial role in individual development (Veresov, 2010). Understanding a child's perezhivanie requires exploring how they perceive and emotionally relate to their experiences (Huh and Kim, 2021; Yang and Markauskaite, 2023).

A perezhivanie encompasses both an experience and the subsequent process or reflection that, either instantly or over time, become the basis of our identity and how we view and relate to the world (Blunden, 2016b). It can be either positive or negative; its main distinctive feature is its significance. Renshaw (2021) explored the concept of Ecopedagogy from a cultural-historical perspective, considering perezhivanie as both collective and individual in terms of affective and reflective dimensions.

2.6.4 Zone of Proximal Development (ZPD)

Vygotsky (1978) distinguishes between the actual level of development (ALD) and the zone of proximal development (ZPD). ALD refers to the level of mental function development established through completed developmental cycles (Cong-Lem, 2022). ZPD can be represented as the distance between what a child can achieve independently and what they can achieve with guidance (Cong-Lem, 2022). For instance, standardised tests only measure ALD, whereas ZPD encompasses problem-solving with support.

An analogous example can be drawn from the process of drafting a doctoral thesis. The Actual Level of Development (ALD) corresponds to what PhD candidates might write independently. In contrast, the process of drafting a doctoral thesis involves continuous intellectual challenge, and hopefully improvement, facilitated by the guidance of a more experienced mentor. This dynamic is maintained by creating a constant tension between what the candidate knows and what they are not yet aware they could learn. Determining the appropriate level of tension in this mentoring relationship is challenging: if the tension is too high, it may overwhelm the candidate, while insufficient tension fails to promote considerable progress. The mentor's role is to gauge the optimal amount of tension required in different knowledge domains, considering factors such as the candidate's cultural background, emotional maturity, fatigue, and external deadlines.

The centrality of ZPD in CHT remains controversial, with some viewing it as a crucial concept linked to the genetic law of psychological development, while others argue it is theoretically underdeveloped (Van Der Veer and Valsiner, 1994; Toomela, 2016; Cong-Lem, 2022).

³ In Russian, the word perezhivanie is a countable noun, therefore it requires an article or pronoun. The plural form is perezhivaniya (Blunden, 2016b).

2.6.5 Integration of Cultural-Historical Theory

Authors such as Toomela and Cong-Lem draw core ideas from Cultural-Historical Theory (CHT) and prefer to articulate a Socio-cultural Theory (SCT) approach.

Toomela (2016) cautions against this reductionist approach, emphasising that CHT (or SCT) should be understood as a structural-systemic phenomenon (Cong-Lem, 2022). A proper interpretation and application of CHT must reflect this epistemology, revealing the elements of the mind, their interrelationships, and the emergent qualities of their synthesis (Cong-Lem, 2022).

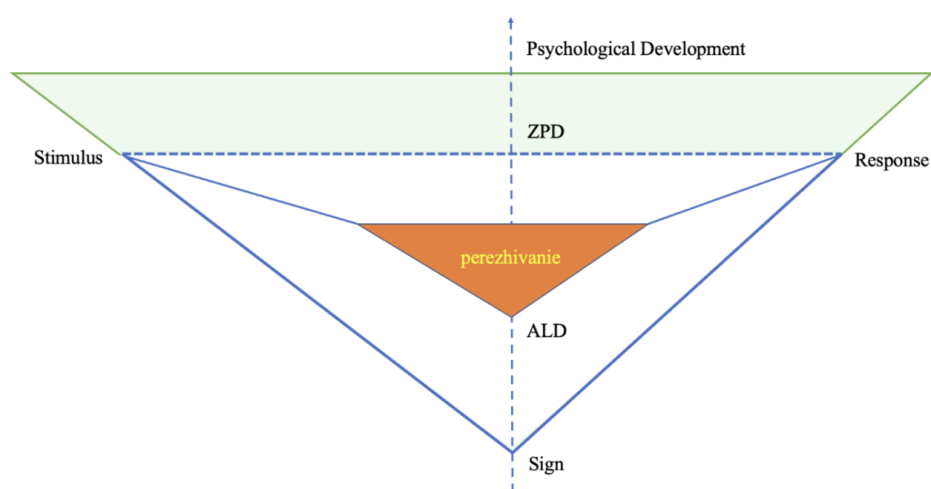


Figure 4. SCT Diagram (Cong-Lem, 2022, p. 1096).

Perezhivanie is central to Vygotsky's model, highlighting its crucial role in interpreting environmental influences and shaping the psychological development of individuals (Cong-Lem, 2022). The way a stimulus affects an individual is filtered through their perezhivanie, resulting in varied responses based on the person's unique characteristics and the context of the situation (Vygotsky, 1994, 1997). Vygotsky describes development not as a linear progression but as a spiral, revisiting similar points at higher levels of complexity with each turn (Vygotsky, 1978).

From the perspective of CHT, development is not a straightforward evolutionary process but rather a non-linear, dialectical process characterised by periodicity, disproportionate development of different functionalities, qualitative transformations, and the interplay of external and internal factors (Cong-Lem, 2022). This complex process involves overcoming difficulties and adapting to new conditions (Vygotsky, 1997). The four key concepts of CHT - mediation, the zone of proximal development, internalisation, and perezhivanie - provide significant insights and are extensively used in empirical research. However, these concepts should be interpreted and applied in accordance with the core principles of CHT, such as its

structural-systemic epistemology and the qualitative reorganisation of the psychological system (Cong-Lem, 2022).

2.7 Education for a Just and Habitable Planet

Education fundamentally shapes how we relate within society and with our surrounding natural environment. As a response to the environmental movements starting in the 1960s, an array of pedagogies that could be considered “pro environmental or ecological” have emerged: Environmental Education, Ecopedagogy, Education for Sustainable Development, Education for Sustainability, and Climate Change Education, among others. Although the approaches and focuses may differ, the central objective of these pedagogical approaches is to empower learners to actively contribute to the creation of more resilient and sustainable communities. This is particularly crucial in light of the ongoing climate crisis, which demands immediate and decisive action (Universidad de San Andrés, 2023).

In particular, Ecopedagogy (Freire, 1997; Gadotti, 2009), Education for Sustainability (Huckle and Sterling, 1996), and Transformative Learning for a Sustainable Future (Laininen, 2019) offer a more critical scope that can be viewed from a political ecology perspective and adapted towards a ‘decolonial stance’ (Sultana, 2019). Given that the focus of these pedagogies is not only knowledge, but rather attitudes and behaviours, and especially how we act in society in relation to one another and with our natural environment, they can be categorised within the realm of Global Citizenship Education (GCE).

2.7.1 Global Citizenship Education

Global Citizenship Education (GCE) is a fluid and hard to define term. There are several definitions and typologies. Davies *et al.* (2018) frame Global Citizenship Education within the social, environmental, cultural, and economic domains; they define GCE as underpinned by several concepts that emphasise five dimensions: justice, equity, diversity, identity and belonging, and sustainable development. This partly overlaps with Oxley and Morris's (2013) typology of GCE that differentiates between advocacy and cosmopolitan approaches. The cosmopolitan approach includes political, economic, and cultural dimensions of global citizenship, while the advocacy approach is divided into social, critical, environmental, and spiritual dimensions of global citizenship.

Andreotti (2006) introduces two approaches to Global Citizenship Education (GCE): soft GCE, which focuses on teaching about global citizenship, cultural tolerance, and related themes, and critical GCE. Later, Andreotti (2010) expanded on critical GCE by developing post-critical and

post-colonial GCE. This version equips students with the tools to critically engage with global issues, particularly those related to conflict and power dynamics, and helps them to recognise and challenge colonial, liberal, and Western assumptions to foster transformative change (Goren and Yemini, 2017).

Huckle (2013) argues that citizenship should be understood in terms of both the rights and, more importantly, responsibilities that individuals are expected to uphold as they work towards a sustainable future. Similarly, Micheletti and Stolle (2012) emphasised that “sustainable citizenship” involves viewing citizenship as a comprehensive practice of accountability, connecting individuals to their environmental, social, political and economic contexts (Gericke *et al.*, 2019).

Pashby *et al.* (2020) identified three main metanarratives for GCE: neoliberal, liberal and critical. These intersect and fuse, which create new sub-metanarratives. For this research, it is worth mentioning the modern or colonial imaginary. This metanarrative normalises the European, or rather Western perspectives and cosmologies, along with its colonial and capitalist social structures (Pashby *et al.*, 2020). This worldview promotes a local Western viewpoint as if it were a global blueprint (Mignolo, 2000; da Silva, 2007; Coulthard, 2014). As a result, it portrays an oppressive economic system, racialised markets, political structures based on nation-states, knowledge driven by European rationality, autonomy and individualism as universal and unavoidable or desirable (Dussel, 2016; Pashby *et al.*, 2020).

In view of the diversity of the perspectives, definitions and typologies briefly presented above, it becomes necessary to establish the conceptualisation of critical Global Citizenship Education (GCE) for this study. The following sections include concepts selected to address social, political and environmental challenges, which include: Ecopedagogy, Education for Sustainability, Transformative Learning for a Sustainable Future, emancipatory citizenship and political education, place-based education, and dialogical education.

2.7.1.1 Ecopedagogy

Ecopedagogy, rooted in the pedagogical theories by Freire (2002) and further developed by Gadotti (2009), takes a radical approach to the role of human beings in society and as part of the natural world. This framework emphasises a critical and emancipatory approach, where education is seen as a tool for challenging and transforming oppressive socio-environmental structures. Ecopedagogy encourages learners to develop critical consciousness - a deep awareness of the socio-environmental injustices that exist in the world - and to use this awareness as a catalyst to transform communities through political action. Ecopedagogy

encourages and challenges formal education to re-connect to the local and the global territories and to address issues of “kinship” (Haraway, 2016) beyond the human species.

Ecopedagogy is not just another pedagogy among many; it represents a global, alternative approach that addresses not only the conservation of nature - Natural Ecology - and the impact of human societies on the natural environment - Social Ecology - but also promotes a new model for an ecologically sustainable civilization - Integral Ecology - (Antunes and Gadotti, 2005). Ecopedagogy is tied to a utopian vision, one that seeks to change current human-nature relationships. This is the profound significance of Ecopedagogy, also referred to as the Pedagogy of the Earth (Antunes and Gadotti, 2005). This approach is supported by thinkers like Fritjof Capra, Leonardo Boff, Milton Santos, and Sebastiao Salgado, all of whom advocate for an education that integrates interdependent knowledge and values (Antunes and Gadotti, 2005). These include fostering global thinking, educating emotions, understanding Earth's identity as central to human existence, cultivating planetary consciousness, and promoting simplicity, care, and peace.

Ecopedagogy calls for a re-examination of the dominant paradigms that have led to social inequality and environmental catastrophe. It urges educators to move beyond merely teaching about environmental sustainability and instead engage students in critical dialogues about the root causes of social, political and environmental issues. The strength of Ecopedagogy lies in its ability to connect environmental issues with broader social justice concerns, making it a powerful tool for fostering a holistic understanding of sustainability (Gadotti, 2009) from a political ecology perspective. However, its focus on critical consciousness and social transformation can sometimes overshadow the practical aspects of sustainability, such as the development of concrete skills and behaviours needed to address social, political and environmental challenges.

Ecopedagogy aligns with the recognition of education's research dimension and the rich phenomenological resources offered by both the group and the local environment for collective inquiry. The higher the group engagement in active listening, the less dependent it is on expert facilitation of group dynamics. While Biesta's (2015) educational philosophy emphasises the individual subject, Freire (1997) expands this focus to include both the individual and the collective subject, with a strong emphasis on community involvement, including families.

Biesta (2013) contends that educators, as adults, must acknowledge and take responsibility for the world as it is, even if it is imperfect. He cautions against placing the burden of fixing adult mistakes on children or imposing an adult agenda, as this denies children the opportunity to

encounter the world on their own terms and develop their sense of self. This tension between taking responsibility for the present and avoiding the imposition of adult problems on children is a valuable safeguard against interventions that risk becoming indoctrination. However, this binary distinction can be overly simplistic. It overlooks the more generative pedagogical approaches of Célestin Freinet and Mario Lodi, which emphasise the dynamic and co-creative potential of education that engages both the individual and the collective in transformative ways.

Key elements of Ecopedagogy include collective learning, critical consciousness, social justice, environmental ethics, and transformative political action (Gadotti, 2009). This approach is deeply influenced by Freirean pedagogy, which advocates for education as a means of empowering marginalised communities to challenge and change their realities (Freire, 1987, 1997). Based on Brandão's definition of sustainability ([see subsection 2.3](#)), Ecopedagogy can be described as a pedagogical paradigm that places sustainability at its centre, embraces different cosmovisions, epistemological stances, and knowledges provided by diverse life forms, and respects identity and diversity (Gadotti, 2009). It follows Freire's concept that human beings are in constant movement and are permanently re-shaping themselves through their interactions with their surroundings which includes both other humans and nature (Freire, 1987).

Ecopedagogy centres on life itself, encompassing people, cultures, ways of living, and respect for identity and diversity. Ecopedagogy invites all citizens to fight for ethical principles that respect all other life forms and nature (Freire, 1987). By doing so, it challenges traditional "progressive" pedagogical practices that mainly respond to economic development, and hence increase emissions, pollution, destruction and depletion of nature (Dickmann and Carneiro, 2021). Ecopedagogy can be considered as a pedagogy for the Earth Charter and is partly based on Morin and Kern's (1993) invitation to "ecologise everything" (Gadotti, 2009, p. 68).

The guiding principles set in 2000 at the International Forum on Ecopedagogy still apply today (Gadotti, 2009): the planet as one community; Earth as mother 'Gaia', an evolving superorganism; Earth as an oppressed being, the most oppressed of all; pedagogies that above all, promotes life in all of its forms; re-educating how we see things, our hearts, promoting justice, peace and sustainability. Ecopedagogy invites educators, and citizens, to question the anthropocentric views of traditional pedagogies (Freire, 2001; Gadotti, 2009). The aim is to widen the view from anthropocentrism to planetary awareness in order to create a new sense of planetary citizenship or "planetary civilization" (Gadotti, 2009, p. 66). Being a social and political movement, Ecopedagogy also requires a reorientation in terms of curriculum towards

changing social, cultural and ecological structures. By doing so, Ecopedagogy promotes specific values towards sustainability and peace and educating towards (Gadotti, 2009, p. 69):

- a global cosmovision.
- being in touch with one's feelings.
- understanding our identity with the Earth.
- planetary awareness: we are interdependent beings and citizens of the Earth, there are no foreigners.
- discussing human ethics and values, not market oriented.
- intercultural communication.
- purposeful intelligence to conduct a life project with empathy.
- solidarity, as a necessary condition for living in society.
- promoting listening, peace, serenity, austerity.
- reducing demands and needs.

It becomes clear that these values and pedagogical objectives coincide, at least in part, with the concept of “strong” sustainability by (Huckle and Sterling, 1996) insofar that it invites us to question the status quo at the individual but especially at the collective level. Renshaw (2021) explores the concept of Ecopedagogy from a cultural-historical perspective, thus integrating the principles of environmental sustainability and social justice.

Ecopedagogy seeks to cultivate a sense of responsibility and agency among learners towards both social transformation and environmental stewardship (De Carlo and Surian, 2023). This approach emphasises the necessity of critical pedagogy, which is rooted in the realities of the learners' lives and the broader ecological challenges facing the planet, advocating for an educational practice that is both reflective and action-oriented, aiming to empower individuals to contribute to a more just and habitable world (Renshaw, 2021). To this end, dialogical education becomes particularly relevant.

2.7.1.2 Education for Sustainability

Education for Sustainability (EfS) as conceptualised by (Huckle and Sterling, 1996) is an approach that integrates the environmental, social, and economic dimensions of sustainability into education. EfS emphasises the need for systemic thinking and an interdisciplinary approach, advocating for education that equips learners with the skills and knowledge necessary to tackle complex sustainability challenges. The framework is rooted in the belief that sustainability cannot be fully understood or achieved through a single discipline; rather, it requires a holistic

understanding of the interconnectedness between various environmental, social, and economic systems.

Key elements of EfS include interdisciplinary learning, critical thinking, and systems thinking, all of which are aimed at preparing students to contribute to a more sustainable future (Huckle and Sterling, 1996). By fostering a comprehensive understanding of how distinct aspects of sustainability are interconnected, EfS encourages learners to think beyond isolated issues and consider the broader implications of their actions. This approach is particularly relevant in today's globalised world, where environmental and social challenges are increasingly complex and interconnected. However, while EfS provides a solid foundation for sustainability education, it is primarily focused on knowledge acquisition and the development of cognitive skills, with less emphasis on the emotional and ethical dimensions of learning.

Education for Sustainability (EfS) has been defined as a pedagogical approach that “helps people and communities to examine critically the technologies, systems of economic production, cultural systems of reproduction, laws and politics, and ideas and ideologies they currently employ for living with the rest of nature. It also helps them to reflect and act on viable alternatives” (Huckle and Sterling, 1996, p. 4). Moreover, it highlights the importance of community-based learning and engaging local people (Fagan, 1996). EfS needs to build from the core values in the community and at the same time emerge from the concern of the youth. However, this raises complex questions such as: what happens if and when the core values in a community are in direct contradiction with sustainable practices? To what extent can transformative EfS take place when it is counter hegemonic to the predominant culture? What forms of EfS are taking place across the Global North and Global South? and, how are these determined by and simultaneously shaping the context in which they operate?

EfS, in its strong form, is an emancipatory form of education that challenges the social, economic and cultural structures that underlie the former challenges (Huckle and Sterling, 1996). That is, however, easier said than done. Public schools, principals and teachers are increasingly under pressure to perform and obtain satisfactory results in standardised tests. Furthermore, schools and their surrounding communities are deeply interlinked. The latter can be both a resource or a limitation to deal with certain issues such as challenging production and consumption systems, our relationship to the Earth and what a good life could comprise.

2.7.1.3 Transformative Learning for a Sustainable Future

Transformative Learning for a Sustainable Future (TLS), as articulated by (Laininen, 2019), builds on the concept of transformative learning. TLS emphasises deep changes in the learner's

worldview, values, and behaviours toward sustainability. Unlike EfS, which focuses on knowledge acquisition, and Ecopedagogy, which emphasises social transformation, TLS is concerned with personal transformation. It encourages learners to reflect critically on their beliefs, values and assumptions, thereby shifting their perspectives and behaviours.

Key elements of TLS include transformative learning, values-based education, critical reflection, and behavioural change. This approach recognises that achieving sustainability requires more than just knowledge; it requires a fundamental shift in how individuals perceive and interact with the world (Laininen, 2019). TLS aims to cultivate this shift by engaging learners in deep, reflective learning experiences that challenge their existing worldviews and encourage them to adopt more sustainable lifestyles.

One of the most original aspects of TLS is its focus on the emotional and ethical dimensions of learning, which is closely linked with the concept of *perezhivanie* (Blunden, 2016a) and, in this work, is relevant to analyse young people's challenging affective states and often dystopian perspectives of their own futures. By placing an emphasis on personal transformation, TLS addresses the affective aspects of education, recognising that emotions and values play a crucial role in shaping behaviour (Laininen, 2019). This approach complements the cognitive and practical focus of EfS and the critical and social focus of Ecopedagogy, making it a vital component of a comprehensive sustainability education framework.

Transformative Learning for a Sustainable Future (TLS) represents a pedagogical framework designed to fundamentally reshape individuals' worldviews, values, and behaviours towards a sustainable society. It involves deep, structural shifts in thought, emotion, and action, aiming to promote a comprehensive understanding of the interconnectedness between humans, nature, and the economy (Laininen, 2019). TLS encourages learners to transcend traditional knowledge, fostering an existential awareness of the need for sustainable living and the role of economy in supporting rather than depleting natural resources.

A key characteristic of TLS is its focus on integrating cognitive, affective, and existential dimensions of learning. This multidimensional approach encourages individuals to critically examine their current values and assumptions, developing the capacity to make wise choices that contribute to both personal well-being and collective sustainability. Unlike other pedagogies, which often reinforces existing societal paradigms, TLS emphasises “epistemic learning,” or third-order learning (Sterling, 2010), which challenges deeply ingrained worldviews and promotes a paradigm shift towards sustainability. Another important feature is the focus on fostering change agents who can drive societal transformation. This involves cultivating essential

character qualities such as mindfulness, resilience, courage, and leadership, which empower individuals to act as catalysts for change at personal, organisational, and societal levels (Laininen, 2019).

2.7.1.4 Emancipatory Political Education

Emancipatory political education takes a central role in order to face the systemic social and political changes that need to be addressed. In a school context, politics can be understood as a way of democratically discussing collective issues and looking after the commons present in the school and in the community at large (Gutiérrez, 1984; Heller, 1999; Sauvé, 2019). From a pragmatic perspective, it can imply discerning quality information from false one - or even fake news -, questioning, discussing, engaging in debate, dealing with differences and co-creating (Sauvé, 2019). Political education is fundamental to better articulate schools with society, bring the community into the school, and vice versa.

Political education is intrinsically context sensitive since its primary objectives are to make students aware of their own citizenship and encourage them to use it actively and wisely in their schools and communities. From a broader perspective, and at a later stage, emancipatory citizenship education would invite, for instance, to reconsider the historical connections between capitalism - and neoliberalism - with colonialism, post-colonialism, and racism and how these tensions in the present the geopolitical context (Sauvé, 2019). Political education experiences often share a deep discontent with the status quo. The reasons for this discontent or disagreement with the prevailing social “form” are numerous. These include (Baronnet, Merçon and Alatorre, 2018; Merçon, 2020):

- the advancement of the neoliberal capitalist system, its strategies for commodifying common goods and accumulating wealth through dispossession.
- the power asymmetries that trivialise and erase the knowledge of marginalised groups.
- the political model focused on economic development, progress, and competition rather than social and environmental well-being.
- the depoliticization of science and academia.
- the failure to uphold linguistic rights.
- the subsidised growth of agribusiness at the expense of agroecology and rural ways of life.
- the exclusion of children from spaces of social participation.
- the normalisation of ideological practices in education and the increasing disappearance of community processes that build social cohesion.
- the numerous situations of epistemic, cultural, and socio-environmental injustice faced by communities resisting the hegemonic model of organising collective life.

In face of these multifaceted challenges, the role of educators would be guiding students identify their own role and positioning in these complex dynamics. This is undoubtedly not an easy task for educators, many of whom do not always feel qualified or comfortable when discussing sensitive topics. However, emancipatory political education needs to be, to a certain degree, unconventional or even uncomfortable, if the aim is to bring about a true societal change. This does not mean that there is *laissez faire* within this framework, but that they do extend the boundaries of what is generally considered a “good” education.

Schugurensky (2002) highlights the connection between the concept of political capital and an emancipatory perspective of citizenship and educational practices. The key lies in striving to provide equal opportunities for everyone to influence governmental decisions. Why do some individuals possess more political capital than others? What factors enhance or limit one’s ability to influence those in power? Schugurensky (2002) identifies areas that play a crucial role in learning citizenship behaviours and in shaping public policies aimed at promoting greater participation (De Carlo and Surian, 2023).

Knowledge is key for participating in political decision-making, which requires both procedural and factual knowledge (Schugurensky, 2002). Factual knowledge, for instance, includes understanding forms of direct and representative democracy, electoral processes, the separation of powers, and legislative rights. Procedural knowledge pertains to the understanding of how political mechanisms function and how to influence decision-makers, particularly political representatives (De Carlo and Surian, 2023). This includes knowledge of lobbying, political campaigns, public relations, opinion polls, and the role of mass media.

Influencing political decision-making involves not just knowledge about the actors and issues but also specific skills (Schugurensky, 2002; De Carlo and Surian, 2023). It is important to know which media outlets to approach to publish a letter or a statement and to be able to write those effectively. Moreover, developing public communication skills is essential, as well as literacy in both language and mathematics to comprehend reference documents and complex statistics (Schugurensky, 2002; De Carlo and Surian, 2023).

Finally, psychological traits that influence and sustain individuals’ and groups’ political participation are relevant. These traits include self-esteem, motivation, extroversion, resilience, patience, interest in political systems, inclination to participate, and trust in those systems (Schugurensky, 2002; De Carlo and Surian, 2023).

2.7.1.5 Place-based Education

Place-based education (PBE) is a pedagogical approach that emphasises the integration of learning with the local context, involving both the physical environment and the community (Yemini, Engel and Ben Simon, 2023). Definitions of PBE tend to focus on its goals of connecting students to their surroundings, fostering a sense of community, and addressing local environmental and social issues (Smith, 2002; Gruenewald, 2003b; Sobel, 2014). At its core, PBE involves experiential learning where students actively engage with local issues, cultures, and environments, making education relevant to their lives and surroundings (Gruenewald, 2003a; Bowers, 2008). While definitions may vary, a common thread is the goal of using local contexts to enrich students' learning experiences and promote environmental stewardship and civic engagement (Yemini, Engel and Ben Simon, 2023).

Yemini, Engel and Ben Simon (2023) identify key aspects of PBE, including its emphasis on community-based learning, where students collaborate with local stakeholders to solve real-world problems (Nichols *et al.*, 2016). This type of learning fosters civic responsibility and helps students understand their role in shaping their communities (Smith and Sobel, 2010). Another important aspect is the use of the local environment as a teaching tool, where students learn from and about their surroundings through direct interaction with local ecosystems and social systems (Gruenewald, 2005). PBE also aims to cultivate environmental citizenship by helping students understand and engage with sustainability issues in their immediate environment (Schild, 2016). Moreover, PBE breaks down the boundaries between traditional classroom settings and the community, encouraging collaborative learning that extends beyond the school walls (Wattchow and Brown, 2020).

However, implementing PBE comes with several challenges and limitations. Yemini, Engel and Ben Simon (2023) argue that one significant challenge is that PBE is often seen as a non-traditional approach, which can make it difficult to integrate into the standardised curricula used in many schools (Smith, 2007). The method requires considerable time, effort, and resources, as it often involves coordinating with community members and adapting lesson plans to local contexts (Lieberman and Hoody, 1998). Furthermore, PBE can be hindered by a lack of teacher preparation, as many educators may not have the training or experience to effectively implement place-based learning strategies (Powers, 2004). Additionally, while PBE focuses on local contexts, it may sometimes overlook the broader global issues that affect local environments, leading to a potential disconnect between local and global scales (Waite, 2013). Lastly, critics argue that PBE's focus on place may sometimes present communities as homogeneous entities, neglecting the diversity and complexities within them (Nespor, 2008).

2.7.1.6 Dialogical Education

Dialogical education, as explored by Meijers and Hermans (2018), delves into the transformative potential of educational practices through the lens of acknowledging different viewpoints, therefore allowing for frame-shifting, conceptual change and discourse analysis. By fostering an environment where students actively engage in conversations that challenge and expand their pre-existing notions, dialogical education aims to cultivate critical thinking, reflexivity, and adaptability. Through the systematic analysis of discourse within educational settings, Meijers and Hermans (2018) highlight how dialogic interactions can lead to significant shifts in understanding, thereby promoting a more dynamic and responsive form of learning that is essential in navigating the complexities of the modern world.

Freinet's educational approach aligns with these principles of dialogical education by emphasising active student participation in meaningful conversations that challenge pre-existing ideas and foster critical thinking. Freinet's focus on collaborative learning and experiential engagement mirrors the transformative potential identified by Meijers and Hermans (2018), where discourse analysis reveals how dialogic interactions can lead to profound shifts in understanding and adaptability.

Salas and Larrain (2024) further advance the discourse on dialogical education by incorporating contemporary challenges and technological advancements to the conversation. Their work emphasises the role of digital platforms and social media in shaping the contours of dialogical education, arguing that these tools can both enhance and complicate the process of conceptual change (Salas and Larrain, 2024). By analysing how digital communication influences the quality and depth of educational dialogues, they contribute to a nuanced understanding of how dialogical education can be effectively implemented in the 21st century.

Dialogue, culture, and politics are at the heart of the educational process (Brandão and Fagundes, 2016). In this context, it is relevant to keep in mind that education is an aspect of culture. Culture, in turn, involves the management of symbolic power, which can either perpetuate and reinforce social inequality and oppression or contribute to the symbolic and political construction of a new social order focused on liberation (Brandão and Fagundes, 2016).

Popular culture movements are based on the idea that the process of transforming and giving meaning to the world is intrinsically linked to the transformation and meaning making of individuals. As an inherently collective and socially significant practice, human beings achieve fulfilment through actions that are culturally recognised as necessary (Brandão and Fagundes, 2016).

In a capitalist society characterised by inequality and exclusion, there is a continuous cultural dominance of elite and academic culture over popular culture. Any initiative aimed at dismantling social inequality, injustice, and the marginalisation of individuals and communities needs to include a cultural component. The popular culture initiatives of the 1960s aimed to radically alter the traditional understanding of the process of culture. This transformative approach rethinks cultural processes and educational practices as part of a revolutionary effort involving committed intellectual activists in the broader project of popular liberation (Brandão and Fagundes, 2016).

From a dialectical perspective, the same process that can lead to liberation can also be used for indoctrination. As a tool of indoctrination, culture becomes anti-historical by obstructing human fulfilment through free communication, anti-social by preventing communication as a collective task for societal construction, anti-personal by treating other individuals as objects of domination, and anti-universal by segregating society into privileged and exploited groups (Fávero, 2001). Therefore, it is crucial that dialogical education encourages safe spaces for exchanging ideas, addressing disagreement and, if needed, focusing on transforming conflict, instead of avoiding it. These are fundamental instances in democratic processes and could therefore be valuable learning experiences for all members of the school community.

2.8 Methodological Literature Review and Considerations

In this section, literature relevant for methodological aspects of this study is discussed. First, the methodological underpinning of a systematic literature review that led to the development of a survey, used in this study, is described. Then, relevant concepts for the survey data analysis process such as question variance are presented. Last, a brief description of the potentialities and limitations of the photovoice method are outlined.

2.8.1 Survey Development Based on a Systematic Review of Evaluation Approaches for Education for Sustainability

This section highlights the systematic review of the literature that served as the foundation for constructing the survey used in this study. While there is extensive research on Education for Sustainability (EfS) in primary education, fewer studies focus on its implementation in secondary schools (Taylor *et al.*, 2019). Examining EfS in secondary schools is crucial because students in this age group are approaching adulthood, where they will engage in civic activities such as voting and consumer choices (Ferkany and Whyte, 2013). To address this, a systematic literature review was conducted to map evaluation techniques employed in secondary education projects related to EfS. This review sought to explore the following questions:

- What evaluation tools are documented in the literature?
- What are the features and objectives of these evaluation tools? In what settings are they applied, and how?
- What are the potential limitations and opportunities within these evaluation tools?

The review examined the objectives, theoretical underpinnings, limitations, and opportunities of the identified evaluation methods. Finally, a new survey was developed to serve as an evaluation tool for secondary-level EfS initiatives. Following the framework by Khan *et al.* (2003), the review followed these five steps:

- i. Defining the review questions.
- ii. Establishing inclusion and exclusion criteria.
- iii. Identifying relevant studies.
- iv. Evaluating the quality of the selected studies.
- v. Summarising and interpreting the findings.

The search process involved selecting three major academic databases - ERIC, Scopus, and Web of Science - due to their prominence in the social sciences. The search keywords used were “education”, “sustainability”, and “evaluation tool(s)”. The search was limited to peer-reviewed papers published between 2000 and 2022 in English-language journals specialising in the social sciences and humanities. The initial search yielded 471 articles, which were reduced to 342 after eliminating duplicates. The next phase, study selection, consisted of three stages: i) screening article titles, ii) analysing abstracts of the remaining articles, and iii) conducting full-text reviews for final inclusion. This process resulted in 121 articles being selected for in-depth analysis. Articles were included in the final sample if they at least one of the following criteria: a pedagogical focus on EfS evaluation, assessment methods for sustainability initiatives at an institutional level, or theoretical discussions on evaluating sustainability education.

During the analysis, articles were categorised based on their evaluation methods, objectives, and focus. Thematic and content analysis were applied to each category, culminating in a comprehensive review of EfS evaluation techniques for secondary schools, along with the creation of a validated survey to assess these projects. During the analysis phase, the articles were grouped based on aims, focus and evaluation methods. Thematic and content analyses were applied to each category.

One limitation of this study is related to terminology. There are other pedagogies that focus, to a certain degree, on sustainability such as Education for Sustainable Development (ESD), Environmental Education (EE), and Climate Change Education (CCE). By not including keywords

such as “environmental”, “climate” or “sustainable development” it is possible that relevant studies focused on EE, ESD, and CCE may have been excluded from the review.

Survey Development: Key Insights

Drawing from the systematic literature review, a survey was created using items adapted from three instruments: the Sustainability Consciousness Questionnaire (Gericke *et al.*, 2019), the 2-MEV scale (Johnson and Manoli, 2010), and the New Ecological Paradigm (Dunlap, 2008). The new survey consists of 53 items organised in three categories: sociodemographic details, ecological footprint, and human-nature relationship. The questions cover a range of values, attitudes, behaviours, and skills relevant to sustainability competences, as defined by existing frameworks (Glasser, 2016; UNESCO, 2019; Bianchi, 2020; Brundiers *et al.*, 2020) and how they can be applied in educational contexts (Sterling *et al.*, 2017).

The survey was designed with an operational approach suitable for schools, avoiding excessive demands on participants’ attention. While it was informed by existing scales, it was developed to facilitate international comparisons, particularly with the New Ecological Paradigm (NEP), which is commonly used to measure pro-environmental attitudes (Manoli *et al.*, 2019). The NEP scale remains a well-regarded tool for assessing environmental perspectives.

2.8.2 Survey Data Analysis: Variance

One of the data analysis strategies for the survey answers in this study was variance. Variance provides insights into the spread and reliability of data points. In survey responses, high variance indicates that the data points are widely dispersed, suggesting significant diversity in responses across countries, which may be attributed to a wide range of factors (Field, 2013). On the other hand, low variance implies that the responses are clustered around the mean, indicating consistency and general agreement among respondents (Cohen, 1988). This distinction is particularly useful when comparing groups, or cases as in this study, where high variance in one case may indicate diverse opinions or behaviours, while low variance suggests a more uniform response.

Moreover, variance is essential for identifying outliers, as high variance often signals the presence of extreme values that deviate significantly from most of the data. Detecting these outliers is crucial to ensure that they do not skew the overall analysis or lead to misleading conclusions. Furthermore, variance influences the reliability of survey results; low variance typically indicates that responses are consistent and reliable, whereas high variance may suggest potential issues in survey design or the influence of confounding factors (Bryman, 2016).

Understanding variance can help policymakers and researchers identify areas requiring targeted intervention. For instance, high variance in responses to environmental questions may reveal varying levels of awareness or commitment to sustainability issues, guiding more nuanced policy responses. Thus, variance is a statistical measure that provides valuable insights into data dispersion, reliability, and the overall consistency of survey responses, aiding in more informed decision-making and analysis.

2.8.3 Photovoice

The origins of photovoice are rooted in Paulo Freire's early work in 1970. Photovoice initially emphasised the power of visual imagery to encourage critical thinking and community-driven change (Freire, 1987; Walker, 2023). Building on this concept, Wallerstein and Bernstein (1988) proposed that communities could begin transforming situations of conflict by discussing issues important to them. However, photovoice was formally introduced in 1992 by Caroline Wang and Mary Ann Burris, who used it as a method to amplify the voices of marginalised women in rural China by inviting them to capture their experiences through photography (Wang and Burris, 1997). Photovoice is an interactive research approach that employs photography to enable community members, acting as co-researchers, to identify, reflect on, and address key issues within their community, ultimately aiming to promote social change (Catalani and Minkler, 2010; Petteway *et al.*, 2024).

This approach combines grassroots activism, photography, and social change, giving those without access to decision-makers a platform to communicate through the visual arts (Walker, 2023). Since its introduction, photovoice has evolved and been adopted in various educational and participatory research contexts, often paired with other methods to amplify participants' voices like collaging, drawing, and mapping (Mannay, 2013; Walker, 2023). Photovoice serves as a tool for advocacy, self-development, and needs assessment, enabling researchers to broaden their understanding of issues and their complexities (Walker, 2023).

Traditionally, photovoice has been used to democratise access to communicate through photography for marginalised communities that lacked the resources to engage with such technology. However, with the widespread availability of smartphones, taking photos has become accessible for individuals across the globe (Santinello, Surian and Gaboardi, 2022). Wang and Burris (1997) argue that the method serves three key purposes: enabling individuals to record and reflect on their community, fostering critical dialogue through the discussions of the photographs, and engaging policymakers with the issues raised. Photovoice is grounded in the belief that images hold powerful communicative potential, and that nearly anyone can use a

camera to capture meaningful representations of their lived experiences (Denzin and Lincoln, 2008).

By combining narrative and visual elements, photovoice enhances researchers' ability to understand issues from participants' perspectives, making it a valuable tool for both scientific inquiry and policymaking (Freire, 1987; Walker, 2023). The photovoice process typically follows key steps (Palibroda *et al.*, 2009). First, researchers consult with the community to identify relevant issues. Next, participants are recruited and trained to take photographs that represent these concerns. The photographs are then discussed in meetings, and the data from these discussions are analysed and shared, often through public exhibits. Through this collaborative process, photovoice allows participants to actively contribute to social change in their communities (Walker, 2023).

As a specific form of Participatory Action Research (PAR), photovoice is designed to gather insights and experiences from different communities through the use of photographs and accompanying captions, either written or audio-based (Kessi *et al.*, 2019).

2.8.3.1 Limitations of Photovoice

Photovoice, while valuable for community-based research, presents several limitations and challenges. One major limitation is the time-intensive nature of the method, requiring significant instruction and relationship-building with participants beforehand to avoid disengagement (Wang and Burris, 1997). This time demand can increase the risk of participants losing interest or motivation over the course of the study (Walker, 2023). Ethical concerns also arise, particularly the need for informed consent, ownership of images, and managing participants' expectations (Wang and Burris, 1997). Moreover, the complexity of data analysis poses another challenge.

While photographs can generate rich and insightful data, their analysis and summarisation are often difficult due to the vast volume of images and the complexity of the narratives they evoke (Wang and Burris, 1997). Additionally, there is no standardised method for implementing photovoice, which leads to variability in the quantity and quality of data collected. This includes inconsistencies in the number of photographs taken and the level of interaction between participants and researchers (Mooney and Bhui, 2023). Despite these limitations and challenges, photovoice remains a powerful tool for capturing diverse community perspectives to foster social and community action.

2.9 Conclusion

This literature review highlights the fundamental theoretical concepts that underpin this study. This chapter critically discussed the term sustainability as both a concept and a practice, underlining the importance of examining how it is defined and applied in various contexts. The review reveals that while “weak” sustainability approaches are more readily embraced by dominant economic and political systems, “strong” and “super strong” (Gudynas, 2010) models challenge the status quo by advocating for systemic change and social justice. In education, these differing interpretations of sustainability significantly shape pedagogical approaches and outcomes.

A key takeaway from this review is the need for educational frameworks that transcend the cognitive dimension and foster critical thinking, empathy, and collective action. A critical Global Citizenship Education framework can offer a comprehensive response to the intertwined challenges of social justice, environmental sustainability, and political engagement. By integrating various pedagogical strategies, schools aim to empower learners to become agents of change, capable of addressing the root causes of political, ecological and social crises. Ultimately, this chapter underscores the importance of education as a transformative tool, essential for building equitable societies that live in harmony with their surrounding natural environments.

3. Methodology and Case Study Profiles

3.1 Introduction

This chapter describes the methodological approach followed in this study. This chapter starts by delineating and justifying the methods. This includes the aim and research questions, the multiple-case study research process and elements to evaluate the quality of the research design. Then, the cases are introduced. This includes descriptive information about their location, community and student population, educational team, infrastructure, curriculum and educational approach. That section is followed by a brief description of the participants of this study. The following section focuses on the four data collection methods used: interviews, survey, experiential learning workshops, and participant observations. Then, the data analysis strategies are discussed. That is followed by the methodological limitations, ethical considerations, and finally, positionality.

3.2 Description and Justification of Methods

3.2.1 Aim of this Research and Research Questions

This study aims to provide a comprehensive understanding of the contextual educational conditions that affect attitudes and behaviours regarding social, political and ecological crises. To achieve this, a multiple-case study was conducted, which included a mixed-methods approach. The data collection methods are semi-structured interviews with adult stakeholders, a survey, experiential learning workshops focused on students' self-narratives and photovoice, as well as participant observation.

The semi-structured interviews with adult stakeholders allow for in-depth exploration of their perspectives, experiences, and insights into the educational conditions influencing their practice. This method offers flexibility in probing specific topics while maintaining a consistent framework across interviews, making it possible to capture detailed qualitative data that reflects the complexity of the issues at hand.

The survey, administered to students, provides quantitative data that helps identify patterns and trends in their attitudes and behaviours. Experiential learning workshops focused on students' self-narratives and photovoice offer a participatory approach, engaging participants in the research process. These methods enable students to express their views and experiences creatively, often revealing deeper, more personal insights into how they perceive and relate to sustainability. Students' self-narratives foster emotional and cognitive connections with the subject matter, while photovoice empowers students to capture and discuss visual

representations of their environment and experiences, adding a visual dimension to the data that enhances understanding.

Participant observation further complements these methods by allowing an immersion in the educational settings, observing informal and non-structured interactions that cannot be captured through other methods. This method provides contextual understanding of the school's everyday functioning which include educational practices and social interactions between different actors.

By combining these methods, the study leverages their complementarity to produce a more holistic and robust analysis. As Bryman (2006) suggests, using complementary methods enhances the credibility and depth of research findings, as each method addresses different aspects of the research questions, allowing for triangulation and a more comprehensive understanding of the complex interplay between education, attitudes, and behaviours in the context of sustainability. This study aims to answer the following research questions and sub-questions:

Research Question 1) How do schools provide scaffolding to students aged 11-15 towards developing sustainability competences?

Research Question 2) How do students and educators perceive sustainability? To what extent is their perception aligned with the school's educational project?

Sub-question 1) What are the defining characteristics of schools that emphasise critical Global Citizenship Education, and what can we reflect on their educational approaches?

Sub-question 2) What is the relationship between the context in which the project is immersed and its critical Global Citizenship Education practices?

Sub-question 3) How do students perceive their futures? What are the general sentiments expressed in their narratives about their own future lives?

Despite the critical view on the term “sustainability” already discussed in the [Literature Review chapter](#), such as it being vague and contradictory, especially when coupled with “development”, the decision to include it in this research was twofold: i) “sustainability” is widespread and widely used in education; and ii) it provides a way to focus on critical pedagogies to face social, political and environmental crises with teachers and students. Nonetheless, during the workshops with students, this terminology was problematised.

3.2.2 Multiple Case Study Methodology

This study employs a multiple-case study as its methodological approach and the guiding research questions focus on subjective interpretations. Evidence that arises from multiple-case studies is often considered more robust compared to single case studies (Yin, 2018), and this methodology is particularly appropriate for investigating school communities in diverse contexts.

A cultural historical approach was selected for this research because one of the underlying premises of this study is that human behaviour is shaped by lived and relative experiences and perceptions, subject to constant internal and external negotiation. For the sake of this specific research, the cultural historical approach can be translated in what Yin (2018) refers to as a constructivist methodology when developing and conducting this multiple-case study. The goal was to capture the varied perspectives of participants and focus on how their diverse interpretations might shed light on the research questions (Yin, 2018). This perspective posits that individuals construct their own realities and subsequently behave accordingly. The chosen methodological stance underscores the importance of exploring the meaning-making process of individuals regarding social issues (Creswell, 2013).

This multiple-case study approach places a strong emphasis on subjectivity, relying mostly on written and verbal data and its interpretation (Hammersley, 2013). The research questions are intentionally open-ended and broad in their scope, allowing for a detailed description of a multifaceted social phenomenon. While this study adopts a mixed-methods approach, its qualitative components align with prior research suggesting that predominantly qualitative methodologies are well-suited for researching sustainability in education due to the inherently rich and complex data and nature (Perkins *et al.*, 2018).

A core aspect of the case study approach is the attempt to shed light upon the rationale behind decisions that were taken, their implementation, and outcomes (Yin, 2018). Case studies grapple with more variables than available data points, hence it is imperative to have pre-existing theoretical propositions that steer the design, data collection, and analysis processes. Furthermore, its data emerges from multiple sources of evidence, and therefore the need to triangulate data (Yin, 2018). In this case, the participants are students and members of the educational team of each school and an array of methods were used: semi-structured interviews with adult participants, workshops focused on students' self-narratives and photovoice, a survey, and participant observation.

A consistent research design establishes a clear connection between the data to be gathered and the initial research questions. Every empirical study inherently implies a research design,

whether explicit or implicit. Strengthening case study designs is achievable by formulating a 'theory' regarding what insights are sought. The theoretical propositions not only guide the study but also provide a foundation for drawing analytical rather than purely statistical generalisations based on the case study (Yin, 2018). Therefore, multiple-case studies (Yin, 2018):

- prioritise replication over sampling.
- include cases that should yield either comparable results, which is often referred to as literal replication, or contrasting results i.e. theoretical replication, with these expectations explicitly outlined at the beginning of the research.
- take a holistic or embedded form.

Multiple-case study designs offer both strengths and challenges compared to single-case studies. One of the main advantages is that evidence gathered from multiple cases is often viewed as more persuasive, contributing to a stronger overall study (Herriot and Firestone, 1983). This can result in a more robust research design. However, certain types of cases, such as unique, critical, or revelatory cases, typically necessitate a single-case approach, as these specific situations are not easily addressed through multiple-case designs (Yin, 2018).. Additionally, conducting multiple-case studies often demands significant resources and time, which may exceed the capacity of an individual researcher or a small-scale project (Yin, 2018).

A common and basic design for a multiple-case studies implies selecting 2 or more cases, 3 for this study, which are thought to be similar -replications- in regards to “outcomes in connection to an evaluation question” (Yin, 2018, p. 95). In some studies, case studies are specifically selected because they are considered replications (Yin, 2018). This is not the case for this study. The schools selected for this research share similarities but are in no way considered to be replicas.

This multiple-case study employs a holistic design (see Figure 5, Type 3) which includes three distinct cases. Each school in this study is situated in markedly different socio-historical and cultural contexts, thus this approach carefully considers the unique characteristics of the context in which each case is situated. By adopting this design, the study can account for the specific contextual factors that influence the educational environment and context in each setting, thereby allowing for a more nuanced and grounded analysis.

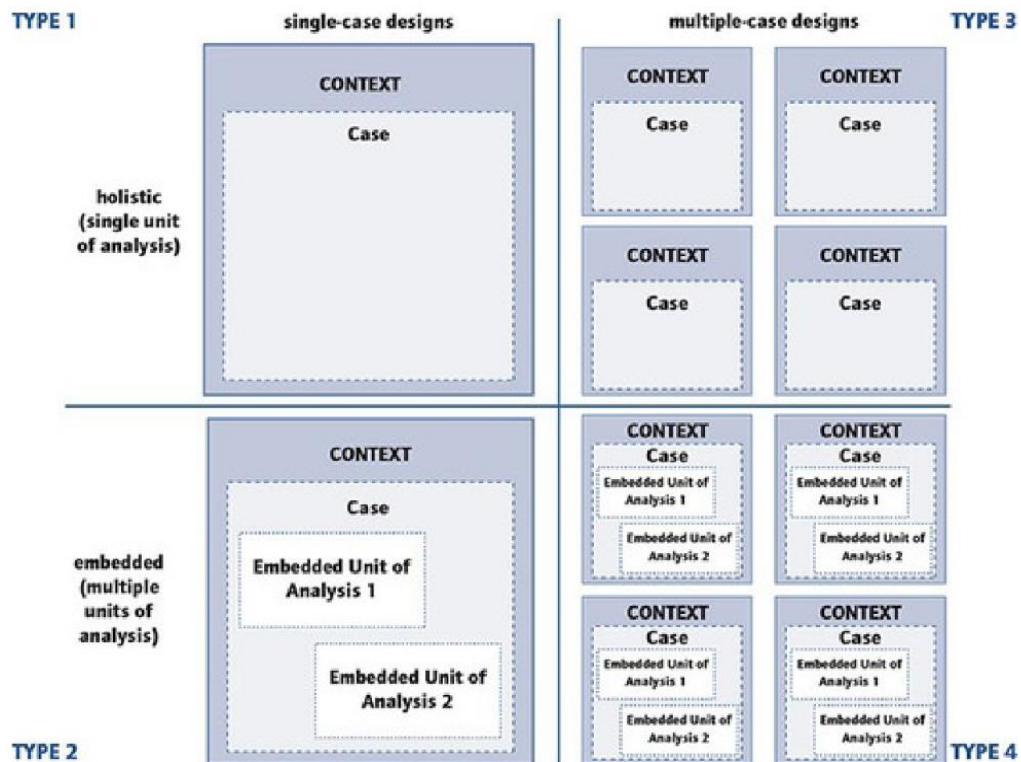


Figure 5. Types of case study design (Yin, 2018, p. 84).

The research design undertaken in this study can be categorised as both exploratory and convergent (Creswell, 2015); the former, as it does not attempt to explain but rather explores a phenomenon. The latter because the qualitative and quantitative data collected are triangulated in data analysis to enhance its interpretation. Figure 6 is a graphic illustration of this process:

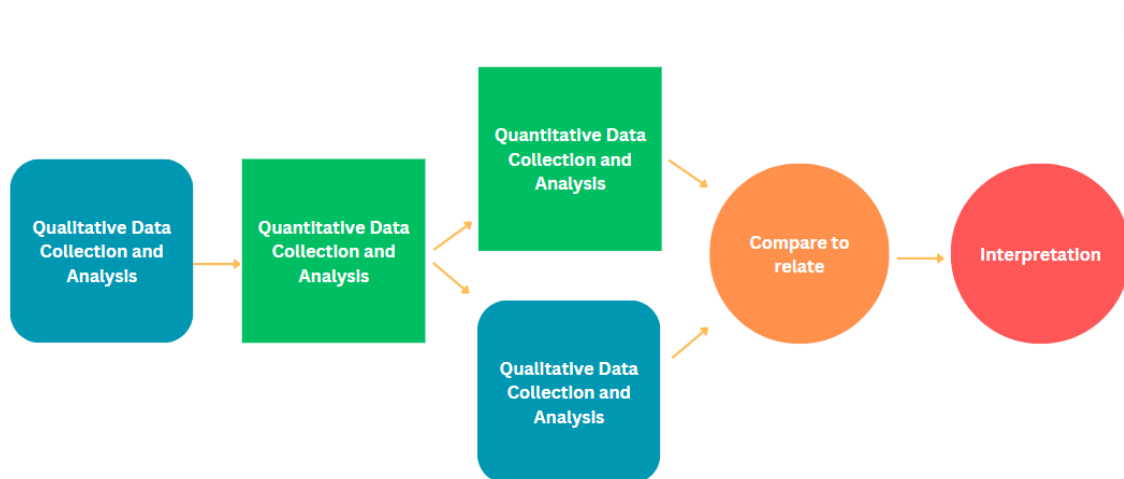


Figure 6. Research Design. Adapted from (Creswell, 2015).

In this multiple-case study, there is a natural sequential and chronological order that takes place in data preparation, collection and analysis as well as in how and when the data is reported to the schools. Figure 7 illustrates this process:

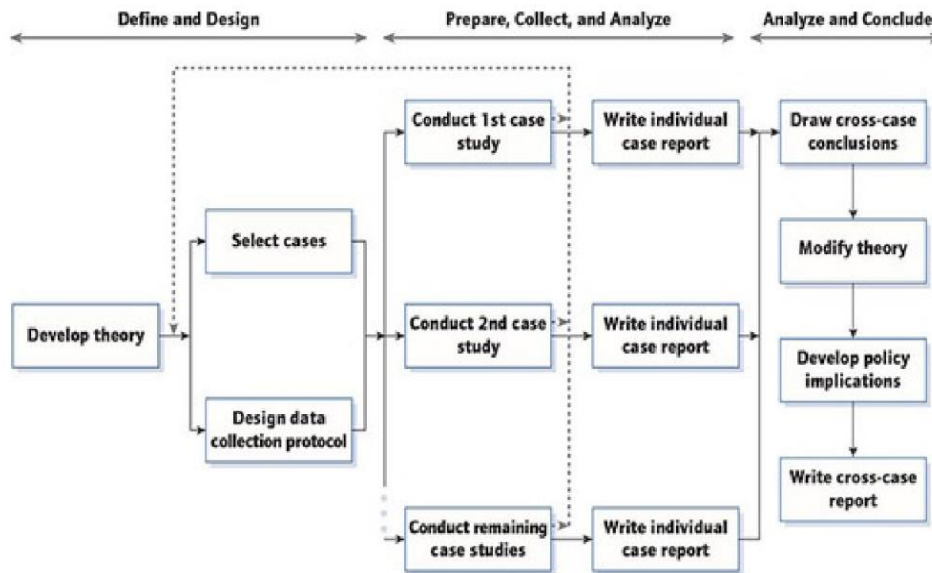


Figure 7. Research Process (Yin, 2018, p. 95).

In short, this study started by a literature review that was the ground for selecting the cases, the research questions and aims, and designing the data research process. The fieldwork in the three case studies was sequential, starting from School Lozzo Atestino (ITA), then School Creciendo Juntos (ARG), and finally School No. 294 (URY). As each fieldwork developed, and concluded, individual case reports were drafted and shared with the educational team of the corresponding school. After finishing the fieldwork in the three schools and the data analysis process, theoretical implications of the findings were drawn.

3.2.3 Evaluating the Quality of the Research Design

The effectiveness of the research design can be assessed by evaluating it against qualitative research validity tests as proposed by Creswell and Miller (2000). These authors claim that researchers approach validity in two ways: through the perspectives they adopt to justify their studies and through the underlying paradigmatic assumptions guiding their work. A two-dimensional framework is proposed to help researchers determine suitable validity strategies for their research (Creswell and Miller, 2000). Hence, validity is defined as the extent to which an account accurately reflects participants' experiences of social phenomena and is credible to them (Schwandt, 1997).

Qualitative researchers adopt a different perspective on validity compared to traditional quantitative approaches (Creswell and Miller, 2000). Instead of relying on scores, instruments, or research designs, qualitative researchers focus on a lens shaped by the perspectives of those conducting, participating in, or reviewing the research (Creswell and Miller, 2000); the term "lens" refers to the perspective researchers use to establish validity within a study.

The constructivist or interpretive paradigm emerged in the 1970s and 1980s (Denzin and Lincoln, 1994) and continues to influence contemporary perspectives on validity (Creswell and Miller, 2000). Constructivists advocate for diverse, interpretive, flexible, and context-sensitive approaches to understanding reality, considering specific places and situations. Creswell and Miller (2000) argue that validity procedures rooted in this paradigm employ criteria distinct from those used in quantitative research, and includes concepts such as trustworthiness (encompassing credibility, transferability, dependability, and confirmability) and authenticity (emphasizing fairness, broadening individual perspectives, enhancing understanding of others' views, encouraging action, and empowering change). Creswell and Miller (2000) offer three criteria for analysing validity from a constructivist perspective: disconfirming evidence, prolonged engagement in the field, and thick and rich descriptions.

3.2.3.1 Disconfirming Evidence

This process is similar to triangulation and it involves researchers actively seeking evidence that contradicts or challenges their findings, often referred to as disconfirming or negative evidence (Miles and Huberman, 1994). This approach begins with identifying initial themes or categories in the study and then thoroughly examining the data for both supporting and contradictory evidence (Creswell and Miller, 2000). Researchers use their own interpretive perspective in this process, which aligns with constructivist principles due to its reliance on exploring diverse viewpoints rather than following rigid, systematic methods. This practice can be particularly challenging, as researchers often tend to focus on evidence that aligns with their conclusions rather than seeking contradictions (Creswell and Miller, 2000). Importantly, while disconfirming evidence should not outweigh supporting evidence, identifying it enhances the credibility of a narrative. By incorporating this step, researchers strengthen the validity of their account, acknowledging the constructivist view that reality is inherently multifaceted and complex (Creswell and Miller, 2000).

3.2.3.2 Prolonged Engagement in the Field

Another approach to ensuring validity involves researchers spending extended periods at the research site (Creswell and Miller, 2000). Fetterman (2020) highlights that ethnographic research

is credible and vibrant through an immersion in the daily lives of people for a considerable time. Through prolonged engagement, researchers develop trust with participants, identify key individuals who can facilitate access to sites and people, build relationships that encourage open sharing, and give back to those involved in the study (Creswell and Miller, 2000). This method emphasizes constructing a credible and comprehensive account by gathering evidence that integrates various perspectives. Extended time in the field allows researchers to test their interpretations, cross-check interview findings with observations, and refine their understanding (Creswell and Miller, 2000). Although it is not a rigidly structured process, constructivists value longer field engagements for capturing diverse participant perspectives and deepening their contextual understanding. While there is no fixed timeline for this approach, ethnographers typically remain on-site for periods ranging from four months to a year (Creswell and Miller, 2000).

3.2.3.3 Thick and Rich Descriptions

One way to increase validity, reliability, and credibility in qualitative research is by offering a detailed depiction of the study's setting, participants, and themes (Creswell and Miller, 2000). Denzin (1989) differentiates between thick descriptions i.e. comprehensive, layered, and vivid, from thin descriptions i.e. sparse and merely report facts.

Thick descriptions aim to create verisimilitude, or rather accounts that allow readers to feel as though they have experienced, or could experience, the events described (Creswell and Miller, 2000). Credibility, therefore, is achieved through the reader's lens, as they engage with the narrative and feel transported into the study's context. To implement this approach, researchers adopt a constructivist perspective, grounding their descriptions in the specific contexts of the people or sites studied (Creswell and Miller, 2000). Writing with thick description involves capturing intricate details of interactions, experiences, or actions, situating individuals in specific contexts, portraying relationships or dynamics between individuals, and vividly conveying emotions or perspectives (Denzin, 1989). By crafting such detailed accounts, researchers not only enhance the credibility of their work but also provide readers with the information needed to determine whether the findings are applicable to other settings or similar contexts (Creswell and Miller, 2000).

3.3 Cases

Yin (2018) suggests selecting cases for a multiple-case study by adhering to a replication logic, and not sampling. This is because selecting appropriate cases that might help answer the research questions is fundamental. In the process of doing so, it is important to not only have a

clear picture of if and how the case might fit the research, but in this case, since the focus is on schools, access to gatekeepers and participants become a crucial factor. Thus, the three selected schools not only comply with the criteria described below, but would also be open to conduct observations, workshops with students and interviews with different stakeholders.

The three selected schools are well-known for their “sustainability” oriented work in different sociocultural contexts. These three schools are in Argentina, Italy and Uruguay. The selection criteria and rationale behind selecting these schools was: i) relevance and consolidation of the educational project which has been locally or internationally recognised for its sustainability-oriented educational project; ii) minimum 5 years of sustainability-oriented project implementation; iii) diversity in terms of their student population size, geographical location (rural, urban, semi-urban) and regarding the socio-economic context in which they are immersed.

In conducting a multiple-case study involving schools located in three different countries, one encounters a diverse yet interconnected educational landscape. Despite the geographical distances and varying socio-economic contexts, these three schools provide fertile ground for comparative analysis. The comparability of School Lozzo Atestino (ITA), School Creciendo Juntos (ARG), and School No. 294 (URY) lies on the following:

i) They have a shared mission of providing quality education, cultivating civic values, and preparing students for active participation in society.

ii) Each school reflects a response to the specific needs of its community. The Italian school addresses the educational demands of a high-income nation with a well-established public education system. In contrast, School Creciendo Juntos (ARG) and School No. 294 (URY) cater to communities where education systems face significant challenges related to resources, infrastructure, and socio-economic inequality. This comparative study can shed light on how three institutions that are considered examples on “sustainable education” address their distinctive challenges and attempt to meet the educational needs of their students.

iii) Despite the fact that one school is located in the Global North (Italy), and - in the wealthier North-east region - and two schools are in the Global South, there are significant cultural links between these contexts, rooted in shared histories, languages, and values. Argentina, Italy, and Uruguay share deep historical ties due to first European colonisation, and then, migration waves. The influence of Italian immigration in Argentina and Uruguay, particularly during the late 19th and early 20th centuries, is profound. This historical connection has led to shared cultural

elements that become evident in food, religion, customs, and some societal values. Both Argentina and Uruguay have large populations with Italian heritage, and this cultural connection often fosters a sense of shared identity that transcends geographical boundaries. For instance, the Catholic Church has played a significant role in shaping educational values, especially in Italy and Argentina. The Catholic legacy continues to influence curricula and values, particularly in areas related to social responsibility and community engagement.

iv) These three cases are also connected by broader trends in globalisation which affect educational policies and practices. Educational systems worldwide are increasingly influenced by international standards and assessments, such as PISA (Programme for International Student Assessment). These shared global benchmarks create a common ground for comparing educational outcomes, despite differences in local contexts.

Despite the similarities between the three schools, there is one stark difference in School Creciendo Juntos (ARG) compared to the other two. School Creciendo Juntos (ARG) is not a public school, but rather a social governance school. School Creciendo Juntos (ARG) is part of the over 500 schools in Argentina that take a social governance approach, driven by community involvement and with limited governmental oversight. This governance model often allows for greater flexibility in responding to the immediate needs of the students and community, fostering a sense of ownership and participation among stakeholders.

Social governance schools often have more freedom than public schools to implement innovative educational practices that align with the specific values and needs of the community. This can include alternative pedagogical approaches, culturally relevant curricula, and a stronger focus on social justice and equity in education. Another significant difference between the three schools is that School No.294 (URY) is a rural school, and due to the low enrolment rates in the rural areas in Uruguay, adopts a multi-grade system. In this school, students are grouped from Grades 1 to 3, and 4 to 6, with one teacher per group.

In sum, this multiple-case study includes School Creciendo Juntos (ARG), School Lozzo Atestino (ITA), and School No. 294 (URY). This research reveals a complex interplay of cultural, historical, and socio-economic factors that influence educational practices across different contexts. Despite the geographical and economic disparities, these schools share common goals in terms of sustainability while meeting the needs of their communities. The following sections introduces each of the cases.

3.3.1 School Creciendo Juntos (Argentina)

3.3.1.1 Location, Community and Student Population

School Creciendo Juntos, otherwise known as *Comunidad Educativa Creciendo Juntos*, is located in Moreno approximately 30 kilometres from downtown Buenos Aires. The school is approximately 2 hours away from the city centre by public transport.

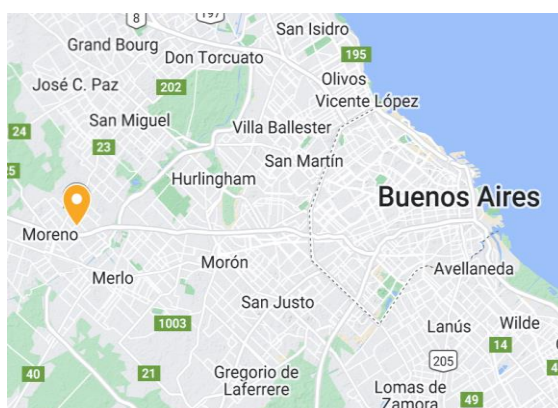


Figure 8. Location of School Creciendo Juntos.

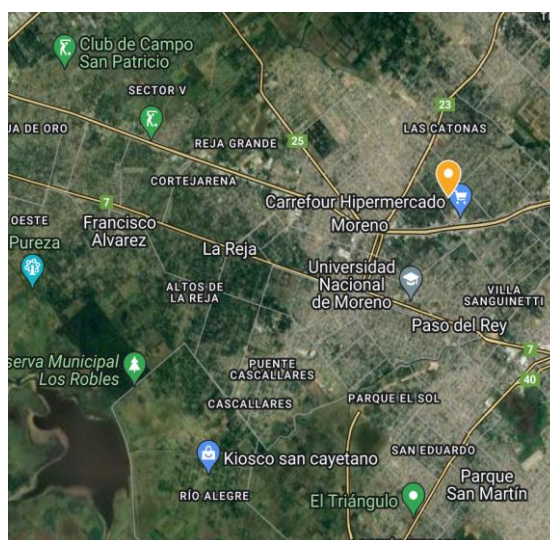


Figure 9. Location close-up of School Creciendo Juntos.

Creciendo Juntos means “Growing Together” in Spanish, which reflects the institutional visions and missions. Moreno is a lower-middle income neighbourhood which is often portrayed as a “rough area” in the media. According to interviewees, the school is situated in a lower-middle-class neighbourhood. The neighbourhood is characterised by unpaved streets, scattered litter, and proximity to General Paz, one of the major highways serving Buenos Aires.

Historically, Moreno was a retreat for second homeowners from Buenos Aires seeking a rural escape. However, since the 1990s, as the population in Buenos Aires expanded, Moreno has undergone significant changes and now has a population of approximately 800,000 inhabitants. Public services in Moreno, such as schools and hospitals, are limited, particularly outside the central area. Recently, a public university opened in the area and offers a limited range of courses.

Since its inception in 1982, the school has served as testament to the transformative power of education shaped by and for the community it belongs to. Moreno has witnessed significant demographic growth in the last 20 years, but it lacks educational infrastructure, particularly for early childhood education. School Creciendo Juntos emerged from the collective need of

neighbourhood residents for their children. The school was founded by a group of parents in response to a lack of nurseries in the neighbourhood and is now a K-12 school. In the last three years in secondary education, they only offer a specialisation in Visual Arts. From an infrastructure viewpoint, it is a small school. There are a limited number of classrooms, a courtyard and a multipurpose field which is used for Physical Education and for unsupervised playing time.

Unsurprisingly, the school location and surrounding community are deeply intertwined with the school's mission and educational philosophy. Over time, this has led to community-oriented education, reflecting the local culture, needs, tensions, issues and aspirations. There are 539 students at School Creciendo Juntos and the student body represents the diverse demographic constitution of the Moreno neighbourhood, which encompasses a wide range of socio-economic backgrounds. However, it is fair to say that most students come from low-middle income households.

The school is a social governance school which means it is not a state public school, but it is not what is commonly understood as a private school either. Even though these types of institutions have been acknowledged by the National Education Law 26.206 since 2006, from a legal standpoint there are over 500 similar schools across the nation fighting for a specific distinction regarding their legal and operational status, which grouped together with private schools in Law 26.206⁴. In short, this social governance school asks families to pay a small fee, approximately 6000 Argentinian pesos⁵ when fieldwork took place (approximately 15 euro per month), and therefore its student population is not that of elite private schools.

The school's ethos of accessibility and rights-based education ensures that no student is left out due to economic hardships. Nevertheless, there are waiting lists for most school grades, which respond to a lack of physical space which the school is trying to partially overcome by having two school terms, one in the morning and another one in the afternoon. To this end, they are currently in the process of doubling its classroom infrastructure.

⁴ For more see: <https://www.argentina.gob.ar/sites/default/files/ley-de-educ-nac-58ac89392ea4c.pdf>
<https://alteredu.com.ar/ni-estatales-ni-privadas-las-escuelas-de-gestion-social-piden-plena-integracion-a-la-educacion-publica-argentina-el-pueblo-y-las-organizaciones-sociales-tenemos-el-derecho-de-ser-protagonistas-de/>

⁵ It is worth noting that due to the volatile economic situation Argentina is going through, these figures might have changed in the past two years.

3.3.1.2 Educational Team

The educational team at School Creciendo Juntos is composed of 65 professionals who share a collective commitment to social justice through education. Inspired by the ideals of education as a transformative tool for social change, the educational project aims to empower students from popular sectors. This commitment is reflected in the emphasis on collective, rather than individual, tasks and achievements. The team's approach is characterised by a politicised practice informed by Paulo Freire's philosophy, recognising educators as political beings whose teaching either challenges or perpetuates social inequalities.

3.3.1.3 Infrastructure

The infrastructure of School Creciendo Juntos is simple, and it has been progressively expanded and renovated as the student population has increased over the years. Along with architectural students from the University of Buenos Aires (UBA), members of the school community have built a classroom using “eco bricks”, mostly from plastic and glass waste.

With an emphasis on creating an “open doors” school, the physical space of the school is structured to encourage interaction between the school and its surrounding community, reflecting its founding principles of collective construction and decision-making. The school serves not just to accommodate traditional learning but also as a community hub where educational and social community activities take place. This approach allows the school to act as a transformative space within its territory, enabling both educational and social community development. Notably, the school has a student-led community radio, and it has become one of the pedagogical pillars of the school project.



Figure 10. School Entrance at School Creciendo Juntos.



Figure 11. Central courtyard at School Creciendo Juntos.

3.3.1.4 Curriculum and Educational Approach

The curriculum and educational approach of School Creciendo Juntos are grounded on the public curriculum, which is adjusted as the educational team sees fit. The curriculum is designed to be responsive to the needs and realities of the students' and the broader community, thus integrating themes of social justice, national and regional politics, and community activism. Education is framed as a political act, whereby the school challenges the traditional neutrality of educational institutions by actively engaging with its neighbourhood and cultivating a critical consciousness among students. The educational approach is characterised by a commitment to creating meaningful, situated learning experiences that encourage students to become active, critical participants in their communities.

3.3.2 School Lozzo Atestino (Italy)

3.3.2.1 Location, Community and Student Population

School Lozzo Atestino, or *Istituto Comprensivo di Lozzo Atestino* in Italian, is situated in the province of Padova, north-east of Italy. This school is spread across nine buildings in three municipalities: Cinto Euganeo, Vo', and Lozzo Atestino. The nine school buildings are located in a semi-rural context, approximately 30 kilometres from Padova, the nearest city. It hosts 782 students from kindergarten to middle school (*Istituto Comprensivo di Lozzo Atestino*, 2024).

According to interviewees, the student population comes from a lower-middle socioeconomic background. For the purposes of this study, five classes located in four school buildings were included: Cinto Euganeo Primary school, Cinto Euganeo Middle School, Vo' Euganeo Middle School; Lozzo Atestino Middle School.

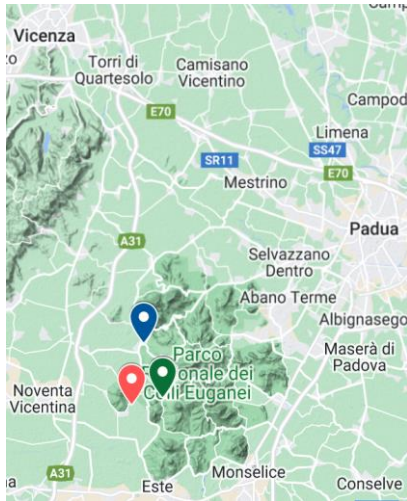


Figure 12. Location of School Lozzo Atestino.

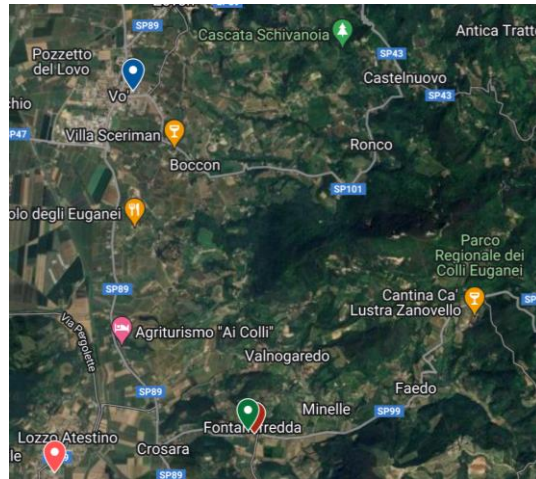


Figure 13. Location close-up of School Lozzo Atestino.

The four school buildings where fieldwork took place are highlighted in Figure 13. For scale, the distance between the blue and red marker in Figure 12 is 5km.

3.3.2.2 Educational Team

This school is run by a well-known school leader for his work in robotics and tinkering. He is a nationally recognised leadership trainer, has published school leadership books and has created popular MOOCs about the use of artificial intelligence in Primary Education promoted by the Ministry of Education. Moreover, in 2016 he was given the “Best Innovative Teacher” award. At School Lozzo Atestino, STEM disciplines and coding are integrated into the curriculum. This dedication to pedagogical advancement is further exemplified by the institution's commitment to professional development, with over 200 hours dedicated to training programs aimed at fostering a progressive educational ecosystem. Such collaborative and visionary leadership has been instrumental in creating the institution's reputation as a hub of educational innovation.

3.3.2.3 Infrastructure

The school is spread across nine different school buildings. Therefore, the diversity in terms of school infrastructure is not surprising. Whereas some buildings are newly renovated and boast classrooms designed by a renowned architect, others are older and have less space.

This institution has been visited by President Mattarella and has been recognised as a vanguard of contemporary education, equipped with state-of-the-art facilities that facilitate an immersive and interactive learning experience. The incorporation of the School Plan 4.0 underscores the school's intention in integrating digital technologies. Such infrastructural advancements underscore the school's commitment to creating an educational setting that resonates with the principles of STEM education.

3.3.2.4 Curriculum and Educational Approach

The curriculum at the School Lozzo Atestino is standardised, as in all public schools in Italy. However, each school has autonomy to select and focus on specific sections of the curriculum. Not surprisingly, the principles of STEM education have been selected as predominant. The headteacher's strategic vision has imbued the school's culture. This focus on technological education is coupled with purposefully built learning environments. School Lozzo Atestino is often portrayed in local media as a paragon of academic excellence and pedagogical innovation within the Italian public education landscape.



Figure 14. Primary School Lozzo Atestino.



Figure 15. Vegetable Garden at Primary School Lozzo Atestino.

3.3.3 School No. 294 (Uruguay)

3.3.3.1 Location, Community and Student Population

School No. 294, commonly known as “The Sustainable School” (*La escuela sustentable*), was built in 2016 (Tagma, 2024). It is located in a small coastal town 80 kilometres from the capital city, Montevideo, called Jaureguiberry.

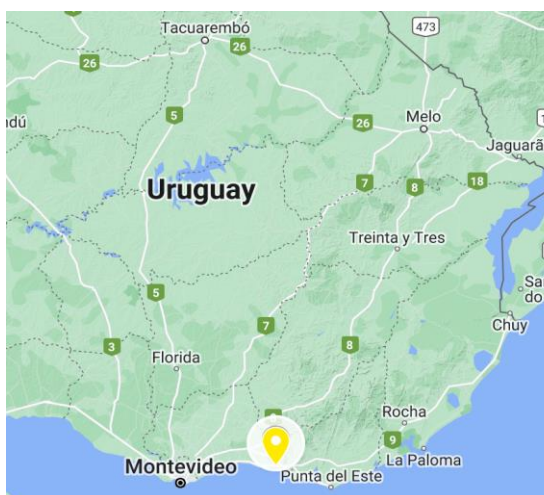


Figure 16. Location of School No.294.

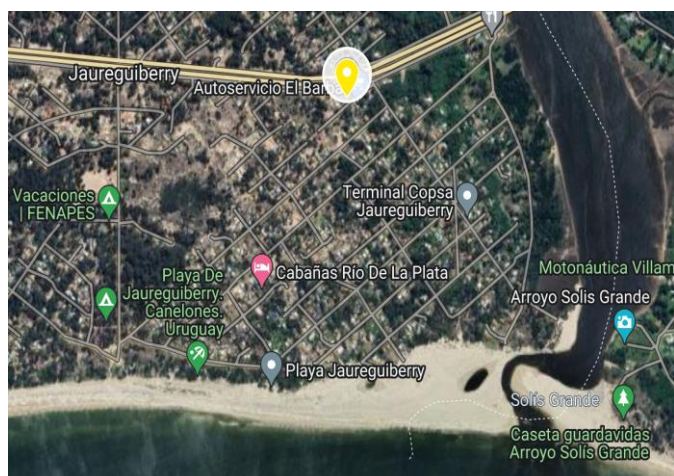


Figure 17. Location close-up of School No.294.

School No. 94 was built by NGO Tagma and it has gained international notoriety for being recognised as the self-sufficient public school in Latin America (IADB, 2020; Tagma, 2024). It was

the first in a fast-growing network of similarly designed schools built by NGO Tagma across Latin America, including Argentina, Chile, Ecuador, Peru, and Colombia (Posada, 2023; Tagma, 2024).

As Figure 17 shows, School No.294 is located in a low-density populated area near the coast. School No. 294 has adopted a pedagogical focus centred on sustainability (Una Escuela Sustentable, 2021). School No. 94 is categorised as a rural school, and it caters 85 students from a lower-middle socioeconomic background.

3.3.3.2 Educational Team

The school has a small educational team of four professionals: one headteacher who also teaches Grades 4-6, one teacher for Grades 1-3, one preschool teacher and a nationally renowned expert in agroecology who assists with the vegetable garden as a volunteer. Additionally, volunteers from NGO Tagma, who built the school, are in contact with the headteacher and community members and often provide aid with simple maintenance tasks.

Similar to most rural schools in Uruguay, this institution follows a multigrade model, where headteachers also act as teachers and instruct multiple grade levels simultaneously (ANEP-CEIP, 2013). Each year, national educational authorities decide whether to remove or assign new teachers based on a classification system that primarily takes into consideration years of experience.

3.3.3.3 Infrastructure

The self-sustained building is called an Earthship, originally developed by a renowned architect named Michael Reynolds. School No. 294 was designed based on biotecture principles (Earthship Biotecture, 2021; Tagma, 2024), which includes building with natural and recycled materials, passive heating and cooling through thermal and solar systems, a vegetable garden, systems for harvesting rainwater and a contained sewage treatment. Figure 18 exemplifies how these systems interact in an Earthship building:

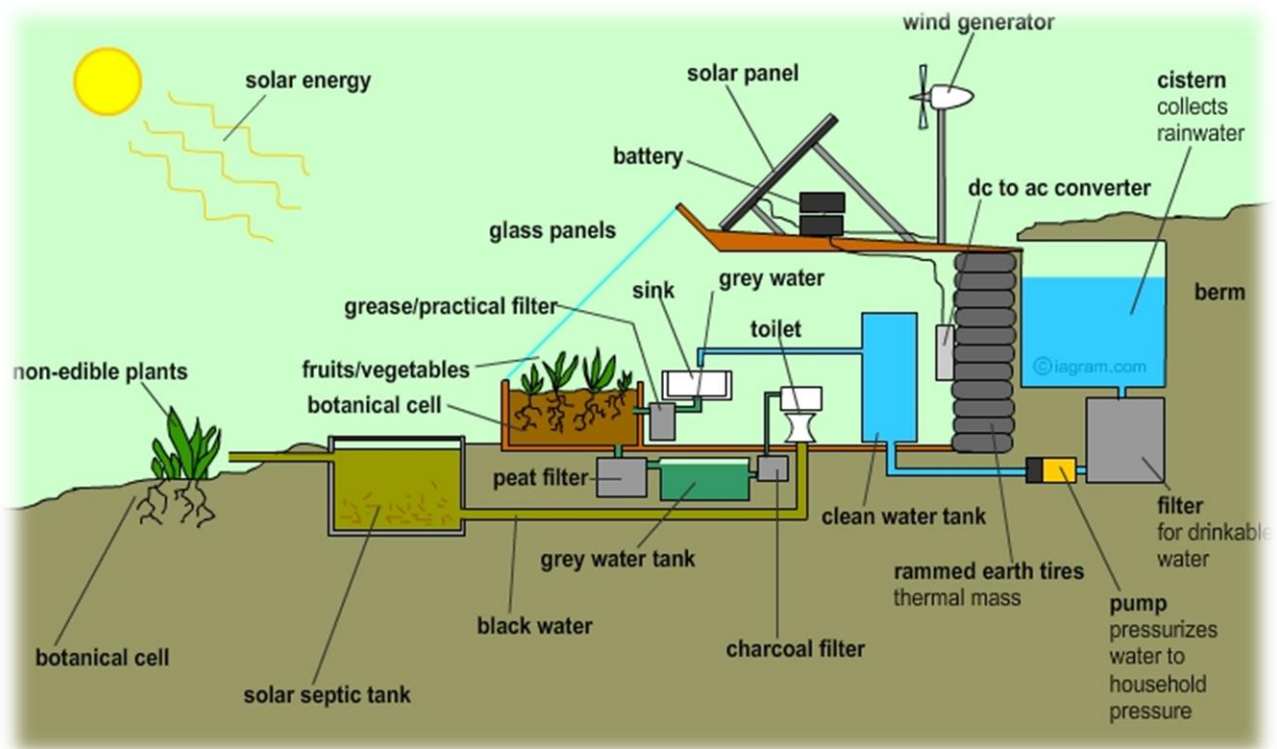


Figure 18. Earthship systems (Econologia, 2010).

3.3.3.4 Curriculum and Educational Approach

At this school, the national standardised curriculum is followed. However, since there are no standardised tests in Uruguay, this allows for relative curriculum freedom for teachers. This becomes evident in school projects like learning different subjects through the vegetable garden, where students apply a hands-on approach that transcends traditional school limits.

There have been two academic studies focused on this school. One study conducted in 2016, shortly after the school's opening, delved into its practices. This qualitative study revealed two primary findings: the community's challenges in establishing a school in their area and how the unique building influenced the perception of knowledge, attracted media and general public, and shaped the community's engagement with this unique structure (Milstein *et al.*, 2016). The second study explored (Posada, 2023): i) barriers and enablers for Transformative Learning for a Sustainable Future (Laininen, 2019); and ii) how the community had responded to this unique school and its sustainability policies and practices.



Figure 19. Public School No. 294 (Una Escuela Sustentable, 2021).



Figure 20. Indoor corridor at School No. 294.

3.4 Participants

The participants in this study included students aged 11-15 and the educational team that supports their learning process in the three schools. This is summarised in Table 1:

School	Grade level	Students	Educational Team
School Lozzo	Three 7th Grade	105	3 teachers
Atestino (ITA)	One 5th Grade	85 (7th Grade) 20 (5th Grade)	1 school principal
School Creciendo Juntos (ARG)	7th, 8th and 9th Grades	95 33 (7th Grade) 30 (8th Grade) 32 (9th Grade)	3 teachers 1 school principal 1 school vice principal 1 school counsellor
School No.294 (URY)	4th-6th Grade (multigrade system)	34	2 teachers 1 school principal
Total	8 classes	234 students	13 members of educational teams

Table 1. Summary of participants.

3.5 Data Collection Methods

Data was collected through interviews with the educational team, survey and experiential learning workshops with students and participant observation from October 2022 until April 2023. These mixed methods have been selected in order to collect complementary data and to triangulate it through its analysis (Yin, 2018). Alongside these methods, ethnographic notes were taken throughout the field study, especially during interviews and field observations which are integrated in the analysis.

Student data collected and analysed for this study has been deidentified, anonymised and uploaded to Zenodo, an open access data platform. The database can be accessed [here](https://zenodo.org/records/13362570) or at this link: <https://zenodo.org/records/13362570>.

3.5.1 Interviews

Thirteen semi-structured interviews with members of the educational team were conducted for this research: six in School Creciendo Juntos (ARG), four in School Lozzo Atestino (ITA) and three in School No.294 (URY).

Interviewed participants were the headteachers of the three schools, teachers, and educators. The semi-structured interviews were organised in three blocks: professional experience, the school and its context, and sustainability at the school. To increase the validity of the interview

guide, pilot interviews were conducted with 3 individuals who work in the educational field. The interview guide can be found in [Annex I](#).

The decision of conducting semi-structured interviews with members of the educational team was made, firstly, because it is a method that offers balance between structure and flexibility thus allowing the researcher to explore predetermined topics while remaining open to unanticipated insights that may arise during the conversation. Semi-structured interviews provide a systematic approach to questioning while still allowing flexibility to address relevant information that may not have been initially included in the interview guide (Patton, 2015). This approach is particularly useful considering that this research takes place in three countries, where participants' experiences and perspectives may vary significantly based on their roles, experiences, and interpretations of present and past experiences (Brinkmann and Kvale, 2015).

Secondly, semi-structured interviews are conducive to capturing the complex and nuanced perspectives that educators may have about their school projects and how they are linked to sustainability. These interviews enable participants to articulate their experiences and reflections in their own words, providing rich, qualitative data that is essential for exploring the multifaceted nature of sustainability in education (Drever, 1995). This method is particularly suited for examining how sustainability is first conceptualised and then implemented in diverse educational settings (Creswell and Poth, 2018). Thus, semi-structured interviews are a suitable method for exploring the dynamics of sustainability and education in these three schools by enabling the collection of detailed and context-rich data that is crucial for understanding how educational practices are conceptualised and experienced in each context.

3.5.2 Survey

While case studies are traditionally associated with qualitative research, the ability to triangulate data from various sources, including surveys, enhances the robustness of the research (Yin, 2018). In fact, Yin (2018) emphasises that case studies are not confined to qualitative methods; the incorporation of surveys in case studies allows researchers to broaden the scope of enquiry through quantitative data.

However, surveys in the context of a case study have inherent limitations. While they can address “what,” “who,” and “where” questions, particularly in describing the incidence or prevalence of a phenomenon, their ability to delve into the context is restricted. Yin (2018) acknowledges that surveys can describe outcomes or track certain trends but are less effective in exploring the complexities of real-world interventions and the contexts in which they occur. The depth required to understand causal relationships and the nuances of specific cases often

exceeds the capacity of survey methods, which are better suited to generalising findings across broader populations rather than providing rich, contextual insights (Yin, 2018). The survey used in this study was divided in three sections:

- i. Sociodemographic section (items 1-17): This section includes questions that gather personal information related to the respondents' living conditions, mobility, schooling, sports involvement, and volunteer activities.
- ii. Ecological Footprint Section (items 18-32): This segment assesses the respondents' awareness of everyday behaviours that impact the environment. It differentiates between actions that are autonomous decisions and those influenced by family choices.
- iii. Human-Nature Relationship Section (items 33-53): This part asks respondents to express their views on potential strategies for preserving the natural environment. The questions aim to gauge individual opinions on environmental conservation.

For a complete list of survey questions see [Annex X](#).

3.5.3 Experiential Learning Workshops

In this study, experiential learning workshops with students were conducted for two main reasons: i) to gain access to students' perspectives on sustainability and their views about their futures, which was key information to address the research questions; ii) to provide the educational community with a tangible and practical participation in this study. Too often researchers address fieldwork at schools as a data extraction process and do not offer the school community anything in return, which is problematic. Keeping in mind that one of the aims of this research is to offer the school community with tangible experiences that can promote a better understanding of their own educational practices, experiential learning workshops with students were deemed a suitable approach.

The design of the experiential learning workshops was done collaboratively with the teachers. A list of over 20 possible workshop topics was provided to the 8 teachers involved in this study, and they agreed on the following four topics:

- i. Are we all connected? How? Where does sustainability fit in?
- ii. Inequality: how does (un)sustainability affect different social actors and groups?
- iii. What is the importance of individual and collective action in sustainability?
- iv. Are we nature? What does it mean to be part of nature?

Each workshop was designed to last between 90 and 120 minutes depending on the time availability each school could offer. These experiential learning workshops were participatory in nature and the aim was to provide students with a safe space to interact and discuss complex issues.

Before conducting the experiential learning workshops, the school headteachers and teachers were sent a document that summarised the title and main activities to be carried out during each session (see [Annex II](#) for workshop structure in School Creciendo Juntos (ARG)). In total, 28 experiential learning workshops were carried out: 16 workshops in School Lozzo Atestino (ITA), 9 in School Creciendo Juntos (ARG), and 3 in School No. 294 (URY) (for the full schedule of experiential learning workshops carried out see [Annex III](#)).

Arts-based research encompasses two primary traditions: participatory approaches and performative approaches (Tarr, Gonzalez-Polledo and Cornish, 2018). Participatory approaches focus on empowering participants by engaging them in innovative methods of inquiry, highlighting their agency in the research process (Wang and Burris, 1997). In contrast, performative approaches stress that the research methods themselves shape or construct social realities, thus necessitating careful consideration of the forms these methods take (Law and Urry, 2004; Tarr, Gonzalez-Polledo and Cornish, 2018). Although these traditions differ in their understanding of agency and materiality, they both commit to the idea that research is a creative act that produces social realities, rather than merely documenting them (Tarr, Gonzalez-Polledo and Cornish, 2018).

These workshops were aligned with both of these traditions since the main goal was to provide students with the opportunity to express their opinions through stories of photos, while keeping in mind that the workshops, and what was being discussed, were impacting students' opinions, at least at that point in time.

Due to logistical and time constraints, in the case of School Creciendo Juntos (ARG) and School No.294 (URY), the four experiential learning workshops were condensed into three. This limitation was contrasted by focusing more time on specific activities such as students' self-narratives and photovoice.

3.5.3.1 Students' Self-Narratives

One of the aims of the workshops was to try to understand how students feel about their own futures and that of their communities. In order to do this, towards the end of the second workshop, in which they had done a number of group dynamics that highlighted the importance

of community and teamwork (e.g. see activity ‘The Sustainable Team’ in [Annex II](#)) students were provided with the following prompt:

“What does the future look like for you? What will life in this community be like in 2040? What would change with respect to your lives today? Please take into account the social, political and economic organisation, personal organisation (what I eat, how I move, relationship with others/nature, study, work, etc.). You can express your vision of the future as a drawing, painting, or written in any format you prefer.”

This task is related to two of the research questions:

RQ1) How do schools provide scaffolding to students aged 11-15 towards developing sustainability competences? and sub-question 3) How do students perceive their futures? What are the general sentiments expressed in their narratives about their own future lives?

Therefore, it was paramount to elicit students’ perspective on their futures in order to try to understand how schools can adapt their practices to help students embody sustainability practices.

3.5.3.2 Photovoice

Photovoice is a participatory research method that allows individuals to express their experiences, perspectives, and opinions through photography. Originating from the fields of community development and public health, photovoice allows participants, especially those who may be marginalised or whose voices are often overlooked, to visually capture, share their lived realities and discuss. Participants take photographs that represent their views on a particular issue or topic, and these images are later discussed in group settings to elicit narratives, insights, and deeper understandings. This method is grounded in the belief that people are experts in their own lives and that visual imagery can communicate complex ideas and emotions that might be challenging to convey through words alone.

Photovoice is particularly well-suited for exploring the opinions of students aged 11-15 because it aligns with their developmental stage and interests. Adolescents in this age group are often highly engaged with visual media, making photography a familiar and accessible mode of expression for them. Additionally, photovoice encourages creativity and critical thinking, allowing young participants to articulate their thoughts in a way that is both engaging and meaningful. By enabling students to capture images that reflect their views, photovoice not only

provides insight into the students' perspectives but also fosters a sense of agency among the participants, making it an effective method to express their opinions.

After a workshop centred around the topic of sustainability (see [Annex II](#)), students were asked to take one photograph that answered the prompt “What is sustainability for me?” Students were asked to upload the photograph to Padlet, a simple and free platform to create collective whiteboards. Students also had to think of a title and a brief description of the photograph, especially where they had taken it and why. One of the aims of using photovoice is to provide participants with a practical tool to capture and share their perspectives on social and environmental challenges faced by their communities, both as individuals and through collaborative dialogue and creation.

Photovoice was selected as a method because of its ability to foster community dialogue regarding difficult topics. This method encourages participants to critically reflect on their beliefs and contributes to the creation of new knowledge, sometimes leading to paradigm shifts within the community (Kuratani and Lai, 2011). By enabling participants to visually represent their experiences, photovoice offers a unique avenue for expressing personal insights on issues that may be challenging to articulate through speech (Wang and Burris, 1997).

The collaborative nature of photovoice, which requires close interaction between researchers and participants, not only brings to light community concerns but offers participants new skills in self-expression and advocacy, thus integrating them more deeply into the research process (Moffitt and Vollman, 2005). Furthermore, the process of identifying significant and underlying issues within the community through photovoice can serve as a catalyst for uniting the community, ultimately facilitating collective action and change (Walker, 2023).

3.5.4 Participant Observations and Ethnographic Notes

Participant observation and ethnographic notetaking are useful methods in educational research, especially when the research is conducted across diverse cultural contexts such as in this study. Participant observation allows researchers to familiarise themselves with the diverse school environments by enabling them to observe behaviours, interactions, and the social dynamics of students, teachers, and school staff in their natural settings. This immersion provides a nuanced understanding of the school culture, which is shaped by the broader social, cultural and political contexts of each country. By being physically present, researchers can gather rich, detailed data that might not be accessible through other structured methods, such as surveys or interviews, which often rely on self-reported information that may be limited by the participants' perception or willingness to share.

Ethnographic notetaking complements participant observation by systematically documenting the observations, conversations, and events that occur within the school environment. These notes serve as a critical tool for capturing the immediacy and complexity of the observed phenomena, allowing the researcher to record not just what is said and done, but also the subtle nuances of body language, tone, and context that might otherwise be overlooked (Emerson, Fretz and Shaw, 2011). In a multi-country study, ethnographic note taking becomes even more crucial as it helps the researcher to maintain detailed records of the similarities and differences across the school environments in the different countries. This method provides rich raw data that may enable researchers to identify patterns, themes, and cultural specificities that are crucial for a comparative understanding of the educational practices and experiences in the diverse settings.

In this multiple-case study, these combined methods offer a unique opportunity to explore the influence of cultural context on education. They allow observing how local traditions, values, and educational policies shape the experiences of students, educators, and community members in each context (Hammersley and Atkinson, 2007). By engaging directly with the school communities, researchers can gain insights into how global educational trends are interpreted and implemented at the local level, as well as how cultural differences impact the learning environment. This approach not only enriches the quality of collected data but also increases the chances that the research findings are grounded in the lived realities of the participants, thus enhancing the relevancy and meaningfulness of the study in understanding the complexities of education practices and policies.

3.6 Data Analysis

3.6.1 Data Analysis Process

Patton (2015) argues that triangulating data sources can be used both to develop and corroborate findings. The aim of data triangulation from different data sources, in contrast with a single source of evidence, is to increase the validity and depth of the findings (Yin, 2018). In this study, findings emerge from triangulating data from five methods, as Figure 21 shows:

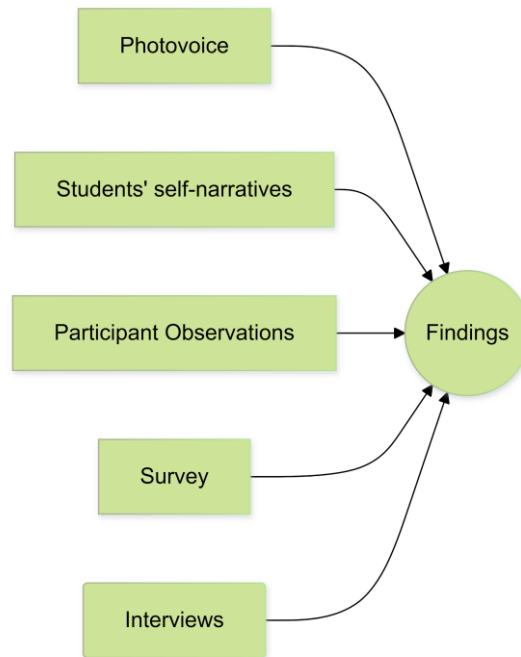


Figure 21. Convergence of Multiple Sources of Evidence, adapted from (Yin, 2018, p. 173).

In case studies, the process of data analysis entails a comprehensive examination, categorisation, tabulation, testing, or other forms of recombining data to arrive at empirically grounded conclusions (Yin, 2009). There are two primary avenues of data collection in case studies: data obtained through a wide array of methods, and the continuous analytical commentary by the researcher on such data (Cohen, Manion and Morrison, 2017). This iterative approach to data analysis provides the empirical basis to formulate conclusions and enhance the reliability, validity, and credibility of the research (Yin, 2009). In this study, the aim of this process was to construct a solid analytical structure to address the research questions. Figure 22 synthesises the data analysis process:

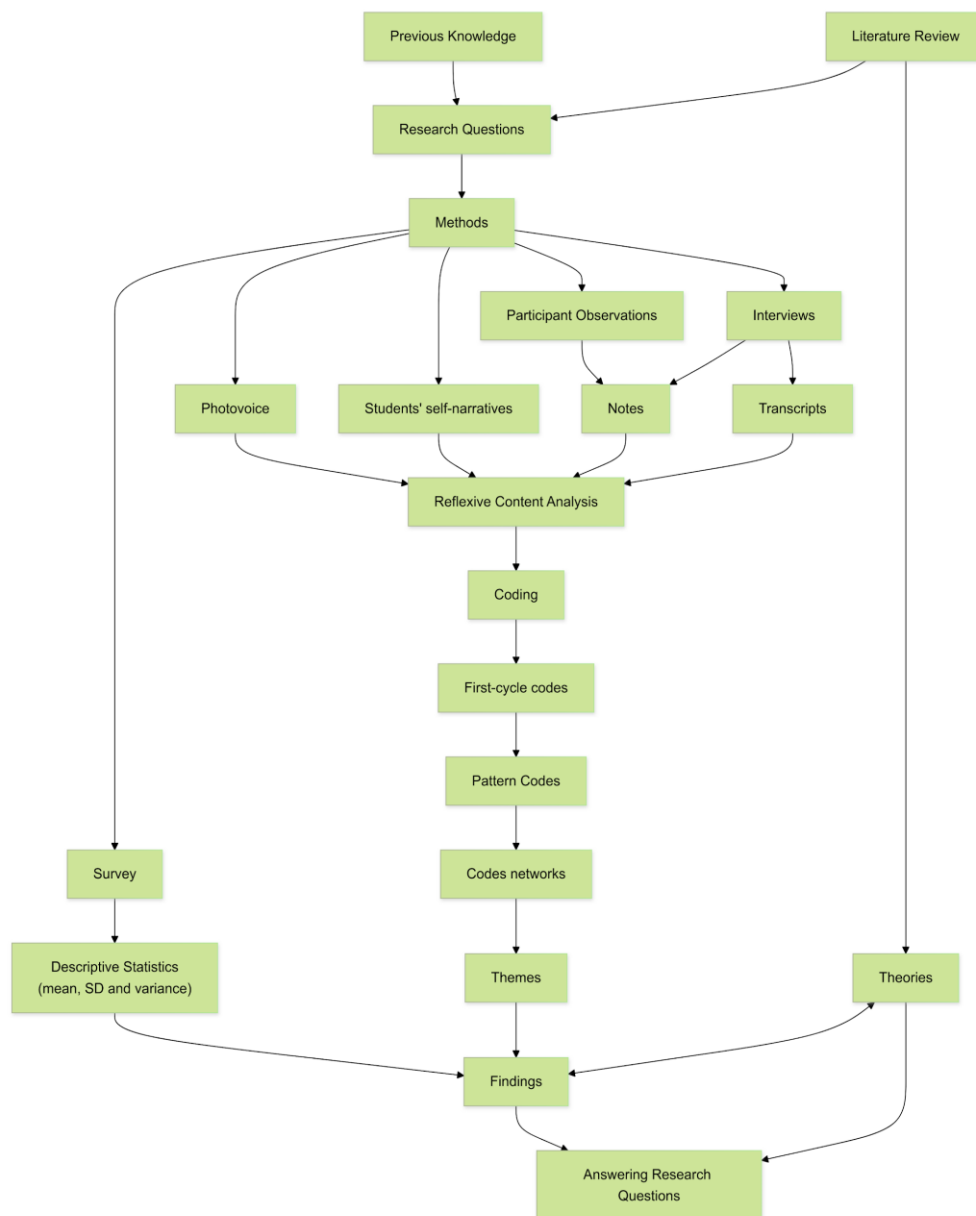


Figure 22. Data Analysis Plan.

3.6.2 Qualitative Data Analysis

During the fieldwork and qualitative data analysis phases, analytic memos were drafted to synthesise findings, as advocated by (Miles, Huberman and Saldaña, 2013). Qualitative data was analysed through reflexive thematic analysis (Braun and Clarke, 2022) - or reflexive TA -, which entails a six-phase process, beginning getting familiarised with the dataset, followed by a thorough and systematic coding process. This is succeeded by exploring, developing, reviewing and refining themes (Braun and Clarke, 2006). Inspired by the six steps proposed by Braun and Clarke (2022) and Miles, Huberman and Saldaña (2013), the qualitative data analysis process comprised the following steps:

- Taking notes during and post data collection method (observations, interviews and workshops)
- Analysing interview transcripts, photos, stories and notes taken during fieldwork
- Employing First Cycle Coding
- Identifying code patterns
- Establishing networks concepts, codes and patterns
- Associating existing theories with networks
- Identifying themes
- Formulating propositions to address research questions and findings
- Combining theory with findings to answer research questions

These steps were conducted in a fluid and dynamic manner, thus allowing each phase to influence the others. For example, immediately following a workshop or an interview, reflective note taking was used to connect the discussed topics with previous workshops or interview discussions. These notes and reflections subsequently informed the modification or prioritisation of items for subsequent methods. Upon each set of completion of data analysis, each school headteacher was sent a report (see [Annex IV](#) as an example).

Reflexivity entails a structured practice of critically examining our actions as researchers, the methods and reasons behind them, and the subsequent effects and influences on our research (Braun and Clarke, 2022). In reflexive TA, analysis is considered a meaning-maker process (Braun and Clarke, 2021) unlike in other approaches that search for “truth”. In this approach, subjectivity is a strength and not a source of bias (Nadar, 2014).

As noted by Campbell *et al.* (2013) in qualitative studies conducted by early-career researchers, it is common practice for a single coder to handle the majority of the data coding (O’Connor and Joffe, 2020). To achieve intercoder reliability (ICR) in such instances, an additional coder may be enlisted to code a sample of the data. Once an acceptable level of reliability is confirmed, the primary researcher typically continues with coding the remaining data independently. Intercoder reliability is often valued by researchers not as an indicator of “objectivity,” but as a tool for enhancing the analysis through reflexive dialogue between coders (Braun and Clarke, 2020). Similarly to what reflexive TA proposes, discussions between coders become essential to understand the reasons behind conflicting interpretations (O’Connor and Joffe, 2020). In this study, initial codes were first created with a small sample of the data by the researcher and then an additional coder was asked to recode, not to check or reach an agreement, but to offer nuanced insights (Braun and Clarke, 2022) before embarking on the coding process of all the dataset.

The process of coding involved employing diverse methods such as attribute coding, descriptive coding, and in vivo coding, all developed inductively based on empirical observations (Miles, Huberman and Saldaña, 2013). The following table provides a summary of a limited number of codes used for the reflexive TA of the interviews:

Code	Description
Challenges	Mentions of challenges by members of the educational team.
Community or Context	References to the school community or context.
Curriculum	References to national or school curricula.
Educational Practices or vision (non-sustainability related)	References about educational practices that are not related to sustainability.
Educational Team	References regarding the school's educational team.
Governance and culture	Mentions of the schools' governance, ethos or institutional culture.
Infrastructure	Mentions of the schools' infrastructure.
Motivation	Mentions of motivation by members of the educational team.
National or Regional Ed. Policies or Authorities	Mentions of national or regional educational policies and/or authorities and how they have influenced school practices.
Politics at School	References regarding how politics are dealt with as school practices.
Professional Experience	References regarding the professional experience of members of the educational teams.
Sustainability	References regarding sustainability, whether ideology, vision or practices.

Table 2. Summary of codebook. For full list see [Annex V](#).

Interviews were transcribed using Good Tape software and the thematic coding analysis was conducted on Nvivo 14. Student handwritten stories were first transcribed using Handwriting

Transcriber by Chat GPT 4.0 and then edited. The photovoice data which consisted of 98 photographs was analysed following reflexive thematic analysis (Braun and Clarke, 2022) techniques. For this analysis, the following steps were carried out based on (Kanstrup, 2002; Tsang, 2020):

- i) Researcher analysis: coding and grouping pictures.
- ii) Researcher analyses student interpretation of their pictures and their reactions. Are there alternative explanations to the phenomena observed in the first step?
- iii) Cross-comparison: compare findings from first two steps.
- iv) Theorisation

A combination of intra and cross-case analysis was conducted. This decision was made because workshops were chronologically carried out first in School Lozzo Atestino (ITA), then School Creciendo Juntos (ARG) and finally in School No.294 (URY). Therefore, students in School Creciendo Juntos (ARG) had the opportunity to analyse their own photographs and also the ones submitted by students in Italy; and similarly, students in School No.294 (URY) could analyse their own photographs but also the ones provided by students both in Italy and Argentina. Therefore, by using students' analysis of their own work but also of peers in other schools, the boundaries between intra and cross-case analysis are not as clear in this dataset compared to the other methods.

3.6.3 Quantitative Data Analysis

Standard descriptive statistics that include calculating mean, standard deviation and question variance were conducted (Yin, 2018). These were followed by t-tests to check for statistically significant answers within and between cases (see [Section 2.8.2 for further explanation](#)).

The survey has been administered to over 800 students in approximately 60 classrooms in Italy. In some educational projects, pre and post-tests have been conducted at the start and end of the school year. Results have shown there is no significant difference during a school semester in student attitudes, values or beliefs regarding their environmental and sustainability issues. Therefore, only one round of survey was administered and analysed for this study.

3.7 Methodological Limitations

This study presented three main methodological limitations:

i) Lack of replication across schools. Specifically, while four workshops were conducted in Italy, three workshops were held in Uruguay and Argentina. This discrepancy may introduce variability in the data, potentially affecting the comparability of results across these contexts (Yin, 2018). To compensate for this limitation, the core activities of the workshops were conducted in the three cases.

ii) The survey data collected for this research is limited in size and lacks representativeness, constraining the generalisability of the findings. The small sample size limits the use of more sophisticated statistical analyses, which could have provided deeper insights into the patterns observed (Bryman, 2006).

iii) Longer participant observation periods in each school could have enriched the contextual and internal understanding of the school community, functioning and ethos.

These limitations highlight the need for relative caution in interpreting the results and the subsequent discussion.

3.8 Ethical Considerations

This research followed three key ethical principles outlined by Denscombe (2012): no harm, voluntary participation, and scientific integrity. Transparency and honesty were prioritised in all interactions with the headteachers and teachers, ensuring clear communication about expectations, responsibilities, and timelines for everyone involved.

The process of inviting the schools to participate in the study was similar. First, the headteacher was contacted and a simplified version of the research proposal (see [Annex VI](#)) was shared. They were asked if they considered their schools appropriate and if they believed their teachers and students would be interested in participating. After initial approval by the headteacher, a meeting with teachers was held to invite them to participate. In this meeting, possible topics for the workshops and how they would like to be informed of results and findings were discussed.

Then, parents were sent the research proposal, through teachers. Inquiries pertaining to the study were actively encouraged. The teachers took the responsibility of communicating the research with the students. In order to avoid any misunderstandings, during the first workshop,

the research aims were discussed with students, and they were informed that participation in all of the activities was optional. All participants were informed of their option to withdraw from the research at any time, with no prejudice whatsoever and an assurance of data confidentiality. All data was anonymised, with confidentiality and anonymity meticulously upheld during data analysis and consequent writing. In instances where direct quotes were used, they were with anonymised identifiers (e.g., “Participant 07_ITA”). Each participant was required to provide signed consent to participate (see [Annex VII](#)). For participants under legal age, parental or guardian co-signatures were obligatory.

Conducting a risk assessment prior to conducting research is considered best practice, allowing for the anticipation of potential challenges and the formulation of pre-emptive solutions (Denscombe, 2012). Beyond the conventional challenges encountered during fieldwork, such as difficulty in participant engagement, interviewee reluctance, and scheduling complexities, proactive measures were taken to address any foreseeable issues.

3.9 Positionality

With regards to my positionality as a researcher, I will engage in a concise reflection. This practice has been referred to as 'reflexive sociology' by Bourdieu and Wacquant (1992).

I was born and raised in the capital city of Uruguay, Montevideo. I have been living and working in Italy for the past years, and I speak fluent, although not native-like, Italian. This combination, I assume, would be perceived differently in each of the school communities. Both in the cases of schools in Argentina and Uruguay, the fact that this study is conducted within a PhD course in a European university could have certain prestige attached to it. Moreover, in the case of the Uruguayan school, I am an “educated” citizen from the capital city, visiting a semi-rural school in a lower-middle socioeconomic context. Therefore, there might be further layers of perceived disparity in terms of power relations with students and members of the educational team.

In the case of the Italian school, I am perceived as a South American migrant with a “funny” accent who is pursuing a PhD degree in a renowned local university. This might have created a certain degree of cognitive dissonance in some students. Furthermore, I was a primary, secondary and adult education teacher for almost 10 years. My background influences not only how I understand education and schools, but also my expectations and approach during workshops, data collection and interpretation.

In sum, I reflect upon the intersectional and geopolitical position from where I observe the world and speak (Sultana, 2015), i.e. my subjectivity and positionality in the privileges I hold such as

being middle class, man, formally educated, and migrant by choice. I often cross outsider-insider boundaries at both the local and global levels, yet my values and politics have mostly been shaped by two factors: first, being from a small South American country that often takes a complacent and non-confrontational stance towards its colonial past; and second, by my lived experiences of belonging, non-belonging and in-betweenness as a migrant during the past 10 years.

3.10 Conclusion

This chapter described the main characteristics the multiple-case study methodology selected for this research. The mixed-methods approach combined semi-structured interviews, survey, experiential learning workshops, and participant observation, which provided a comprehensive framework to research three distinct educational contexts. The rationale behind this methodological approach was to capture complex and multifaceted concepts in each school. By employing both qualitative and quantitative methods, the study was able to triangulate data, enhancing the robustness and validity of its findings.

The multiple-case study design enabled a deep contextual analysis of each school, acknowledging the unique socio-historical and cultural contexts that shape educational practices. This design allowed for a nuanced exploration of how sustainability is interpreted and integrated into the educational projects of these three schools. The cultural historical and constructivist approach adopted in this study highlighted the importance of subjective interpretations, making it possible to understand how educators and students construct and interpret their own realities.

Limitations, such as the variability in workshop frequency across the cases and the small survey sample, should be considered when interpreting the findings. Nevertheless, this study offers valuable insights into how diverse educational settings can scaffold students' sustainability competences and contribute to the global discourse on transformative education. The methodological approach not only addressed the research questions but also provided a participatory and reflexive framework that aligned with the critical, transformative aims of the research.

4. Findings

4.1 Introduction

This chapter provides a synthesis of the findings of this study and addresses the research questions and sub-questions. The chapter starts by providing a concise summary of the key findings. That is followed by a detailed data analysis of the various methods: survey, then the students' self-narratives, followed by the photovoice activity, and concluding with insights drawn from interviews and participant observations. Then, the research questions and sub-questions are addressed in light of the findings.

4.2 Summary of Findings

In this section, first an overall of the data collected is provided. Then, the main findings that arose from each of the methods are briefly presented.

4.2.1 Summary of Data Analysed

Table 3 summarises the number of students per school, the data collected and analysed:

	School Creciendo Juntos (ARG)	School Lozzo Atestino (ITA)	School No. 294 (URY)	Total
Students	95	105	34	234
Survey Answers	42	45	20	107
Students' self- narratives	88	94	36	218
Photovoice	11	70	17	98
Interviews & observations	6	4	3	13

Table 3. Summary of participants and data collected.

4.2.2 Survey

There were 107 respondents to the 53-item survey, and the main findings were:

- i) Students have shown significant signs of eco-anxiety.
- ii) Students experience contradictions that are inherent to sustainability issues.
- iii) Students enjoy being outdoors and the calm of nature.

iv) The three questions in which students from the three schools agreed the least were: Question 22 - “I separate food waste from other waste.”; 39 - “In order to feed people, nature should be cleared to grow food.”; and 47 - “There are too many, or almost too many, people on Earth”.

v) The three questions in which students from the three schools agreed the most were: Question 30 - “When faced with problems, I try to look at them from different points of view.”, 37 - “It is so important to build new roads that it is OK to cut down trees” and 50 - “I think women and men all over the world should have the same opportunities for education and work”.

vi) There was little to no difference in answers when analysed by gender. Only one question presented a statistically significant difference between male and female students regardless of the school, and four questions in School Lozzo Atestino (ITA) had a statistical significance albeit a small difference in answer mean.

4.2.3 Students’ self-narratives Analysis

Students were asked how they viewed their future and their community in 20 years’ time. The analysis of 218 students’ self-narratives has shown that students from the three schools have similar views regarding technological and futuristic visions, eco-anxiety and solastalgia, a strong link between career aspirations and migration and the fact that students view themselves as consumers rather than political actors. On the other hand, their views differ in terms of the degree of pessimism regarding the future and the specificity of their career ambitions.

4.2.4 Photovoice

The analysis of the 98 photographs that students submitted to answer the question “What is sustainability for me” has shown that:

- One in four pictures portrayed tamed nature such as flowers, plants or trees that have been intervened by human beings.
- Recycling, upcycling and reutilising were common themes across all cases.
- The role of community, sharing and commons was present in schools Creciendo Juntos (ARG) and School No.294 (URY).
- Pictures that portrayed growing food were relatively common in the case of School Lozzo Atestino (ITA) and School No.294 (URY).

- The role of identity was prevalent both in the case of School Creciendo Juntos (ARG) and School Lozzo Atestino (ITA). For example, students took pictures of their national flag, or instances in which they shared time with their families.
- Students in School Creciendo Juntos (ARG) categorised several photos taken by Italian students of solar panels under the category “public policy” thereby emphasising the importance politics and policies have in order to foster large-scale societal behavioural change.

4.2.5 Interviews and Participant Observations

interviews with 13 members of the educational teams were conducted and participant observations took place from November 2022 until April 2023. These have shown that each school presents distinct characteristics and challenges, such as:

School Creciendo Juntos (ARG)

- **Community-focused governance and political activism:** The school was founded by the local community to address educational needs, emphasising social governance, cooperativism, and political activism as core principles.
- **Cooperative initiatives:** The school promotes sustainability through community-integrated efforts such as student-led cooperatives, though it faces challenges in resource availability and internal political tensions.

School Lozzo Atestino (ITA):

- **STEM education and innovation:** The school is recognised as an innovation hub with a strong emphasis on STEM education, driven by leadership that encourages continuous improvement.
- **Teacher turnover and community engagement:** The school struggles with high teacher turnover, contrasting levels of modernisation and adequacy in infrastructure, and a lack of purposeful engagement with the surrounding community.

School No. 294 (URY):

- **Focus on learning from the surrounding environment:** the school is dedicated to connecting students with their natural environment through the self-sustained building and projects like vegetable gardening.
- **Overburdened educational team and infrastructure challenges:** The school operates with a small, overburdened staff due to the multi-grade system and faces ongoing issues with maintaining its solar power infrastructure.

4.3 Survey Analysis

The survey had a total of 107 respondents across all three schools. Table 4 summarises the profile of the respondents:

Case	Female	Male	Other gender	No answer	Total per case	Response rate
School Creciendo Juntos (ARG)	18	21	1	2	42	44%
School Lozzo Atestino (ITA)	20	24	0	1	45	43%
School No.294 (URY)	7	12	0	1	20	59%
Total	45	57	1	4	107	46%

Table 4. Survey answers per case.

A total of 42 respondents participated from School Creciendo Juntos (ARG), comprising 18 female students, 21 male students, 1 student who identified with another gender, and 2 who preferred not to disclose their gender. The survey response rate for this school was 44% out of the 95 students included in the study.

In School Lozzo Atestino (ITA), there were 45 respondents: 20 identified as female, 24 as male, and 1 chose not to specify. The response rate for this school was 43% out of 105 participants. Lastly, 20 students from School No. 294 (URY) completed the survey, with 7 identifying as female, 12 as male, and 1 preferring not to specify, resulting in a response rate of 59%.

Questions 18-53 in the survey were a Likert scale 1-5 where 1 represented “Never” (for questions 18-31) or “I strongly disagree” (questions 32-53) and 5 “always” (questions 18-31) or “I

strongly agree” (questions 32-53). For graphs showing responses distribution for questions 18-53 see [Annex VIII](#).

Table 5 summarises the mean, standard deviation and variance per question and case⁶. The three questions with highest variance between the cases are highlighted in green: Questions 22, 39 and 47. Conversely, the three questions with the least variance are highlighted in yellow: Questions 30, 37 and 50. Further discussion on question variance can be found in [subsection 4.2.6.2](#).

Question Number	ARG Mean	ARG Std Dev	ITA Mean	ITA Std Dev	URY Mean	URY Std Dev	Question Variance
18	3.64	1.19	3.29	1.08	3.25	1.29	0.05
19	3.83	1.25	4.24	1.05	4.1	1.02	0.04
20	3.43	1.42	3.64	1.23	3.15	1.42	0.06
21	2.83	1.15	3.67	1.19	3.45	1.28	0.19
22	2.6	1.53	3.84	1.19	2.55	1.76	0.54
23	2.86	1.18	2.09	1.04	2.5	1.28	0.15
24	2.79	1.51	3.24	1.32	2.35	1.27	0.20
25	1.79	1.02	1.56	1.06	1.8	0.83	0.02
26	3.6	1.21	3.16	1.21	3.7	1.13	0.08
27	3.52	1.21	3.36	1.43	3.85	1.27	0.06
28	2.64	1.27	2.84	1.22	3.2	1.2	0.08
29	4.31	0.87	3.82	1.21	4.25	1.07	0.07
30	3.45	1.35	3.4	1.18	3.45	1.39	0.00
31	3.29	1.07	3.22	1.06	3.95	1.0	0.16
32	3.05	1.21	2.98	1.12	3.3	1.22	0.03
33	3.69	1.16	3.36	1.07	3.4	1.39	0.03
34	3.57	1.17	3.2	1.27	3.55	1.36	0.04
35	3.2	1.5	3.38	1.42	3.25	1.74	0.02
36	2.26	1.34	2.4	1.25	2.1	1.12	0.02
37	1.81	0.92	1.87	1.01	1.95	1.05	0.00
38	2.86	1.2	2.87	1.27	2.65	1.35	0.02
39	2.67	1.28	1.64	0.83	2.95	1.19	0.47
40	3.48	1.21	3.11	1.23	2.8	1.44	0.11

⁶ For the sake of simplicity in survey data analysis schools are referred to by their corresponding Alpha-3 ISO code, which is the international standard for country codes: “School Creciendo Juntos” is referred to as ARG, “School Lozzo Atestino” as ITA, and “School No. 294” as URY. This decision in no way implies that these cases represent the countries where they are located.

41	4.14	1.24	3.84	1.3	4.6	0.82	0.14
42	1.88	0.94	1.76	0.93	1.45	0.76	0.05
43	3.83	1.29	3.76	0.88	3.5	1.61	0.03
44	2.6	1.42	2.33	1.04	2.35	1.42	0.02
45	3.19	1.06	3.64	1.05	3.7	1.22	0.08
46	4.4	0.8	4.18	1.09	4.35	1.09	0.02
47	4.17	0.96	2.96	1.31	3.7	1.17	0.37
48	4.48	0.74	4.36	0.86	4.15	1.23	0.03
49	4.45	0.8	4.38	0.94	4.05	1.19	0.05
50	4.81	0.4	4.64	0.86	4.8	0.52	0.01
51	3.5	1.31	3.49	0.97	2.9	1.21	0.12
52	3.24	1.38	2.98	0.94	3.45	1.39	0.06
53	4.38	0.79	4.18	0.86	4.3	0.98	0.02

Table 5. Overview of means, standard deviation and question variance.

Based on this analysis, the following interpretations can be drawn:

- i) **Students have shown significant signs of eco-anxiety.** Question 53 was “If things continue like this, we will soon experience a major ecological catastrophe”, and students from the three schools tended to strongly agree with this statement, the mean answer being 4.38, 4.18, and 4.30 for Argentina, Italy and Uruguay respectively.

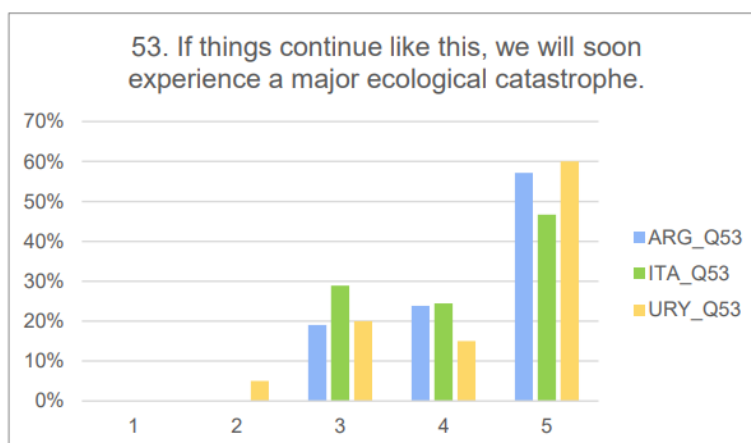


Figure 23. Survey Question 53 data distribution.

- ii) **Students experience contradictions that are inherent to sustainability** such as how they view other living beings and personal dietary choices. For instance:

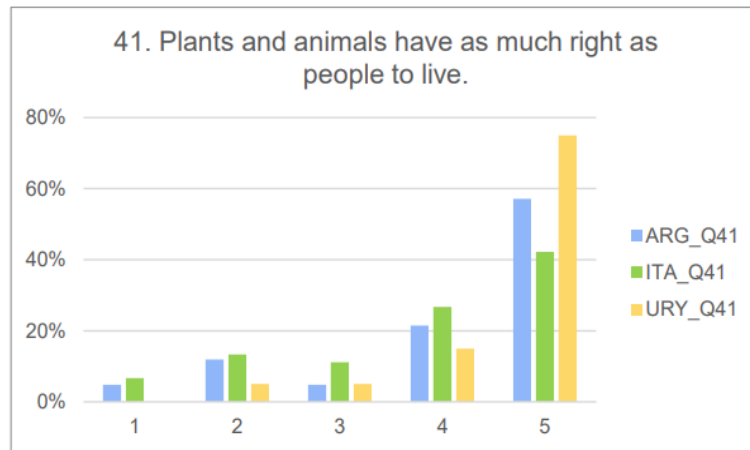


Figure 24. Survey Question 41 data distribution.



Figure 25. Survey Question 25 data distribution.

In general terms, students seem to acknowledge that other beings have as much right to live as human beings (Figure 24) but simultaneously the vast majority of students do not try to avoid eating meat for respect of animal life (Figure 25).

iii) **Students enjoy being outdoors in nature** and they especially appreciate the calm it offers. Figure 26 shows the answer distribution and the mean answer for the three schools was high, 4.3 (ARG), 3.82 (ITA), and 4.25 (URY).

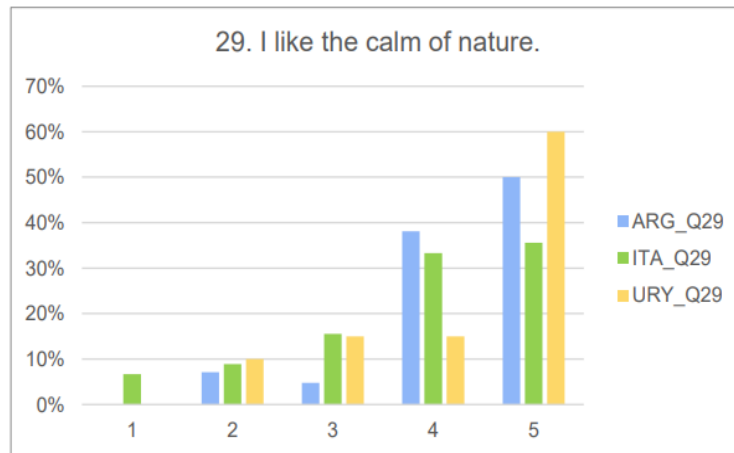


Figure 26. Survey Question 29 data distribution.

4.3.1 Survey Cross-case Analysis: Question Variance

Given the comparative nature of this study, it is important to explore whether, and to what extent, students from different contexts share similar perspectives on sustainability. To examine this, the variance between student responses was calculated. Variance, a statistical measure that quantifies how much a set of values spreads out, is used here to determine the extent to which the average responses for each question differ across the three cases.

The three questions with the highest variance, i.e. the questions in which students from the three cases agreed the least were: Question 22: “I separate food from other waste” - variance (0.54); Question 39: “In order to feed people, nature should be cleared to grow food” (Variance: 0.47); and, Question 47: “There are too many (or almost too many) people on Earth” (Variance: 0.37)

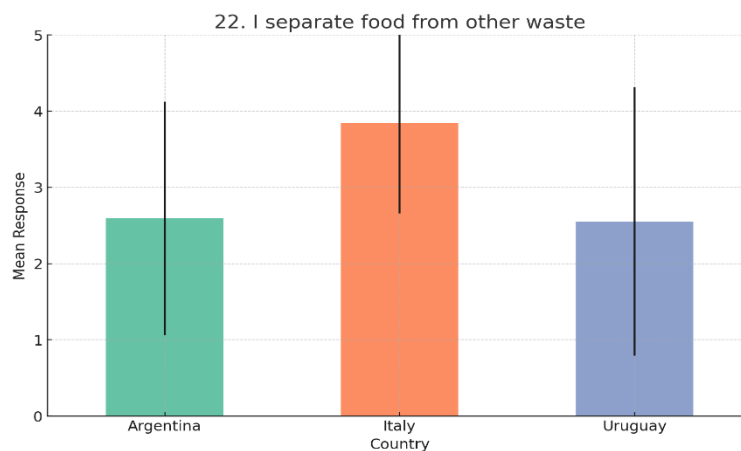


Figure 27. Survey Question 22 variance.

Figure 27 shows the mean and standard deviation for Question 22 for each case. This question had the highest variance (0.54) indicating that the mean responses from different countries are diverse. The means were 2.6 (ARG), 3.84 (ITA), and 2.55 (URY). As it can be observed, students from Italy tend to agree with the statement, whereas students from Argentina and Uruguay do not, to a similar degree. The reason for this difference is explored below when answering [research sub-question 2](#).

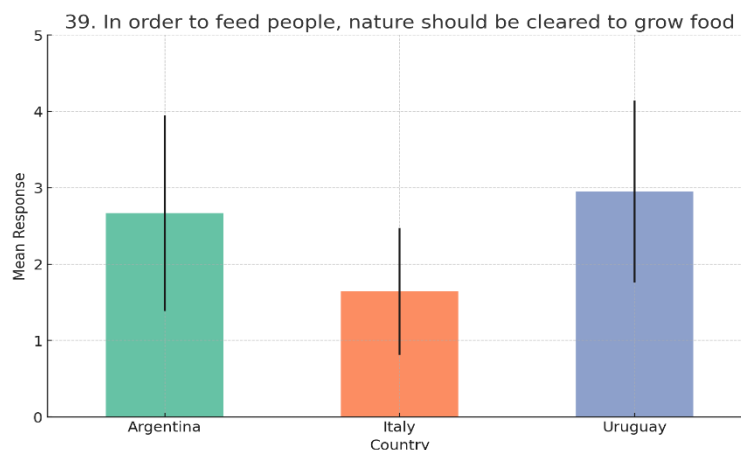


Figure 28. Survey Question 39 variance.

The variance for Question 39 is 0.47 and for Question 47 is 0.37, suggesting that there is considerable variability in the mean responses between the three cases. The means were: 2.67 (ARG); 1.64 (ITA); 2.95 (URY).

Figure 28 shows the mean and standard deviation for Question 39 of the survey, which asked “In order to feed people, nature should be cleared to grow food.” The variance for this question is 0.47, indicating significant differences among students regarding the relationship between human activity and their surrounding natural environment. Italian students strongly disagreed with the statement, whereas students in Argentina and Uruguay adopted a more neutral position.

This divergence can be understood in light of the contexts surrounding each school. School Luzzo Atestino (ITA) is located in an agriculturally intensive region, renowned for crops such as grapes and olives, including prosecco production. There have been prominent local campaigns advocating for environmental preservation that may have shaped the Italian students' views. Conversely, the Uruguayan school is situated in a semi-rural area characterised by extensive farming, while the Argentinian school is located on the outskirts of a major metropolitan area. In both the Argentinian and Uruguayan contexts, students and their communities have less direct exposure to intensive agricultural practices, which may explain their more neutral responses.

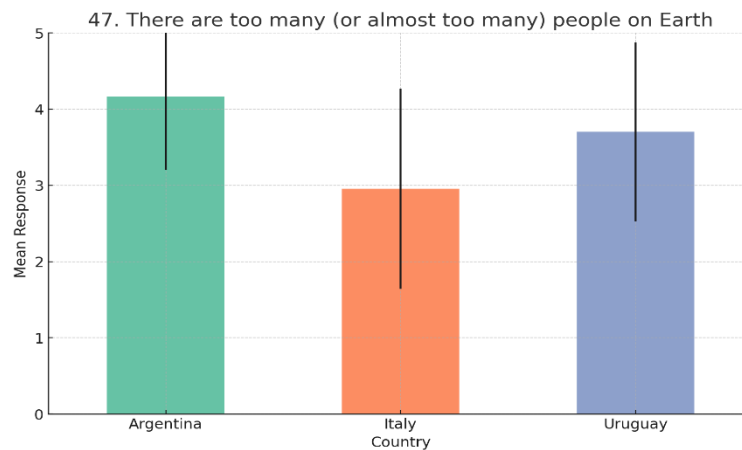


Figure 29. Survey Question 47 variance.

Figure 29 shows the mean and standard deviation for Question 47. This item stated, “There are too many (or almost too many) people on Earth,” and answers revealed significant differences in student perspectives, as indicated by a variance of 0.37. The means were: 4.17 (ARG); 2.96 (ITA); 3.7 (URY). The differences in mean highlight considerable variation in how students from the three schools perceive population growth and its relationship to sustainability.

Students from Argentina and Uruguay tend to agree with the statement, which is intriguing given the significantly lower population densities in these countries compared to Italy. According to official data, Argentina has a population density of approximately 16 people per square kilometre, Uruguay about 20 people per square kilometre, while Italy 206 people per square kilometre (World Bank Open Data, 2024).

However, the location of the schools might influence students' perceptions more than national statistics. School “Creciendo Juntos” (ARG) is situated in Moreno, a densely populated urban area where approximately 800.000 people live. In contrast, the schools in Italy and Uruguay are located in semi-rural areas, approximately 30 kilometres from an urban centre. Despite this similarity, Italian and Uruguayan students responded significantly differently to the issue of population growth. Italian students tended to adopt a neutral stance, while Uruguayan students tend to think that there are too many people on Earth. This suggests that students at the Uruguayan school may have internalised a narrative about population growth that does not necessarily reflect their immediate surrounding environment. This invites to reflect upon how global narratives can permeate and influence the mindsets of communities and individuals, even when their lived experiences do not align with those narratives, and how schools deal with such metanarratives.

This analysis has shown, in short, that students have differing viewpoints regarding waste management, clearing nature to grow food and population growth.

The three questions with the least variance are the ones students agree the most: Question 30. “When facing problems. I try to examine them from different points of view” (Variance: 0.0009); Question 37 “It is so important to build new roads that it is acceptable to cut down trees” (Variance: 0.005); and Question 50. “I think men and women all over the world should have the same opportunities for education and work” (Variance: 0.009).

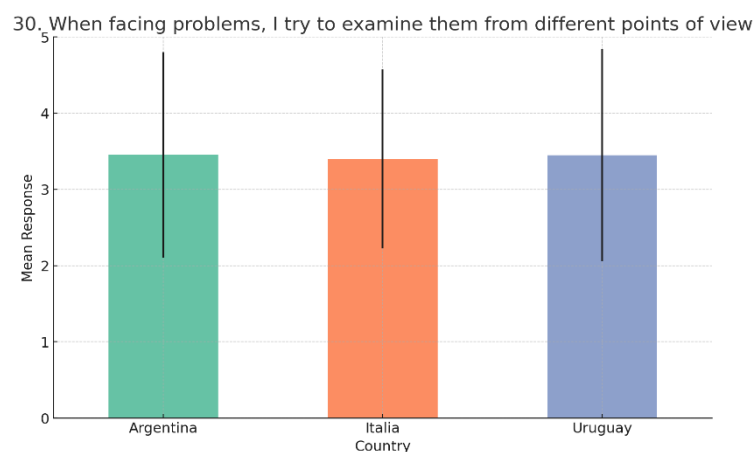


Figure 30. Survey Question 30 variance.

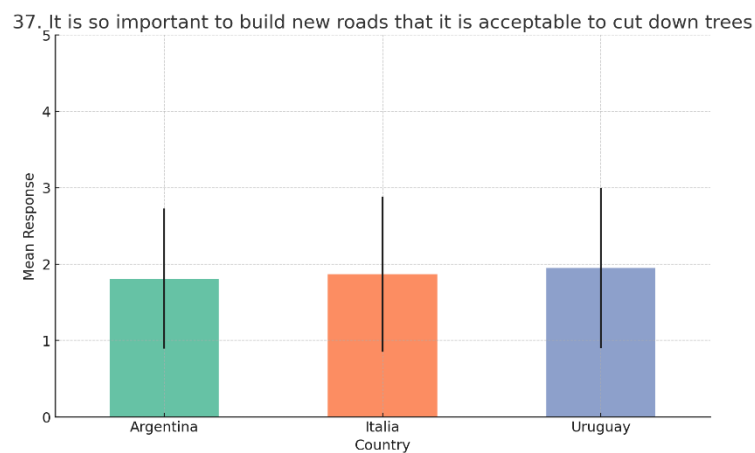


Figure 31. Survey Question 37 variance.

The three questions with the least variance in student responses reveal a strong consensus across different contexts on key ethical and cognitive principles. The minimal variance occurred in Question 30, as Figure 30 shows and the means were 3.45 (ARG), 3.40 (ITA), and 3.45 (URY), which suggests that students across the three schools have a neutral stance towards valuing critical thinking and the importance of considering multiple perspectives in problem-solving.

Similarly, the low variance in mean responses to Question 37 (Figure 31) were 1.81 (ARG), 1.87 (ITA), and 1.95 (URY), indicate a shared disagreement towards compromising environmental integrity, such as cutting down trees, for infrastructure development, reflecting a common environmental consciousness which offers hope.

Lastly, the means in answers to Question 50 (Figure 32) were 4.81 (ARG), 4.64 (ITA), and 4.80 (URY), which underscores a widespread commitment to gender equality among students.

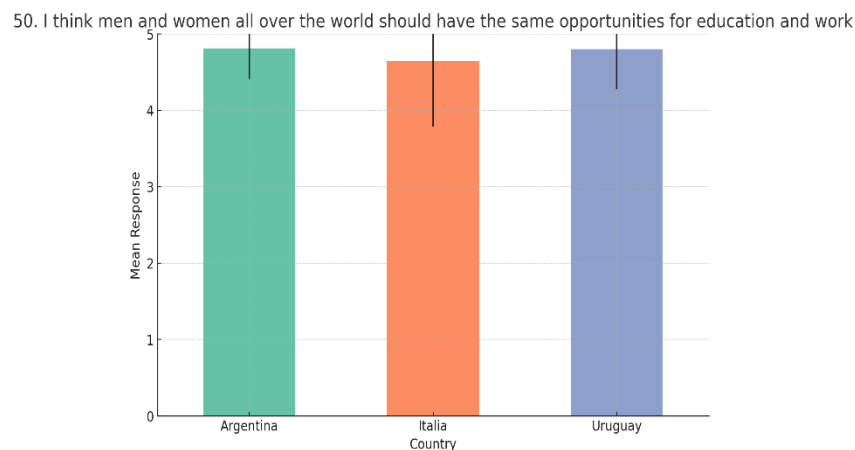


Figure 32. Survey Question 50 variance.

These findings suggest that, despite their differing cultural and geographical backgrounds, students across these contexts share a neutral stance towards the importance of considering other viewpoints for problem solving. Moreover, they generally agree with preserving the natural environment in the face of destruction for infrastructure “development” and consider that people deserve fair opportunities, regardless of their gender.

The next step was to investigate if there were differences in responses based on gender. In order to do so, a two-tailed t-test was conducted. Results have shown a small yet statistically significant difference only in Question 49 “I think that we who live today should ensure that people in the future can enjoy the same quality of life as we do”. Similarly, intra-case t-tests were conducted and there were statistically significant differences only in School Lozzo Atestino (ITA) for 4 questions: Q19, 26, 39 and 49. For complete analysis [see Annex IX.](#)

4.4 Students’ self-narratives Analysis

During one of the workshops, students were invited to respond to the following prompt either writing, drawing, or any other forms of expression: “What will your life be like in 2042? What will your community look like? What changes do you anticipate compared to our lives today? You can consider social, political, and economic organisations, as well as personal aspects (e.g.,

what I eat, how I move, relationships with others/nature, study, work, etc.). You may draw or write your vision of the future.”

This section presents the findings of a reflexive thematic analysis (Braun and Clarke, 2022) conducted on the 218 students’ self-narratives. The analysis identified the following four themes in the three cases: technological and futuristic visions, eco-anxiety and solastalgia, career aspirations and migration, and perspectives on global futures. These themes are expanded and discussed on a case-by-case basis, followed by a cross-case analysis that highlights the similarities and differences in students’ responses across the three schools.

4.4.1 Students’ self-narratives: intra-case Analysis

School Creciendo Juntos (Argentina): Students’ self-narratives

Technological and Futuristic Visions

Students frequently envision a future dominated by advanced technology. They imagine a world where robots and digital tools perform tasks traditionally done by humans. This fascination with technology is reflected in their writings and drawings, for instance:

“By 2043, I think the world will be more technological, with more buildings. Machines will perform human work, as they will be more efficient.” ARG_NA_54

Eco-anxiety and Solastalgia

Deep concerns about the degrading natural environment and pollution are recurrent themes. Students express worries about environmental degradation and hope for better conservation efforts of nature in the future. There are repetitive mentions of the deterioration of the environment and the impact of pollution on daily life, for example:

“I see myself having tereré⁷ with my friends while the environment is worse every day. We would have to stay inside because we will no longer be able to enjoy being outside” ARG_NA_15.

*“I imagine my neighbourhood will be polluted and will have no trees.”
ARG_NA_46.*

⁷ Tereré is a cold infusion, similar to *mate*. Originally from the Guaraní culture, both infusions are generally shared and are very popular in Argentina, Bolivia, southern Brazil, Chile, Paraguay and Uruguay.

In Figure 33 below, the student decided to show that outside houses there is environmental degradation and pollution.

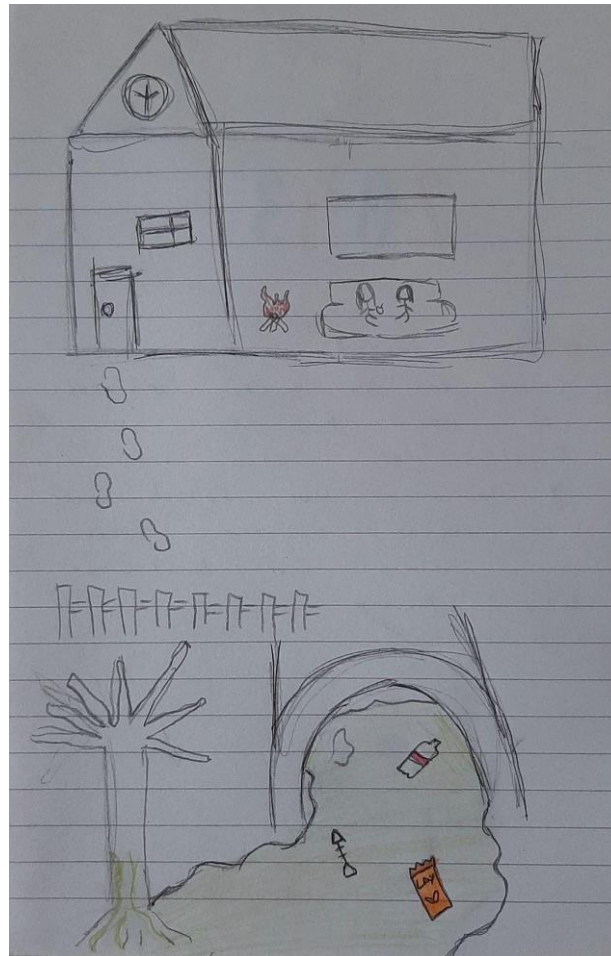


Figure 33. Student self-narrative ARG_NA_16.

Career Aspirations and Migration

Students articulate various career aspirations, reflecting their dreams and ambitions. These include becoming professional athletes, filmmakers, and veterinarians. Many students express a desire to live abroad. They envision a future where they can explore new cultures and pursue career opportunities, which is often linked to migrating to other Spanish speaking countries as it can be noted in the following excerpts:

“In 2043, I’m almost certain I will make my dream of being a cinematography director come true ... I’d like to move to Spain.”

ARG_NA_7



Figure 34. Student self-narrative ARG_NA_13.

Perspective on Global Futures: despair and pessimism

There seems to be a sense of despair and pessimism among some students regarding their future and the state of the world. Many students articulated anxieties related to the country's economic instability, frequently referencing high inflation rates and the rising cost of living:

“If Argentina keeps having this inflation rate, I’d move to Mexico. I’m afraid of the future.” ARG_NA_17.



Figure 35. Student self-narrative ARG_NA_80.

In Figure 35, the student drew a tombstone with their name dated 07/04/2038 and a graph for the price of the dollar. The fact that this student decided to draw not only their own tombstone, but included a specific date, offers a sombre example of the degree of hopelessness some students experience. Due to the economic volatility Argentina has been going through, the price of the dollar has taken a significant importance in everyday news and discussions. With a soaring poverty rate reaching over 53% of the population (INDEC, 2024), it is not surprising that teenagers who live in a lower-middle socioeconomic context are afraid of the economic outlook.

Figure 36 below shows an interaction between father and son and it says “Sorry Dad, there was no food left at the supermarket”, -“Not again!”.

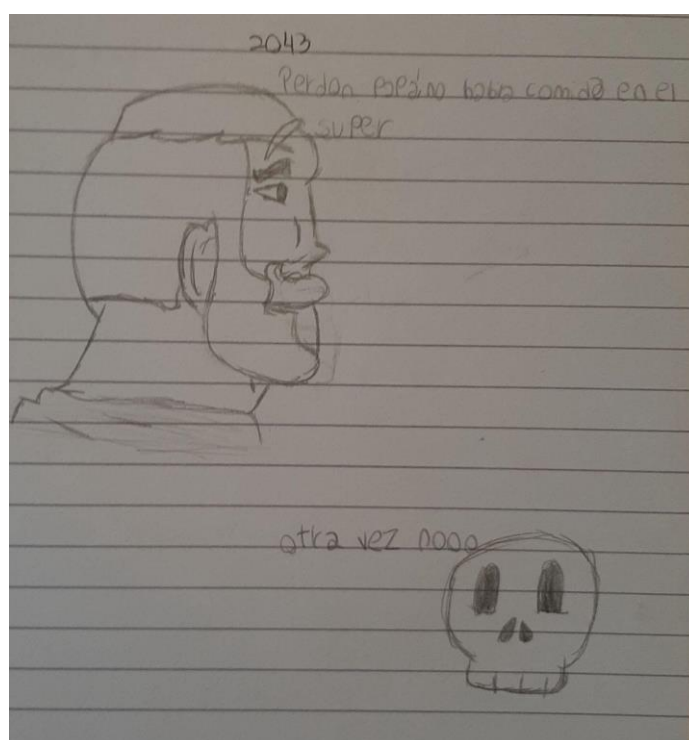


Figure 36. Student self-narrative ARG_NA_47.

In sum, the dominant themes of students' self-narratives about their futures in School Creciendo Juntos (ARG) include a positive view on technological advancements, significant signs of eco-anxiety and solastalgia, career aspirations linked to migration to other Spanish speaking countries, and a deep pessimism about their futures linked to the economic crisis the country is going through.

School Lozzo Atestino (Italy): Students' self-narratives

Technological and Futuristic Visions

Students frequently envision a future profoundly influenced by advanced technology and automation. Their narratives and illustrations depict a world where digital integration and

artificial intelligence are omnipresent. Student often depicted a future with electric cars, digital studies, and robots. These descriptions highlight the anticipation of a future where technology pervades every aspect of life as it can be observed in the following excerpt:

“In 2082, there will be electric and flying cars. People will work from home, with jobs primarily in business and e-commerce” ITA_NA_22.

Similarly, Figure 37 shows a futuristic drawing that presumably takes place in outer space:

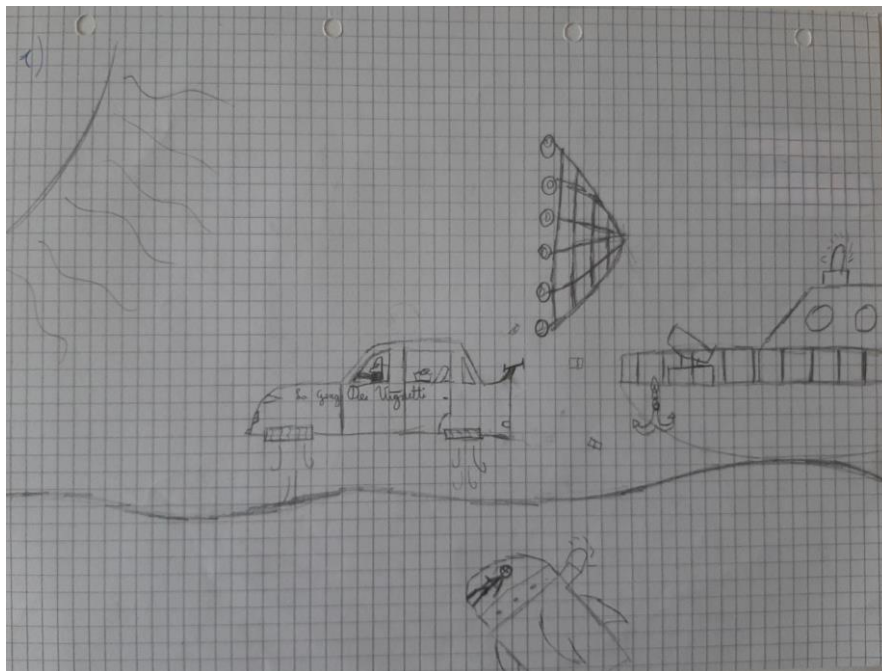


Figure 37. Student self-narrative ITA_NA_48.

Eco-anxiety and Solastalgia

Students have shown their concerns about the environmental degradation and eco-anxiety. Some students express a desire for increased ecological awareness. They emphasise the importance of reducing pollution and preserving natural resources, which can be observed in the following text excerpts:

“In twenty years, I believe the world will be in crisis due to pollution. The population will increase to such an extent that there will no longer be sufficient resources to sustain life, and it will become difficult to breathe because of deforestation” ITA_NA_65.

“Nature will no longer exist; there will only be plastic trees producing oxygen with batteries” ITA_NA_22.

Illustrations frequently included both polluted landscapes with pristine natural environments, underscoring a dual view of possible outcomes, such as in Figure 38 which portrays on left side a polluted city and on the right-side the “natural part”:

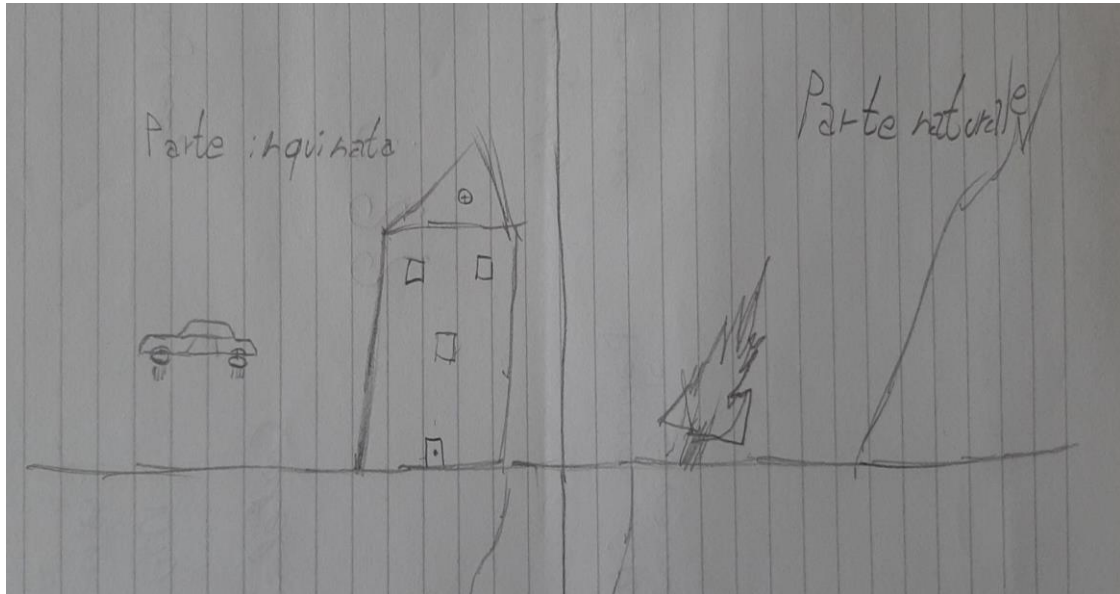


Figure 38. Student self-narrative ITA_NA_51.

Career Aspirations and Migration

Students expressed diverse and nuanced career aspirations, which reflect their ambitions and dreams. From aspiring palaeontologists to future lawyers and criminologists envisioning successful careers in major cities, their goals are varied and ambitious. Several students express a desire to explore the world and live in different countries. Some students envision themselves living abroad, often in the United States, pursuing careers and lifestyles that offer professional growth. For instance:

“In 20 to 30 years, I envision myself having a successful career as a lawyer or criminologist. I see myself as wealthy and living in a penthouse in downtown New York or Los Angeles” ITA_NA_13.

Perspectives on Global Futures

Students often depict a dual view of the future, oscillating between optimism and pessimism. They foresee both utopian and dystopian scenarios, and reflect upon current global challenges and uncertainties. These dual perspectives are vividly captured in stories and drawings that contrast positive and negative future outcomes. For instance:

“In my opinion, in the future, there will be many people who respect nature while others will remain indifferent to it” ITA_NA_49.

Figure 39 also portrays two possible, or even simultaneous, futures. On the left side is the “polluted part” where smoke and tall buildings can be observed. On the right side it reads “the natural part” where mountains, rivers and trees appear.

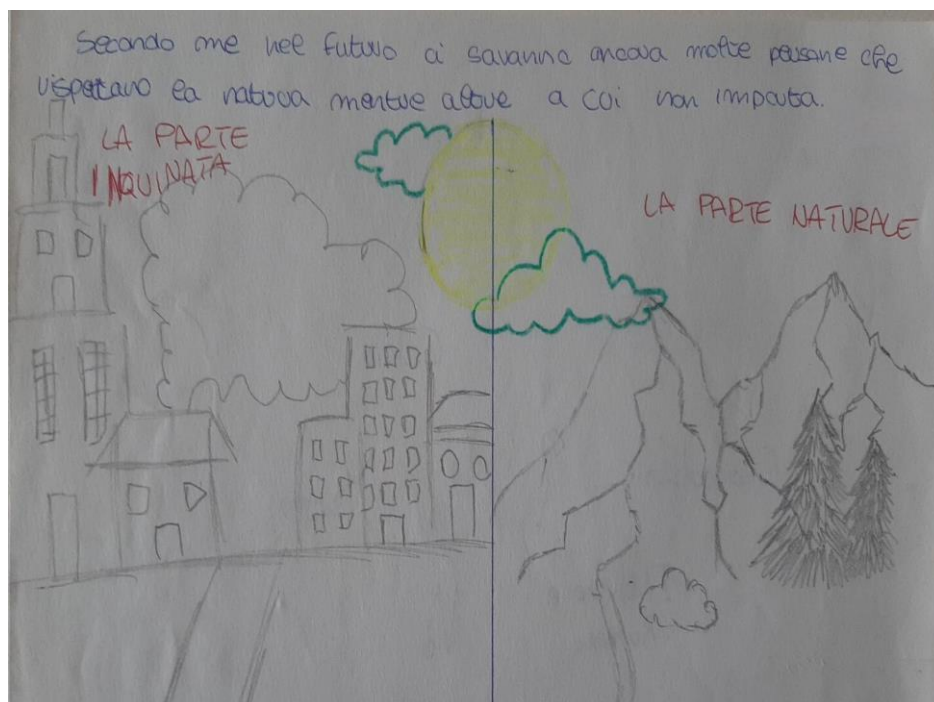
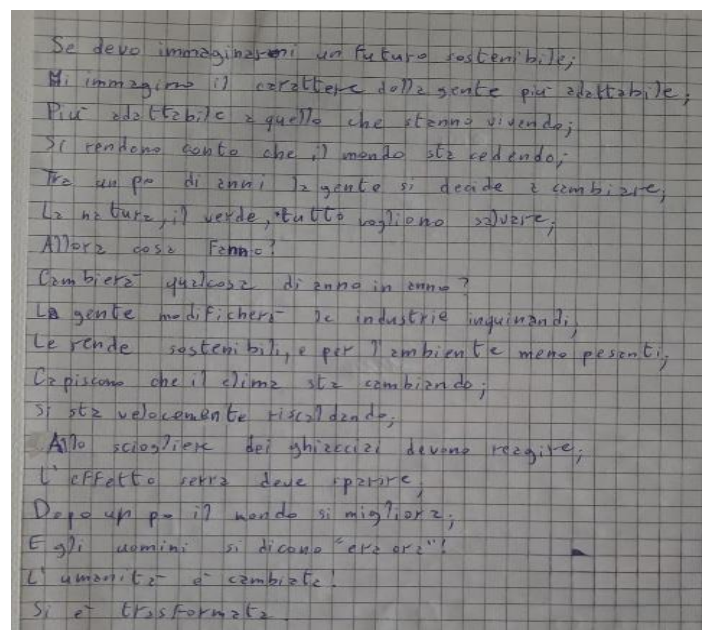


Figure 39. Student self-narrative ITA_NA_49.

The following poem was written by a 13-year-old female student synthesises some of the nuances of a positive outlook of her future:

*“If I have to imagine a sustainable future,
I imagine that people’s character is more adaptable,
More adaptable to what they are going through,
People realise that the world is caving,
After a few years people decide to change,
Nature, green spaces, they want to save all,
So what do they do?”*

Will something change year after year?
People will change polluting factories,
And make them sustainable, less of a burden for the environment,
They understand that the climate is changing,
It is quickly getting warmer,
They must react to glaciers melting,
The greenhouse effect must go away,
After a while, the world will get better,
And men and women will say «It was about time»,
Humankind has changed!
It has transformed itself.”
Student self-narrative ITA_NA_54.



Se devo immaginare un futuro sostenibile;
 Mi immagino il carattere delle gente più adattabile;
 Più adattabile è quella che stanno vivendo;
 Si rendono conto che il mondo sta cambiando;
 Tra un po' di anni la gente si decide a cambiare;
 La natura, il verde, tutto vogliono salvare;
 Allora cosa fanno?
 Cambieranno qualcosa di anno in anno?
 La gente modificherà le industrie inquinanti;
 Le rende sostenibili, e per l'ambiente meno pesanti;
 Capiscono che il clima sta cambiando;
 Si sta velocemente riscaldando;
 Allo scioglimento dei ghiacciai devono reagire;
 L'effetto serra deve sparire;
 Dopo un po' il mondo si migliora;
 E gli uomini si dicono "ero ero";
 L'umanità si è cambiata;
 Si è trasformata.

Figure 40. Student self-narrative ITA_NA_54.

In sum, the dominant themes across the students' self-narratives about their futures in School Lozzo Atestino (ITA) depict a positive outlook towards modern technologies, significant signs of

eco-anxiety and solastalgia, nuanced and rich career aspirations, often linked to migrating, and a polarising duality in the global outlook.

School No.294 (URY): Students' self-narratives

Technological and Futuristic Visions

Students frequently envision a future dominated by advanced technology and digital integration with a sense of optimism. They imagine a world with floating cars, robots, and sophisticated machinery as part of everyday life. For example, one student predicts living in a world “full of floating cars and advanced machines”. The drawings of outer space, planets, and futuristic cityscapes reflect this fascination with technology and space exploration indicating their anticipation of a high-tech world and its impact on society, for instance:

“I believe that when I turn 33, I will live in a world full of floating cars and highly advanced machines” URY_NA_11.

Eco-anxiety and Solastalgia

Concerns about biodiversity loss, ecological demise and eco-anxiety are prominent among students. They express worries about pollution, littering and preserving nature. They hope for a future where people are more conscious of their environmental impact and significant efforts are made to protect natural habitats. This is illustrated in the desire for exclusive nature areas and the hope that people change their behaviours can be seen in the following excerpts:

“When I am 20 years old, I hope that people will stop littering and polluting the environment...” URY_NA_16.

*“In 2049, the planet will have a dedicated area exclusively for nature, as a significant portion of the land will be set aside for that purpose”
URY_NA_17.*

Figure 41 paints a bleaker picture, and it depicts a future in which trees are cut down, “the world’s first robot” makes headlines, plants cost \$50.000, and the ocean teems with lifeless fish.



Figure 41. Student self-narrative URY_NA_12.

Career Aspirations and Migration

Students articulate various career aspirations such as becoming marine biologists, football players, veterinarians, and police officers. These ambitions are often linked to living abroad in other Spanish speaking countries such as Colombia or Spain, reflecting a search for new opportunities driven by the pursuit of better educational, professional, or lifestyle opportunities which they might feel are not within their reach in their context. For instance:

“I’ll work as a veterinarian, and I’ll live in Javea (Spain)” URY_NA_9.

*“When I turn 20, I would like to go to Colombia and be a police officer”
URY_NA_15.*

Perspective on Global Futures: hope, despair and pessimism

This analysis has shown that there seems to be a severe degree of despair and eco-anxiety among students. They have expressed worries regarding both personal and global futures the climate crisis and biodiversity degradation. For instance:

*“I think several animals will go extinct such as polar bears, lions, etc”
UY_NA_17.*

Figure 42 below reads “It will be the end of the world”.



Figure 42. Student self-narrative URY_NA_8.

In a similar vein, Figure 43 shows a crying Earth and Jupiter, and humans living in outer space therefore combining the concept of an advanced technological future and environmental catastrophe.



Figure 43. Student self-narrative URY_NA_5.

In sum, the dominant themes across students' self-narratives in School No. 294 (URY) include significant signs of eco-anxiety and solastalgia, a positive view towards technological

advancements and future aspirations in which migration is seen as a means for professional growth.

4.4.2 Students' self-narratives: cross-case Comparative Analysis

Based on the findings mentioned above, a cross-case comparative analysis identifying similarities and differences was conducted.

Similarities

There are several similarities among students' views regarding their futures in the three cases. This was especially evident regarding their technological and futuristic visions, concerns about the environment and eco-anxiety, and the link between professional careers and migration.

Technological and Futuristic Visions

Across all three cases, students frequently envision a future dominated by advanced technology and digital integration. There was a higher frequency of this narrative in School Lozzo Atestino (ITA) and School No.294 (URY). Students tend to imagine a world where robots and digital tools perform tasks traditionally done by humans, reflecting a fascination with technology and its potential impacts on society at large. For example:

“By 2043, I think the world will be more technological, with more buildings. Machines will perform human work, as they will be more efficient” ARG_NA_54.

“In my opinion, my future will be very different: there will be more electric cars and the iPhone 25. Education will become more digital, and there will be less work because of robots” ITA_NA_1.

“I believe that when I turn 33, I will live in a world full of floating cars and highly advanced machines” URY_NA_11.

Figures 44 and 45 below are other examples of the technological perspective. In Figure 44, the flying object is labelled “ecological”.



Figure 44. Student self-narrative ITA_NA_9.

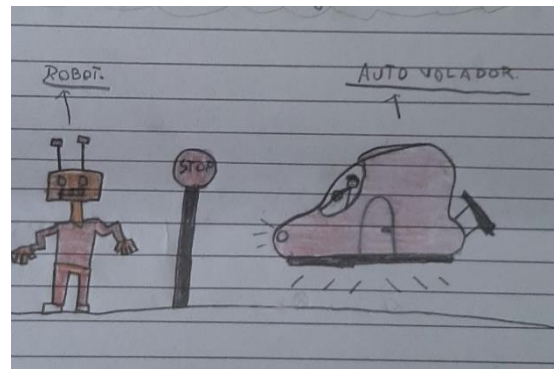


Figure 45. Student self-narrative URY_NA_25.

Eco-anxiety and solastalgia

Deep concerns about biodiversity, natural environments and pollution are recurrent themes. Students express worries about environmental degradation and hope for better conservation efforts in the future. Also, some students described a dichotomy between nature and technology, where the rise of the latter leads to the decline of the former. For instance:

“Everything will be polluted; thefts are going to rise, and rivers won’t exist...” ARG_NA_85.

“I think that if we don’t do anything for the environment the future will be very technological and there will be very little nature left...” ITA_NA_16.

“I hope people would not throw trash into bodies of water and would not interfere much with nature” URY_NA_7.

Figure 46 is yet another example of eco-anxiety expressed by a student and shows a crying sun, and a sad Earth split in two, one half with a tree and a bench, and the other with factories and dead trees.

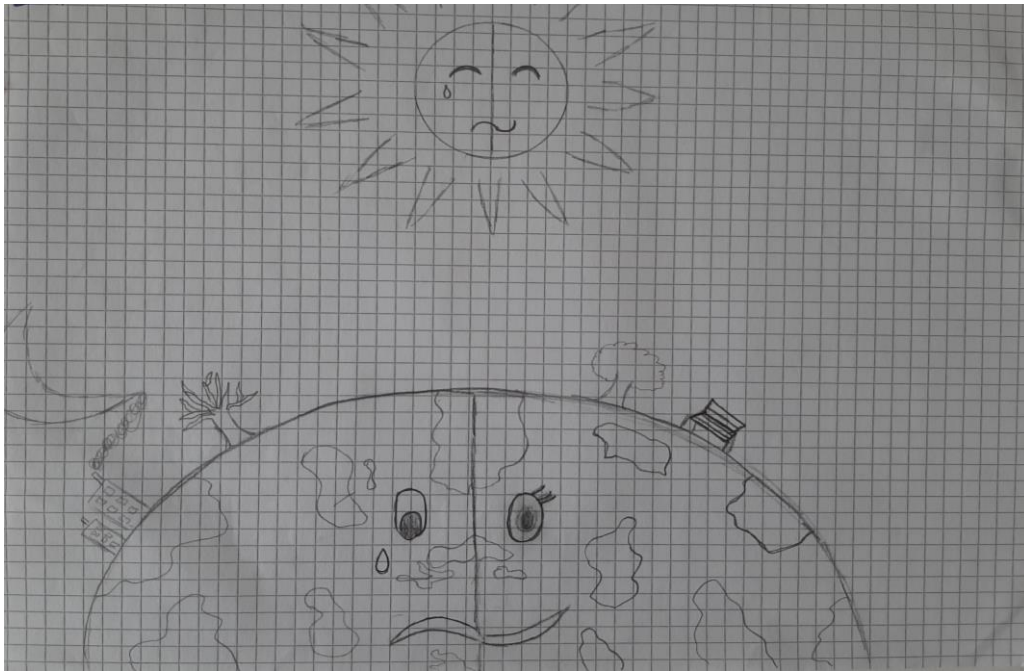


Figure 46. Student self-narrative ITA_NA_63.

Career Aspirations and Migration

Students in the three schools have high aspirations in terms of their professional careers, which are often linked to migration. Their envisioned career paths include specialised fields such as palaeontology, criminology, football players, film, veterinary and as public servants. Often, students refer to migrating abroad to pursue their dreams. In the case of School Lozzo Atestino (ITA), the preferred destination is the United States, whereas students in School Creciendo Juntos (ARG) and School No.294 (URY) see themselves in other Spanish speaking countries such as Mexico, Spain or Colombia.

Differences

As for the difference in students' views, the main one was on their degree of optimism or pessimism regarding their futures. Students in the three schools offer a wide range of outlooks regarding the future. Students in School Lozzo Atestino (ITA) offer a view of their futures that tends towards duality, oscillating between optimism and pessimism. They foresee both utopian and dystopian scenarios⁸. For instance:

“In my opinion, the future will either be a disaster or otherwise the world will become a better place where pollution disappears, and life becomes more sustainable for the environment” ITA_NA_19.

⁸ This dualism can also be observed in documents - and images - published by the European Commission. For instance, the cover photograph selected for a Sustainability Competences Review shows a world on fire on the left, and a thriving one with blooming nature on the right. See (Bianchi, 2020, p. 1).

Students in School Creciendo Juntos (ARG) and School No. 294 (URY) have shown an overall sense of despair and pessimism. Their concerns are rather focused on biodiversity loss and environmental degradation in the case of School No.294 (URY), and economic issues in School Creciendo Juntos (ARG), where students have repeatedly expressed significant concerns regarding inflation rates and high prices. For instance, Figure 47 below is a drawing that could be interpreted to portray the news with the title “It’s going up” and a currency exchange rate 1USD = 3416\$ARG. (The exchange rate at the time of fieldwork, early 2023, was 1 USD=300 \$ARG, and by July 2024 is 1USD=1300 \$ARG).

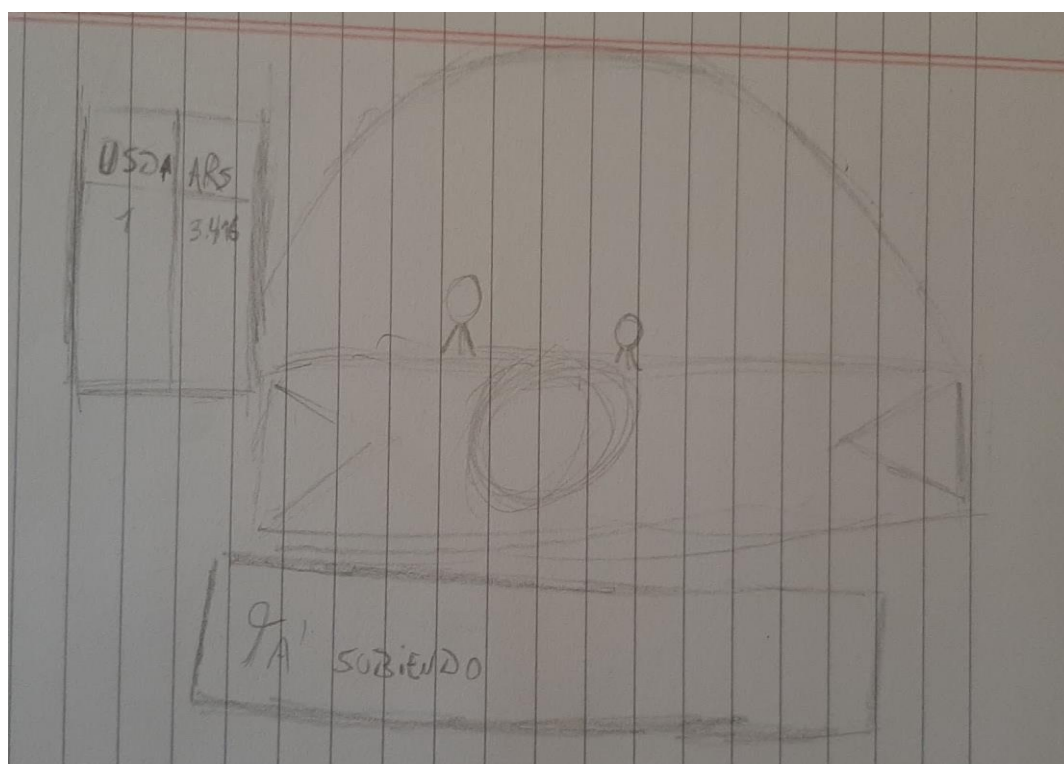


Figure 47. Student self-narrative ARG_NA_81.

Moreover, when referring to their lives in 20 years' time, some students in School Creciendo Juntos (ARG) mentioned their own death and the world ending, which did not occur in other schools. For instance:

“I’ll be approximately 32 years old, if I am still alive, I don’t know what I’ll be doing. Maybe the world doesn’t exist anymore...” (ARG_NA_27).

4.4.3 Students’ self-narratives: Summary

In this activity students have answered the questions “What will your life be like in 2042? What will your community look like? What changes do you anticipate compared to our lives today?”

Students' self-narratives were analysed using reflexive thematic analysis (Braun and Clarke, 2022) and findings have shown that the common themes were:

- Technological and futuristic visions: common across all cases, indicating a shared global perspective on the impact of technology on future lives.
- Eco-anxiety, solastalgia and deep concerns for the environment: this was recurrent across all cases. This highlights the stress and anxiety that the loss of biodiversity and environmental degradation causes on students.
- Career aspirations and migration: students in all three schools have expressed high career aspirations that are often linked to migration for better career opportunities.
- Perspectives on global futures: students in School Lozzo Atestino (ITA) showed a dual view of both optimism and pessimism about the future. Students in School Creciendo Juntos (ARG) and School No. 294 (URY) showcased rather pessimistic views about their future, where they envisioned worsened conditions in terms of the climate crisis, biodiversity loss and economic situation.

This analysis underscores that, in general terms, students in these three schools have mostly negative views about their futures which might create anxiety and despair in some students. This is a significant challenge for educational projects, which is further discussed in the [Discussion chapter](#).

4.5 Photovoice Analysis

During one of the workshops, students were asked to take a picture that answered: "What is sustainability for me?" As mentioned in the [Methodology chapter](#), this photovoice activity was analysed using reflexive thematic analysis (Braun and Clarke, 2022) and it entailed the following four steps based on (Kanstrup, 2002; Tsang, 2020): i) researcher analysis; ii) students' analysis; iii) comparing analysis done by researcher and students; and iv) theorisation. Findings have shown that:

- Students often took photographs of tamed nature such as flowers, plants or trees that have been planted or intervened by human beings.
- Consumer behaviours or patterns that include solar panels, recycling, or reutilising materials were common across all cases.

- The role of community, sharing and commons was present in schools Creciendo Juntos (ARG) and School No.294 (URY).
- Pictures that portrayed growing food were relatively common in the case of School Lozzo Atestino (ITA) and School No.294 (URY).
- The role of family was highlighted in the case of School Lozzo Atestino (ITA).
- Students in School Creciendo Juntos (ARG) categorised several photos taken by Italian students of solar panels under the category “public policy” thereby emphasising the importance politics and policies have in order to foster large-scale societal behavioural change.

4.5.1 Step 1: Researcher Analysis

The photographs students took were initially coded by themes. Oftentimes, pictures included diverse elements and were therefore assigned to more than one code. Table 6 summarises the number of photos and coded references per case:

Case	No. of photos	No. of references
School “Creciendo Juntos” (Argentina)	11	12
School Istituto Comprensivo Lozzo Atestino (Italy)	70	83
School No.294 (Uruguay)	17	22
Total	98	117

Table 6. Summary of photographs submitted.

The identified codes were, in order of references: Flowers, trees and plants (tamed by humans); Houses and homes; Landscapes; Growing vegetables at home; New Technologies; Recycling, upcycling or reutilising; Traditional Technologies; Celebration; Community and sharing; Family; Industrial agriculture; Drawing; Hand-made crafts; National Identity; Wildlife. Figure 48 shows how recurrent each of the codes were:

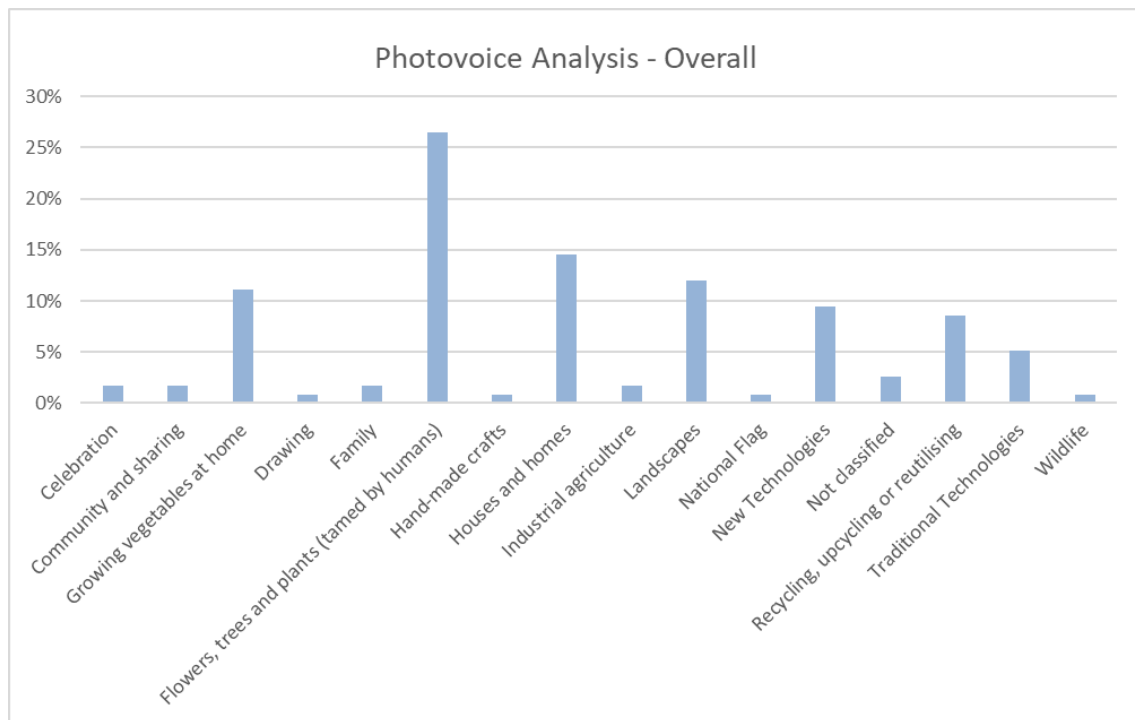


Figure 48. Overall photovoice coded references.

The following findings can be drawn from this analysis:

Finding 1: Trees, plants and flowers were portrayed as a key element of sustainability; 1 in 4 pictures included flowers, trees or non-edible plants which had been either planted or actively modified by human beings. For instance:



Figure 49. Photovoice ITA_Photo 30.



Figure 50. Photovoice URY_Photo 2.



Figure 51. Photovoice ARG_Photo 7.

Finding 2: Houses and homes, growing vegetables at home, and landscapes were the three remaining codes that had over 10% occurrence. Figures 52, 53 and 54 below are examples of these representations:



Figure 52. Photovoice URY_Photo 12.

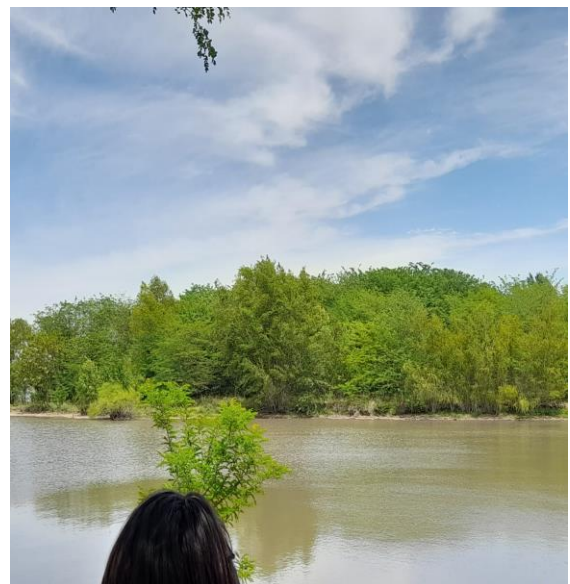


Figure 53. Photovoice ARG_Photo 2.



Figure 54. Photovoice ITA_Photo 31.

Finding 3: Consumer behaviour or patterns was observed in a number of photographs portraying modern technologies such as solar power, solar heating systems as well as recycling, upcycling or reutilising materials. This seems to indicate that students consider that consumption patterns are a crucial element of sustainability.



Figure 55. Photovoice ARG_Photo 1.



Figure 56. Photovoice ITA_Photo 69.

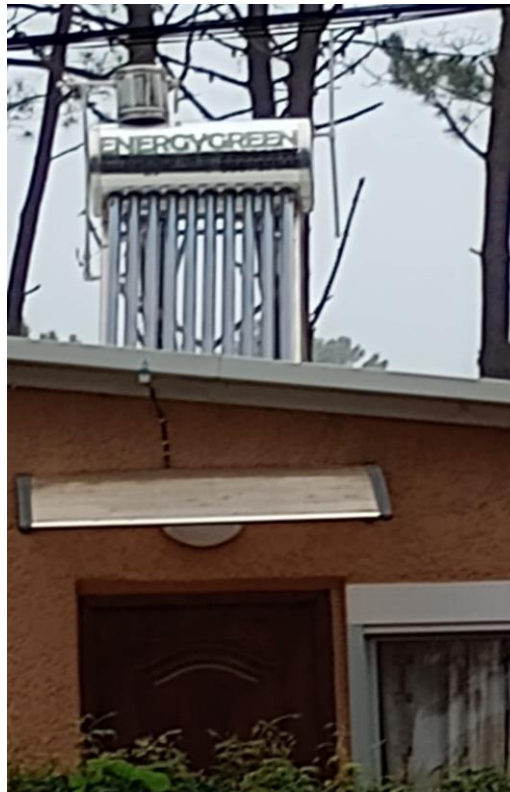


Figure 57. Photovoice URY_Photo 13.

Table 7 summarises how often each of these codes were identified in each of the cases. Highlighted in green are those codes above 20% and in yellow between 10% and 19%:

Code	ARG References	ITA References	URY References
Celebration	0%	2%	0%
Community and sharing	8%	0%	5%
Growing vegetables at home	0%	11%	18%
Drawing	0%	1%	0%
Family	0%	2%	0%
Flowers, trees and plants (tamed by humans)	33%	28%	18%
Hand-made crafts	0%	1%	0%
Houses and homes	17%	10%	32%
Industrial agriculture	0%	2%	0%
Landscapes	25%	13%	0%

National Flag	8%	0%	0%
New Technologies	0%	11%	9%
Not classified	0%	4%	0%
Recycling, upcycling or reutilising	8%	10%	5%
Traditional Technologies ⁹	0%	4%	14%
Wildlife	0%	1%	0%

Table 7. Photovoice codes per case.

It is worth noting that the number of photographs submitted in the three cases was significantly different: N URY=17, N ARG=11, and N ITA=70. Figure 58 synthesises the references identified in Table 7:

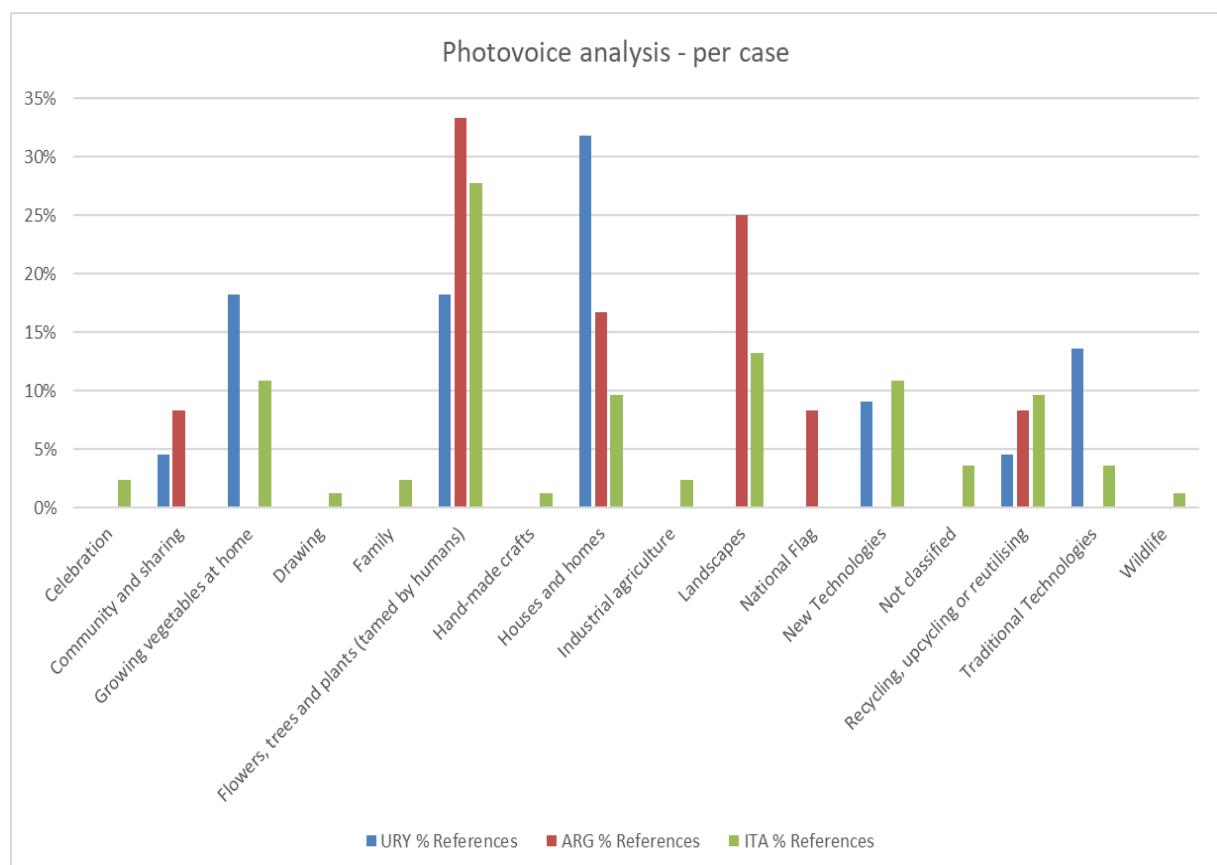


Figure 58. Photovoice codes per case graph.

⁹ In this context traditional technologies refers to bioconstruction, biotecture or other non-industrialised approach that uses natural elements.

As it can be observed in Figure 58, “Flowers, trees and plants (tamed by humans)” was the most recurring code in schools Lozzo Atestino (ITA) and Creciendo Juntos (ARG). Conversely, the code “Houses and homes” was significantly more prevalent in the case of the Uruguayan school representing over 30% of references compared to the other two cases, which represented 17% and 10%.

The code “Landscapes” was quite prevalent in both in School Creciendo Juntos (ARG) and Lozzo Atestino (ITA), 25% and 13% respectively, but it was not identified in the Uruguayan case. Finally, a similar observation can be made with reference to “Growing vegetables at home”, which was relatively common in School No. 294 (URY), 18%, and Lozzo Atestino (ITA), 11%, whereas it was not present in School Creciendo Juntos (ARG). This could be partly due to the fact that the two former schools are located in semi-rural areas, and therefore students might be more exposed to small-scale agricultural practices such as having vegetable gardens or animals like chickens, whereas School Creciendo Juntos (ARG) is located in an urban setting, thereby with less access to such practices. In the following section, an analysis of the photographs submitted in each school is provided:

School “Creciendo Juntos” (Argentina)

In School Creciendo Juntos (ARG), the most recurrent codes were “Flowers, trees and plants (tamed by humans)” which was identified in 1 in 3 references, “Landscapes” 1 in 4 references and “Houses and homes” in almost 1 in 6 references.

Interestingly, one of the photographs portrayed the student-led social cooperative at the school (see Figure 59). In this collective initiative, students produce t-shirts featuring the school logo and sell them, along with other items, to fund school or end-of-year trips, and purchasing new school materials like chairs or tables.



Figure 59. Photovoice ARG_Photo 10.

One student chose to photograph the national flag. This might suggest that they perceive sustainability as deeply intertwined with their identity. Additionally, in this context, it appears to symbolise a connection to something greater than oneself, which can also be viewed as an integral aspect of sustainability. Further insights regarding this photograph and the subsequent student discussions can be found in the [Step 2 analysis](#) which describes the students' perspectives of the photovoice activity.



Figure 60. Photovoice ARG_Photo 6.

School Istituto Comprensivo Lozzo Atestino (Italy)

At School Lozzo Atestino (ITA), the most frequently recurring themes were “Flowers, trees, and plants (tamed by humans)”, which was identified in over 1 in 4 references, followed by “Landscapes,” “New Technologies,” and “Growing vegetables at home,” each comprising approximately one in ten references.

The photographs from this school often depicted flowers, trees, and plants (N=23) that had been planted or altered by human intervention. This suggests that students have internalised the idea that the natural environment is tamed or intervened by humans. Additionally, unlike the other two schools, there was no mention of cooperativism or collaborative initiatives. Figures 61, 62 and 63 below showcase the most recurrent theme in this school. It is worth noting two aspects: in Figure 62, the photograph not only shows a house plant, but the action of watering it. This could indicate that the student wanted to express the idea of care, or even love. In Figure 63,

there is a small religious altar in the background. It is unclear if that was intentionally portrayed, but it could add an additional layer of meaning to the photograph.



Figure 61. Photovoice ITA_Photo 44.

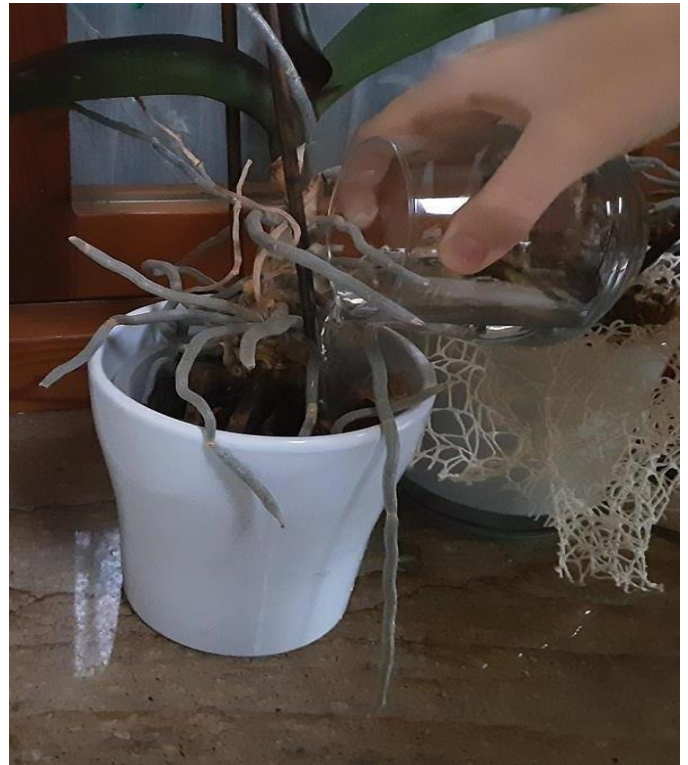


Figure 62. Photovoice ITA_Photo 17.



Figure 63. Photovoice ITA_Photo 32.

School No.294 (Uruguay)

At School No.294 (URY) the three most recurrent themes were “Houses and homes”, identified in 1 in 3 references, followed by “Flowers, trees, and plants (tamed by humans)” and “Growing vegetables at home”, each comprising nearly 1 in 5 references. Additionally, approximately 1 in 6 references were coded as “Traditional technologies,” such as bioconstruction methods for building houses.

Several images, particularly those depicting houses or homes, suggest a certain humility, implying that students may associate sustainability with simplicity or austerity. Overall, the collection of images conveys a sense of slowing down and calmness. For instance, Figure 64 below shows a house built using a traditional bioconstruction method.



Figure 64. Photovoice URY_Photo 1.

Figure 65 below depicts what students refer to as the “Helateca,” a creative term combining fridge (*heladera*) and library (*biblioteca*). This community initiative involves repurposing old fridges as informal book exchange points, strategically placed in locations like the school.



Figure 65. Photovoice URY_Photo 3.

Most of the photos submitted reflect the idea that sustainability is closely tied to the home and immediate surroundings, rather than being something distant or external, as sometimes observed in the other two cases. The absence of images depicting landscapes, or distant natural environments suggest that students at this school view sustainability as an integral part of everyday life within the intimacy of their homes.

4.5.2 Step 2: Students' Analysis

This analysis was conducted based on the students' discussions and coding of their photographs during the workshops. This process involved five cohorts in the Italian school, four in the Argentinian school, and one in the Uruguayan school. Each cohort engaged in a group analysis of the photovoice activities. The findings presented below represent a synthesis of the analyses conducted at the school level, rather than a detailed examination of each individual cohort.

School “Creciendo Juntos” (Argentina)

Students classified their photos using the following categories: House, Flag, Landscape, Harvest, Nature, Plants, Recycling, Delta, Passion, and Respecting the Environment. Since this was the

second school in which fieldwork was conducted, students were also asked to categorise the photographs that had been taken by students in School Lozzo Atestino (ITA). The categories included: Solar (panels), Nature, People, Objects (bike, plates, bottles), Recycle, Battery, Bins, Snow, Trees, Plants, Kitchen, Pots, House, Sustainable Living, Landscapes, Reuse, Natural Reliefs/Landscapes, Public Policy (e.g., solar panels), Respect for the Environment, Awareness (e.g., solar panels), and Public Goods.

A noteworthy interaction occurred when the Argentinian flag appeared in one of the photographs, sparking a discussion among the students. One student questioned the relevance of the flag with sustainability, prompting another to suggest that the photographer might believe the country itself embodies sustainability. The student who took the photo explained, “I took a picture of the flag because I love my country, and for me, love is an important part of sustainability. Self-love and love for my country is a fundamental part of sustainability.” This explanation led to a collective discussion about identity, love and sustainability.

School “Istituto Comprensivo Lozzo Atestino” (Italy)

Students at this school used a variety of categories to describe their pictures, including: Animal protection, energy production, bio agriculture, no waste, uncontaminated nature, sustainable fishing, food, production with natural materials, use of plants, nature (encompassing elements like sun, sky, fog, snow, flowers, plants, pines, pools, air), values (such as courage, hope, strength, commitment), entertainment, food, fauna, growth, friendships, orchards/cultivation, recycling, saving energy, respect, pollution, means of transport, and plastic.

Interestingly, students grouped plants, trees, and landscapes together under the category of “Nature” even though there were no photographs depicting untamed natural wilderness. Also, “food” was a recurrent category across all cohorts. Additionally, several students submitted photographs of their families. In discussions, a common sentiment emerged: love plays a crucial role in building and sustaining things together, making it an essential component of sustainability.

School No.294 (Uruguay)

Students at School No.294 (URY) categorised their photos under the following themes: Houses/objects, plants, flowers, recycling/reusing, mud and soil, and solar panels.

After examining photos from students in the other two schools, they identified common patterns across all three schools, particularly in the themes of recycling and the depiction of trees and plants.

Students noted that the photos from Italy differed from what they expected. They used the following categories to describe the Italian photos: stability, landscapes (noting similarities like “flowers” and differences such as “the seasons look different, there are hills”), recycling, trees, flowers and plants, solar panels, windmills, sunflower fields, compost, and boats/fishing. In analysing the photos from students in Argentina, they categorised them under flag, recycling, houses, bottles, vases, trees and plants, and field/lake.

4.5.3 Steps 3 & 4: Comparison and Theorisation

This analysis is based on the previous two analyses in Steps 1 and 2. The theorisation is developed in the [Discussion Chapter](#). The following insights can be drawn from comparing the researcher’s and the students’ analysis of the photovoice activity:

- **Tamed nature**

In response to the prompt “What is sustainability for me?” nearly one-third of the photos submitted by students depicted flowers, trees, or plants that had been planted or intentionally modified by humans, reflecting a view of nature that is shaped and controlled by human intervention. This was also prevalent in student discussions: For instance:



Figure 62. Photovoice ITA_Photo 17.

- **Recycling or reutilising**

Across all three schools, numerous photographs were categorised by students under themes of recycling, upcycling, or reutilising materials, indicating a shared recognition of the importance consumption patterns and waste management practices. For example:



Figure 66. Photovoice_ITA_Photo 41.

- **The role of community, shared identity and love**

Students from the three schools submitted photos that could be interpreted as showcasing the role of community. However, the focus was different. In School Creciendo Juntos (ARG), Figure 59 showcased a student-led cooperative where students sell t-shirts and other items to fund activities or materials they collectively prioritise. In School Lozzo Atestino (ITA) the photographs that emphasise community included family such as Figure 67. In the case of School No.294 (URY), Figure 65 portrayed an open shared library, known as a “helateca,” where informal book exchanges occur.



Figure 59. Photovoice ARG_Photo 10.



Figure 65. Photovoice URY_Photo 3.



Figure 67. Photovoice ITA_Photo 39.

- Growing food

Students in School Lozzo Atestino (ITA) and School No.294 (URY) submitted photographs that could be interpreted as growing food, a theme that was notably absent in the submissions from School Creciendo Juntos (ARG). For example:



Figure 68. Photovoice URY_Photo 10.



Figure 69. Photovoice ITA_Photo 12.

- Politics and public policy

There were significant differences in how students view themselves, either as consumers or as political actors. While discussing the photographs, students in school Lozzo Atestino (ITA) often

referred to themselves as consumers and not political actors. Their descriptions of their photos focused on what they could buy in order to be “sustainable” such as reusable water bottles, solar panels, etc, and not on their role as active citizens.

In contrast, students at School Creciendo Juntos (ARG) categorised four photographs of solar panels (see Figure 70 and 71 below) which were taken by students in School Lozzo Atestino (ITA), under “public policy,” emphasising that in their context, solar panels are prohibitively expensive and should therefore be subsidised to increase public access. Additionally, students both in School Creciendo Juntos (ARG) and School No. 294 (URY) featured photographs that highlighted the importance of the commons (see Figure 59 and Figure 65 above), reflecting a more collectivist approach. In these schools, the importance of active citizenship was present in student discussions.



Figure 70. Photovoice ITA_Photo 8.



Figure 71. Photovoice ITA_Photo 48.

4.6 Interviews and Participant Observations Analysis

In this section, the main findings drawn from the interviews with the members of the educational team and the participant observations that took place from October 2022 until April 2023 are presented for each case.

4.6.1 School Creciendo Juntos (ARG): Interviews and Participant Observations

The school was founded, and built, by community members due to a lack of public pre-primary and primary education in the area in the 1980s (see Figure 73 below). School Creciendo Juntos

(ARG) operates under a model of social governance, which is deeply embedded in its ethos and daily educational practices. As one participant noted, *“Parents own the school (...) I am neither the secretary nor the director; those roles belong to the school itself, and I am merely asked to fulfil them for the time being”* (Participant 7_ARG). Educators are deeply committed with the school project and the term “activist educator” (*maestro militante*) is often used and it appears to be one of the core principles of the school. As an educator stated, *“We can’t define what it means to be a social governance teacher; all we can say is that it involves being an empathetic teacher”* (Participant 9_ARG), highlighting the need for sensitivity and adaptability in this type of educational project. For instance, additional first-grade classes were created to ensure that 40 children would not be excluded from the school in 2023 (Participant 6_ARG). This responsiveness to community demands is a fundamental aspect of the school’s philosophy. Figure 72 below is a school mural that welcomes visitors as they enter the school and synthesises the core ethical grounds on which the school stands: freedom, autonomy, emancipation, political activism, and cooperativism.



Figure 72. School mural at School Creciendo Juntos (ARG).

The educators' perspectives on sustainability are mostly expressed through a social justice and political action lens (Participant 8_ARG; Participant 6_ARG; Participant 9_ARG), which exposes the complex and deeply interconnected relationship between action as politics, community engagement and institutional practices. Another educator underscored the importance of adapting educational - and sustainability - practices to their local reality. She noted that even though the school cannot implement high-cost solutions like solar panels, they explore feasible alternatives that integrate the community into the school's sustainability efforts. For instance, that educator highlighted the school's critical stance on current consumption systems, advocating for alternative production and consumption methods: *"We promote practices that avoid excessive consumption, criticising production and consumption systems that treat the environment as a disposable resource"* (Participant 9_ARG).



Figure 73. Community members building School Creciendo Juntos (ARG).

The notion of challenging production and consumption systems as a philosophy extends to everyday practices, such as using recycled materials to create 'eco-bricks' as part of the students' cooperative initiatives. For example, along with a group of architects from the

University of Buenos Aires, the community built a classroom using bricks made of recycled plastics. Nonetheless, members of the educational team emphasised that they are not content with their work in terms of sustainability and mostly referred to the lack of recycling bins in the school and the fact they are planning to install air conditioning in classrooms.

The school fosters a sense of collective responsibility among students. Activities like maintaining shared areas, cleaning, and organising materials instil an ethic of care and shared duties of the common spaces - or commons. A widespread practice is for students to be responsible for cleaning their classroom once their school day is over. As one educator stated, *“These everyday practices emphasise the importance of shared responsibilities, we try to foster a sense of collective duty among students” (Participant 8_ARG).*

Cooperativism, collectivism and the concept of commons run deep in the school. For instance, a group of mothers run a cooperative in which they use recycled materials to create items such as pencil cases, bags, etc, which they then sell (Participant 8_ARG). Also, students have a cooperative in which they stamp t-shirts with the school logo and sell them for 2000 Argentinian pesos (i.e. 5 euro in March 2022) to finance projects such as end of year school trips. Students are supported to create cooperatives and projects for self-funding projects. Moreover, important decisions regarding school practices, infrastructure and staff are usually made collectively.



Figure 74. Student committee selling t-shirts to fund projects.



Figure 75. Stencils used by the student cooperative to make T-shirts.

Another example of commons in the school is book sharing. Due to rising book prices, a collective decision was made by which students purchase textbooks as a group, use them

throughout the year - without writing on them - and then leave them behind for the following cohort to use (Participant 8_ARG).

Walking around the small school there are also several reminders of the Argentinian dictatorship in the 1980s. There were several works done by the students that referred to the Argentinian dictatorship, the enforced disappearances and the national remembrance date on March 24th. Figure 77 below is an example of the artwork students do and exhibit in the school. It reads from top to bottom: “Last walk”; “Before dying”; “Point-blank shooting”; “Silent war”; “As if nothing was happening”; “War talks that took the lives of innocent youth, victims of the system”.



Figure 76. Remembrance mural for “La noche de los lápices”¹⁰ at School Creciendo Juntos.



Figure 77. Photos of detainees during the dictatorship at School Creciendo Juntos.

The distinction between history and memory is particularly significant in the context of political atrocities committed during Argentina's dictatorship in the 1970s and 1980s. History refers to the factual, documented account of events, often constructed by historians through the analysis of archival materials, official records, and testimonies (Nora, 1989). In contrast, memory

¹⁰ “La noche de los lápices” was the night of September 16th, 1976, in which 10 underaged secondary school students were kidnapped. They suffered torture, rape and 6 of them were murdered by the military dictatorship.

encompasses the personal and collective recollections and narratives of these events, which are often shaped by emotions, trauma, and the fight for justice.

In Argentina, and School Creciendo Juntos (ARG) in particular, the memory of the atrocities carried out during the dictatorship is kept alive through practices of “memory work,” such as public commemorations and the preservation of sites associated with state terror, which serve as reminders of the violence inflicted by the regime and as tools for political activism (Jelin, 2003). This interplay between history and memory is crucial for understanding how societies, and by extension school projects, process and respond to past atrocities, particularly in post-dictatorial contexts where the struggle for truth and justice continues.

Placing political activism at the centre of the educational project is not simple. One of the major challenges the school faces nowadays is a “clash of political activisms” between educators whereby different forms of activism among teachers can lead to conflicts (Participant 7_ARG). Some educators identify primarily as political activists in the field of education, while others direct their political activism toward activities outside the realm of the school. This translates in educators having different political priorities and therefore there is a diversity in the degree of participation and involvement in school-related political activities, which are optional. This can sometimes create tensions between members of the educational team. As one participant stated, *“My political activism is in education. In the school, yes, but my time is dedicated here... I consider myself an educational activist, but here” (Participant 7_ARG).*

Political tensions within the broader community have influenced school's practices. An educator recalled a period from 2015 to 2019 when there were concerns that teachers discussing politics might be reported to educational authorities, alongside proposals to instal cameras in classrooms. Educators often likened their educational project and political activism to attending a religious school, where political positions are deeply ingrained and unavoidable: *“If you decide to be part of this school community, you already know what our political stance is” (Participant 6_ARG).*

The school follows an 'open school' policy designed to cultivate a reciprocal relationship between the institution and the surrounding community, facilitating the school to permeate the surrounding community, and vice versa. Within this framework, parents - who effectively serve as the school's owners - are highly encouraged to participate in school activities. Their involvement extends beyond attending team meetings and participating in decision-making processes, but also in observing classes. This practice was initially introduced to address concerns regarding specific teachers, leading the educational team to invite parents to observe

classes and engage in follow-up discussions when necessary. The school actively strives to integrate the local community to its educational initiatives. As a banner in the school said: *“Porosity, as the ability to absorb everything that happens outside to strengthen the inside, is perhaps why we never wanted the school to have walls” (La porosidad, como cualidad para absorber todo aquello que sucede afuera para fortalecer el adentro, tal vez por eso nunca quisimos que la escuela tuviera muros).*

An example of this integration is the student-run community radio station, co-managed with educators, where students are responsible for the creation and production of the radio content. Additionally, students have initiated social media campaigns, contributing to the dissemination of knowledge and best practices within the community.



Figure 78. School teachers and community members in a rally.

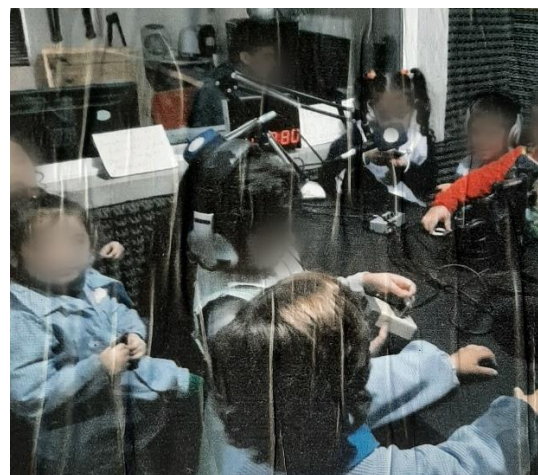


Figure 79. Students in School Creciendo Juntos recording a radio show.

School governance is overseen by an advisory team consisting of five individuals, all of whom are either founders or long-serving members with over 20 years of experience at the school. This structure ensures the continuity of the school's ethical framework. Historically, the secondary school teaching team was stable, with many educators having worked together for 15 years. However, turnover does occur, and new teachers occasionally find it challenging to align with the school's ethos and work dynamics. To support staff, weekly grade-level meetings are held, during which the advisory team provides guidance. Additionally, four annual meetings bring together the entire school staff, including both teaching and non-teaching members, along with the family committee. In 2020, the family committee played a significant role in advocating for

the resignation of the primary school principal following a period of internal political conflict, which led to the director's departure from the school (Participant 7_ARG).

Last but not least, the school is characterised by a strong emphasis on the arts. Notably, in the upper secondary grades (11th and 12th Grades), the curriculum exclusively offers an Arts orientation with a particular focus on visual arts and communication. This artistic emphasis is evident across the school building.



Figure 80. Arts installation donated by an artist in School Creciendo Juntos.



Figure 81. Art installation at School Creciendo Juntos.

Art is frequently used within the school as a medium for expressing political stances. For instance, as illustrated in Figure 82 below, students have creatively modified original advertisements to convey critical messages. The column on the left shows original advertisements, one of them states: “Goodbye stretch marks. Mini-invasive laser treatments. Don’t let this summer take you by surprise”. The column on the right shows the students’ modified version: “Goodbye stretch mark treatments. Don’t let this summer make you self-conscious.” This example highlights how students use art to challenge societal norms and promote alternative perspectives.



Figure 82. Modified advertisements at School Creciendo Juntos.



Figure 83. Students' messages for Women's Day at School Creciendo Juntos.

In a similar vein, Figure 83 shows student messages for Women's Day. This includes, among other statements, "I will celebrate when none of us (women) are missing"; "We fight because we're not being heard"; "We're not hysterical, we're historical"; "We're not an object for you to consume"; "I also like women and I don't stalk them".

4.6.2 Italy: Interviews and Participant Observations

The fieldwork at School Lozzo Atestino (ITA) was conducted between October and December 2022. the school has been recognised as a prominent 'innovation hub' within the Italian educational system. Interviews with members of the educational team revealed several key characteristics of the school. Firstly, the school is quite isolated and lacks access to public transport, which has hindered the development of a meaningful relationship with the surrounding community - a situation that is not expected to change in the next 10-15 years.

Instead, the focus has been on building relationships with businesses and cooperatives (Participant 1_Italy; Participant 3_Italy).

Assembling a stable educational team has proven challenging, with 16 out of the 35 secondary school teachers on fixed-term contracts, leading to potential annual turnover (Participant I_Italy). The school's leadership is known for its innovative approach, particularly in promoting STEM education and pushing the educational team towards continuous self-improvement. While this vision is well-received by both educators and students, it has also created tensions, especially among more traditional teachers (Participant 2_Italy; Participant 3_Italy; Participant 4_Italy).

Additionally, there are notable differences in the functioning of the nine school structures, partly due to variations in infrastructure and student demographics (Participant I_Italy). The fieldwork coincided with the aftermath of the Russian invasion of Ukraine, during which the peace flag was prominently displayed in each of the school buildings. This symbol of “active” neutrality and nonviolence¹¹ contrasted with the Italian Congress's decision to provide considerable funds to support the war effort. Members of the educational team indicated that the decision to raise the flag had been made “from above”.



Figure 84. Peace flag in Italy (Il Fatto Quotidiano, 2022).

¹¹ For more see: <https://lespresso.it/c/opinioni/2022/10/23/la-vera-bandiera-della-pace-oggi-e-quella-dellucraina-si-deve-prendere-posizione-nel-conflitto/29591>
<https://www.ilfattoquotidiano.it/2022/02/24/guerra-russia-ucraina-manifestazioni-pacifiste-in-tutta-italia-contro-la-guerra-dallanpi-alla-rete-disarmo-fermare-le-ostilita/6505750/>

The following reflections were written down after a workshop in Lozzo Atestino School (ITA) that took place on November 28th, 2022. This interaction happened in a classroom with 12 and 13-year-olds from a historically very conservative and right-wing municipality, I learned later on:

To begin with, there were only 15 students instead of the usual 25, decimated by the flu. The workshop main activity was centred on a group task in which students had to first identify a challenge their communities is facing and think of transformative actions to address it. Most of the issues presented were diverse and included teenagers and smoking, issues with water management and ditches in nearby fields, and gender-based violence.

However, one of the groups decided to work on racism. When I asked them what their context was, they immediately started explaining that “We need to know who they are before coming. They come over and we have no idea who they are.” I asked if I could listen to their discussion. The “solutions” they were proposing included:

“They have to stay in their country if there is war over there. They ask for help from our governments for weapons, food, water and shelter.”

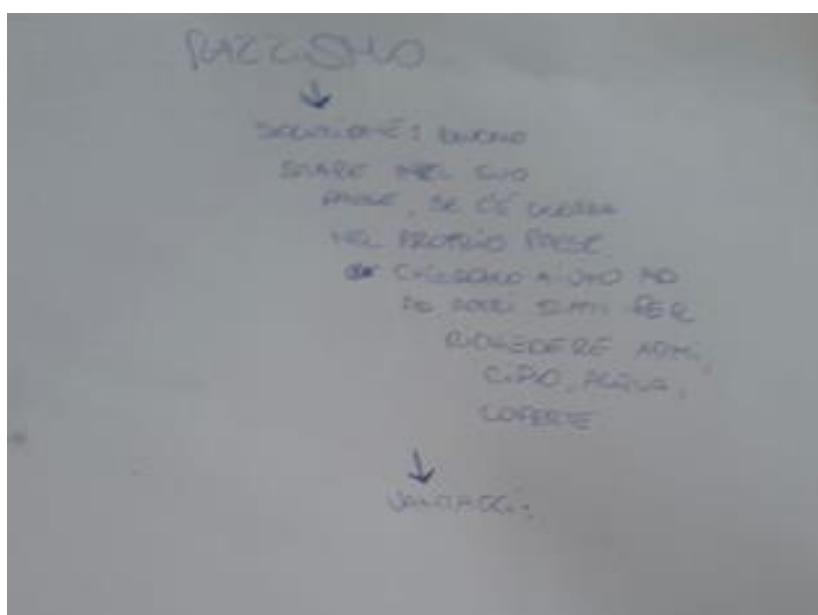


Figure 85. Workshop Notes I.

I asked if I could take a picture of their notes, and they agreed. However, one student tried covering what they had written. It had become clear that they realised that either I was not “happy” with their discourse or that they were aware that the narrative they were expressing is problematic, to say the least.

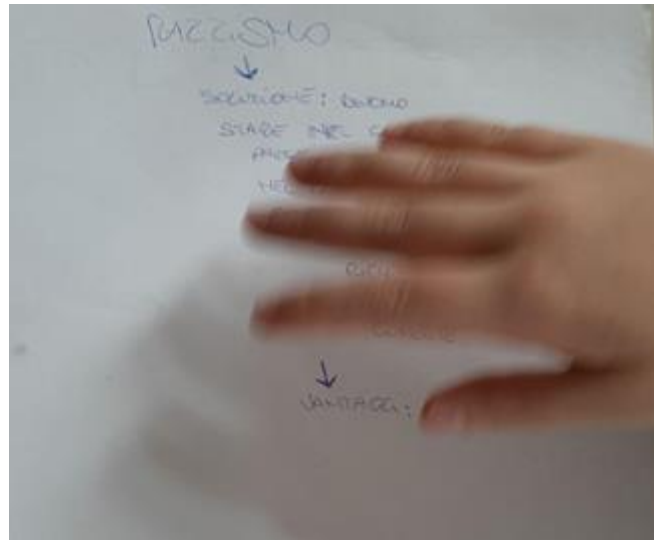


Figure 86. Workshop Notes II.

I asked them to explain what they meant with their proposals, and they expanded on their divisive discourse. I suggested considering other variables, that is, not only the fact that a person who decides to migrate might be forced to, but how might they feel when they arrive in a new country which has different customs and rules. I suggested they considered the “migration” card game we had played the week before. The aim of that game was precisely to experience the discomfort one could feel when the rest of the players knew the rules and you did not, and how little chances of “winning” one could have due to the lack of understanding.

After a few minutes, I came back to the group and their worksheet included phrases such as: “there is scarcity of resources in their countries”, “they come for money”, “they have low educational level”. And as solutions: “Africans must be treated as Italians”, “provide them with an education and then work”, “provide them with the basic necessities for a decent life”, etc.

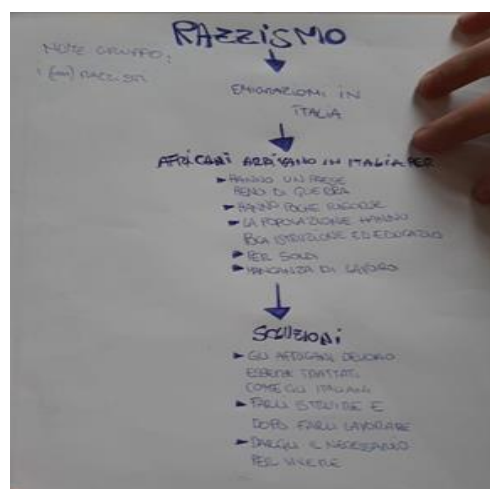


Figure 87. Workshop Notes III.

When the group had to present their issue to the rest of the group, however, they essentially returned to their initial position and said things such as “they (African migrants) should stay in their country”, “Africans who come here need to respect our religion, if they are Muslims they cannot wear a veil”, “they come without documents and they are drug dealers”, “they do not learn the language”, “they have no culture”, among other phrases of the such.

Interestingly, three students raised their hands to make comments. It is important to mention that these three male students have strong personalities. They asked, “don’t you think that what you are saying is a bit racist?”, “how can you prohibit someone from practising their religion? How would you feel if they did that to you?” “Africans do not disrespect our religion, at all, if that happened it would be all over the news”.

The group that was presenting struggled to answer these questions, but they maintained their stance. It is worth noting that two of the three students that intervened are second-generation Italians¹²; one of them has family roots in Romania and the other one in Cabo Verde. The third student is from Lozzo, where the school is located. After the presentation had run its course, I asked to speak. I knew this would interrupt the flow of the presentations, since there were still two remaining, but it was important to say something in that moment. In short, I offered a 5-10-minute reflection in which I said that I myself am a migrant in Italy, and that therefore I felt, to a degree, offended by some of the things that had been said.

In that moment I then shifted to the key issue, racism and xenophobia. Knowing that their answer would “no”, I asked if I, too, was one of the migrants they referred to. They swiftly said “No, you’re not coloured” (*di colore* in Italian) which led to an interesting conversation about what that phrase means. I wrote “di colore” on the whiteboard and asked, “Do I have no colour?” Some looked perplexed since they believe “di colore” the right way to refer to a non-white person in Italy. I asked, “am I transparent? Don’t we all have a skin colour?” I added, “maybe since I am not a Christian this means I am bad, or maybe I should not be allowed to drink mate, since it is not customary for Italians to do so” (I was drinking mate during the workshop).

Then, I shared my family story: how my great grandfather had migrated from Veneto, not far from where the school is located, to Uruguay because of war and hunger, and how he was

¹² In Italy citizenship is acquired by *jure sanguinis* and not *ius soli*. This means that citizenship is passed on by direct kinship, not by place of birth. Individuals born in Italian soil are not Italian citizens, from a legal standpoint, until they turn 18. For more on this matter I recommend reading Marilena Umuhoza Delli’s [“Lettera di una madre afrodiscendente alla scuola italiana”](#) and Nadeesha Uyangoda’s [“L’unica persona nera nella stanza”](#).

allowed to live his life in peace, as an Italian. I asked if that was wrong and that instead he should have been forced to be more Uruguayan.

One of the students who had confronted the group, asked “then what are we supposed to say”? I replied that it is not my role to answer that, it is something the Italian society will have to decide considering all opinions, especially that of non-white people. Then, a student added that in Cabo Verde people say “negro” (black) to each other all the time. To which I responded that language is strongly cultural and contextual, and that maybe in Cabo Verde that is common and accepted, but it would not be in Italy. Then, I allowed the two remaining groups present. I did not want the group that presented to feel under the spotlight or that I was telling them off. However, I could have probably done better in this regard.

Once the workshop had finished, one of the students who had done the problematic presentation came to me and said, “sorry if I offended you, but I don’t understand why”. I said that I was not angry or upset with him in any way but that some of the things they had said were deeply troubling and problematic, in my view. Their teacher was not present in the classroom when the presentation took place, but she did witness the last few minutes of my “talk”. After the students had left, I briefly explained what happened and she said she was not surprised since in that town fascists have historically been elected. She did not seem upset though, she said “That’s how things are here, not much we can do”.

It is important to note that according to official data, 50.480 individuals - which represent 0.06% of the Italian population - arrived in Italy by crossing the Mediterranean by boat in 2022 (Ministero dell’Interno, 2024), when fieldwork took place in Italy. The abhorrent, dehumanising, and divisive media coverage this has had over the past years has also been unfortunately fuelled by xenophobic rhetoric by high profile Italian political leaders, among which the Prime Minister.

4.6.3 Uruguay: Interviews and Participant Observations

Fieldwork in School No. 294 took place during March and April 2023. The school’s pedagogical focus has centred on the vegetable garden and its solar power, fostering a deep connection between students and their surrounding natural environment. Students have become knowledgeable about local flora and fauna, reflecting the school’s commitment to environmental education (Participant 11_URY; Participant 12_URY).



Figure 88. Classroom at School No. 294 (URY).



Figure 89. Vegetable garden at School No. 294 (URY).

Based on participant observations and interviews with members of the educational team several challenges issues have emerged. Some educators chose to work at the school primarily for its convenient location rather than a genuine connection with the educational project. Moreover, teachers operate within a multi-grade system, typical of rural schools in Uruguay. However, due to the small student intake, the headteacher of the school is also responsible for teaching three primary school grades, leading to a significant workload. This dual role shifts the focus from educational innovation to one of “survival”, posing a serious risk of burnout. Despite the

headteacher's request for an additional teacher to focus on school management, national authorities have denied the request (Participant 12_URY).

The school has also faced persistent maintenance issues since its inception in 2016, with recent struggles particularly related to solar panels and electricity (Participant 11_URY). Although originally powered by solar energy, the school has encountered problems with battery storage, resulting in frequent power outages. National authorities have offered to connect the school to the power grid and therefore the school would have a “regular” electricity supply. However, the headteacher rejected this solution, questioning its lack of alignment with the concept of a “Sustainable School.” An alternative solution, which involves connecting the school to the grid to balance energy supply and demand has been proposed but remains unimplemented due to bureaucratic delays (Participant 11_URY).

Additionally, the school faces a high student-teacher ratio Grades 1 to 6, which presents a significant challenge for offering innovative educational approaches. This high ratio is not only due to lack of additional teaching staff but also infrastructure, there is lack of space to host 85 students aged 5-12 in three classrooms. Moreover, several students require special attention that teachers do not have the time to provide (Participant 13_URY). The situation is further complicated by high turnover in fundamental roles such as the headteacher, teaching staff, and school inspectors, which has created instability for students and families who bear the consequences of this lack of continuity (Participant 12_URY).

School inspectors have labelled the institution as “too expensive” for the educational system, primarily due to the high maintenance costs, and have shown little interest in providing proactive support (Participant 11_URY).

4.7 Addressing Research Questions

In this section, the research questions and sub questions are addressed based on the findings that emerge from the data analysis.

4.7.1 RQ1) How do schools provide scaffolding to students aged 11-15 towards developing sustainability competences?

The findings of this research have shown that schools provide scaffolding to students towards developing sustainability competences (Bianchi, 2020; Brundiers *et al.*, 2020) i.e. systems thinking, values thinking, self-awareness, integrated problem solving, interpersonal skills, and strategic thinking, by focusing on three different aspects: political education, STEM-oriented pedagogy, and learning from the surrounding natural environment. Each of the three schools embrace pedagogical projects which entail distinct characteristics, strengths and challenges, summarised in Table 8 below:

School	Focus	Strengths	Challenges
Creciendo Juntos (ARG)	Political Education	School as community; Social governance and collective decision-making; Education for social justice through political activism; Collectivism and cooperativism; Emphasis on arts education.	Infrastructure limitations; Commitment; Political tensions; Legal framework.
School Lozzo Atestino (ITA)	STEM-oriented pedagogy	Innovative leadership and vision; Alignment with international agendas; State-of-the-Art infrastructure; Reputation and recognition; Commitment to professional development.	Geographical isolation and lack of community engagement; Teacher turnover; Infrastructure disparities; Resistance to change; Vertical school governance.
School No.294 (URY)	Learning from surrounding natural environment	Focus on environmental sustainability; Self-sustained building; Location, access to experts and schools' network; Flexible curriculum.	Instability in educational team; Maintenance and bureaucracy; High student-to-teacher ratio; Limited political advocacy; Lack of community engagement.

Table 8. Summary of schools' scaffolding focus.

4.7.1.1 Political Education at School Creciendo Juntos, Argentina.

The primary pedagogical aim of School Creciendo Juntos (ARG) is social change through a community and social justice oriented educational model. The school seeks to foster critical consciousness and active participation in both local and broader societal contexts. This is achieved by integrating social justice, political activism, and cooperative principles into the curriculum and daily practices, thereby fostering students, and the educational community, to become informed and responsible citizens who can contribute meaningfully to society at large. The identified strengths and challenges of this educational project are outlined below:

Strengths

I. School as community

The school was founded and built by community members to meet local needs and continues to adapt its educational practices in response to community demands. One of the goals of this school project is to permeate its surrounding community and transform it. This reciprocal constant exchange between the school and its community makes education relevant and meaningful to students' lives.

II. Social governance and collective decision-making

The social governance model, where students, parents and community members play an active role in school governance, promotes democratic decision-making processes and ultimately aim to reflect the collective will of the community. This participatory approach fosters a sense of ownership and accountability among all stakeholders. The school strength lies in the collective decision-making processes and endeavours. It is clear that the directive team plays a vital role, but the school identity does not depend on any single individual.

III. Education for social justice through political activism

The school's educational practices are grounded in the principles of social justice through political activism, partly inspired by Paulo Freire's philosophy. This commitment empowers students to critically engage with societal issues and encourages them to become agents of change within their communities. Recent concrete examples of these practices are students addressing policymakers in Congress, students' works focused on the dictatorship and its victims, focus on feminism and objectification of women across the school, and the student-led school community radio.

IV. Collectivism and cooperativism

The school's cooperative initiatives promote projects among students and mothers, and it reflect its commitment to everyday action as politics. Moreover, students are instilled with a

sense of responsibility, collectivism and commons through diverse activities; for instance, the upkeep of classrooms and shared areas. Other examples are the student cooperative that makes and sells t-shirts and a mother-led cooperative that makes school materials such as pencil cases from plastic waste.

V. Emphasis on arts education

The school has a strong focus on the arts, particularly in the upper secondary grades, which provides students with creative outlets to express themselves and engage with social and political themes. This emphasis on visual arts and communication enriches the educational experience and aligns with the broader goals of the school of fostering critical and creative thinking for political action.

Challenges

I. Infrastructure limitations

Despite ongoing efforts to expand, the school infrastructure is modest and faces challenges in accommodating the growing student population. The limited number of classrooms and facilities necessitates double shifts and creates waiting lists for enrolment, which hinders the ability to host all interested families.

II. Commitment

While the school has a longstanding and stable core team, some new teachers struggle to adapt to the unique ethos and demands of this project, leading to turnover. The figure of “activist educator” (*maestro militante*) is difficult to come by and it requires an extraordinary personal commitment to the school and the out-of-office tasks that are part of running the project such as school raffles and fairs, community meetings, extraordinary events on Saturdays, among others. Working at this school is often referred to as a way of political activism.

III. Political tensions

The school project has a strong focus on political activism which even though is a strength, it also presents challenges. Differences in political views and approaches among staff can lead to internal conflicts, which may impact the cohesiveness of the educational team and the implementation of the pedagogical goals. Occasionally, there are mismatches in how and where members of the educational team engage in political activism. One interviewee noted that there is occasionally a “clash of activism” (*choque de militancias* in Spanish) among educators (Participant_7 ARG). Political tensions have also surfaced within the broader community. For example, there have been conflicts with fathers who express dissatisfaction that their wives, rather than being stay-at-home mothers, are now participating in cooperative activities.

Additionally, the school has intervened in complex cases of intrafamily violence (Participant_6 ARG).

IV. Legal framework

As a social governance school, the school operates in a legal framework that does not differentiate it from private schools. The lack of clear legal distinction from private schools poses challenges in terms of funding, recognition, and operational stability, which could have an impact on achieving its vision and mission.

4.7.1.2 STEM-oriented Pedagogy at School Lozzo Atestino, Italy

The main pedagogical aim of School Lozzo Atestino is to advance educational innovation, particularly through the integration of STEM (Science, Technology, Engineering, and Mathematics) disciplines in school practices and curriculum. The school is committed to fostering a modern educational environment that emphasises technological literacy and problem-solving. This focus on STEM education is designed to offer the skills and knowledge to succeed in a fast-evolving digital world, positioning the school as a leader in educational excellence within the Italian public education context. The identified strengths and challenges are:

Strengths

I. Innovative leadership and vision

The school benefits from the leadership from a recognised professional whose expertise in robotics, tinkering, and educational innovation has significantly shaped the vision of the institution. The headteacher's commitment to integrating advanced technologies and fostering a culture of continuous improvement has established the school as a hub of educational innovation in Italy.

II. Alignment with international agendas

The emphasis on STEM disciplines aligns with contemporary educational trends such as the Sustainable Development Goals (SDGs) and the EU Green Transition Agendas¹³. The incorporation

¹³ The use of “green” terminology associated with progress in Europe is not new. During the Spanish dictatorship, the “Green Revolution” was enforced in a stringent manner. Initiated in the 1950s with support from U.S. development programs, this process sought to industrialise agriculture by promoting genetic modifications, increasing the use of chemical fertilisers, and expanding reliance on fossil fuels. The outcomes of this process differed across regions, leading to either hyper-intensive repopulation or deforestation, a decline in genetic biodiversity, and the displacement of local communities from their ancestral territories (Barbanza Ecosocial Lab, 2023).

of coding, robotics, and other technological skills into school practices and curriculum reflect the interest of having well-equipped students for a rapidly changing world.

III. State-of-the-Art infrastructure

Several of the school's buildings are equipped with modern facilities, including tinkering classrooms and spaces designed for immersive, interactive learning, as well as an "SDG classroom". This advanced infrastructure supports the school's pedagogical aims and enhance the overall learning experience. Similarly, significant investments have been made for the vegetable gardens as well.

IV. Reputation and recognition

The school reputation as an innovation hub is reinforced by national recognition, including visits from prominent figures such as President Mattarella. This recognition not only validates the school efforts but also attracts attention and resources that can further its educational mission.

V. Commitment to professional development

The dedication to professional development, with over 200 hours of training programs for educators, aims at ensuring that the teaching staff remains at the forefront of educational practices. This commitment to continuous learning fosters a progressive and dynamic educational environment.

Challenges

I. Geographical isolation and lack of community engagement

The semi-rural location of the school, which is spread across multiple municipalities presents challenges in terms of accessibility and community engagement. The lack of options of public transport exacerbates this isolation, potentially limiting the school's ability to interact with its surrounding community. Unlike other educational models that emphasise strong ties with the local community, the limited community engagement may curtail its educational and social impact. This could also pose challenges in creating a sense of belonging and support for students from lower-middle socioeconomic backgrounds.

II. Teacher turnover

The school faces significant challenges in maintaining a stable educational team, particularly at the secondary level, where 16 out of 35 teachers are on fixed-term contracts. This high turnover rate can disrupt continuity in teaching and potentially impact the quality of education provided.

III. Infrastructure disparities

The nine different school buildings vary significantly in terms of infrastructure, with some facilities being newly renovated and others in need of repair or update. These disparities can lead to inconsistencies in the educational experience and may create challenges in providing a uniform standard of education across the institution.

IV. Resistance to change

While the school's leadership is focused on innovation, the push towards technological educational practices has led to tensions, particularly with more traditional educators. These internal conflicts could hinder the implementation of the school's vision and affect the cohesiveness of the educational team. Moreover, the critical episode described in [Section 4.2.6](#), which occurred during a workshop and involved racism and xenophobia, raised three main issues: i) there are significant challenges in the surrounding community in terms of alignment with ideas of interculturality, inclusiveness, and human rights; ii) some students are permeated by and reproducing divisive and hate-based discourses while other students find them problematic and are willing to stand up; iii) teachers feel powerless to make significant changes because the school is located in a historically hard conservative town.

V. Vertical school governance

Vertical school governance refers to a hierarchical structure where decision-making mostly occurs at the top, often limiting the input of other stakeholders in the decision-making process (Bush, 2011). This type of governance can be particularly problematic when addressing socio-political issues, as it may fail to reflect the diverse perspectives within the school community. For example, during the Russian invasion of Ukraine, the decision to raise the peace flag at the school was perceived by members of the educational team as a directive imposed "from above", rather than a decision made through collective processes. This approach contrasts with democratic values, which emphasise participation and shared governance. Furthermore, an overreliance on a single individual's vision and capacity can jeopardise the long-term viability of the school project, as it may stifle innovation and adaptation in the face of future challenges (Gunter, 2016).

4.7.1.3 Learning from Surrounding Natural Environment at School No.294 (URY)

The main pedagogical aim of School No. 294 is to integrate environmental sustainability into every aspect of the educational experience, using the school's unique infrastructure and surrounding environment as a living laboratory for teaching and learning. The school approach emphasises hands-on, experiential learning that connects students with ecological principles,

promoting a deep understanding of environmental sustainability. The following strengths and challenges of the educational project have been identified:

Strengths

I. Focus on environmental sustainability

The commitment to environmental sustainability is reflected in everyday practices as well as in the school infrastructure, which serves as a practical, everyday demonstration of ecological principles. This creates an immersive learning environment where sustainability is not just taught but lived, making it an often subtle and ubiquitous powerful educational tool.

II. Self-sustained building

The school's self-sustained building and its biotecture design, which includes solar panels, water harvesting systems, and the use of natural and recycled materials, is a distinctive strength. This innovative infrastructure supports the educational aims and as a student said, "Only by walking into the school we are constantly reminded of sustainability and climate change". In this pedagogical approach, the hidden curriculum (Schweisfurth, 2013) highlights the intrinsic interrelation and balance between all natural elements and beings.

III. Location, access to experts and sustainable schools' network

The involvement of local experts, particularly in agroecology, and the support from the NGO Tagma enhance the school's educational proposal. These collaborations provide students with unique learning opportunities and help to maintain the school's sustainability projects, which are integral to its mission. As previous studies show, the school location in a semi-rural area, the voluntary work of experts in the vegetable garden, access to the experience of the NGO who built the school and being part of a sustainable schools network across Latin America are strengths that this educational project benefits from (Posada, 2023).

IV. Flexible curriculum

The absence of standardised testing at the national level allows for greater flexibility in the curriculum, enabling educators to tailor their teaching to the needs and interests of the students. This adaptability supports the emphasis on hands-on, project-based learning, particularly in the areas related to environmental education through the vegetable garden.

Challenges

I. Instability in the educational team

The frequent turnover of headteachers and teachers since the school's inception in 2016 has created instability, which poses a significant challenge to the continuity and consistency of the

educational project. This turnover is exacerbated by national policies that offer the most precarious teachers one-year fixed-term contracts, contributing to a lack of long-term commitment among staff.

II. Maintenance and bureaucracy

The schools' unique design and infrastructure require specialised maintenance, which has proven to be a significant burden for the schools' educational team. The slow response and inadequate support from national authorities in addressing maintenance issues further complicate normal school functioning, detracting from its ability to make use of its sustainable features such as rainwater harvesting and solar energy.

III. High student-to-teacher ratio

The school high student-to-teacher ratio in Grades 1 to 6 is particularly challenging in a multigrade setting. This strain on resources and personnel makes it difficult to provide individualised attention and maintain the quality of education.

IV. Limited political advocacy

Despite its potential as a model of environmental sustainability and its visibility on the national and international stage, the school has not leveraged its position to engage in broader socio-environmental advocacy. The school building and its relative fame in public and international spheres could provide the community with a platform to act in social, political and environmental issues at the national level.

V. Lack of community engagement

While the school benefits from some community and expert involvement, its relationship with the broader community remains limited. Strengthening this connection could enhance the school's impact and support its sustainability goals by fostering greater local involvement and support.

Overall, while School No. 294 is a pioneering institution in environmental education with significant strengths, it faces notable challenges related to stability, maintenance, resource allocation, and political engagement. Addressing these challenges could further enhance its role as a leader in sustainable education and community development.

Based on the analysis carried out, it has become clear that schools, despite their significant differences share strengths and challenges:

Common Strengths

I. Innovative educational approaches and commitment to core values

Each of these schools emphasises innovative educational practices tailored to their specific contexts. Creciendo Juntos (ARG) focuses on political education and social justice, Lozzo Atestino (ITA) prioritises STEM education and alignment with international agendas, and School No. 294 (URY) centres on learning from the surrounding natural environment. Each school shows a deep commitment to its core values. This commitment shapes the school culture and educational outcomes, ensuring that these values are consistently integrated into school practices.

II. Recognition and Reputation

All three schools have gained recognition, either locally or internationally, for their distinctive educational models. This reputation not only validates their approaches but also attracts prospective families, resources, attention, and sometimes partnerships that can further their missions. The recognition they have received in the past years and their commitments to their approaches and values position the schools as leaders in their respective educational niches.

Common Challenges

I. Infrastructure and Resource Limitations

Despite their innovative approaches, all three schools face significant infrastructure and resource challenges. School Creciendo Juntos (ARG) struggles with limited physical space and legal framework, Lozzo Atestino (ITA) experiences disparities between its multiple facilities, and School No. 294 (URY) deals with lack of space and maintenance issues related to its unique biotecture design.

II. Instability in the Educational Team

High turnover rates and instability in the teaching staff are common issues. School Creciendo Juntos (ARG) struggles with teacher retention, while Lozzo Atestino (ITA) and School No. 294 (URY) face challenges related to the contractual instability of its teaching staff. This instability can disrupt the continuity of educational programs and affect student outcomes.

III. Challenges in Community Engagement

While each school has various levels of community involvement, they all face challenges in this area. School Creciendo Juntos (ARG) has a strong connection to its local community but faces political tensions. School Lozzo Atestino's (ITA) geographical isolation limits its community engagement, and School No. 294's (URY) potential for broader political advocacy and local involvement remains underutilised.

IV. Balancing Ideals with Practical Realities

Each school struggles to balance its ambitious educational ideals with the practical constraints it faces. School Creciendo Juntos (ARG) grapples with the tension between its social justice goals and the realities of financial and infrastructural limitations. School Lozzo Atestino (ITA) faces internal resistance to change as it implements its innovative vision, and School No. 294 (URY) must navigate the practical challenges of maintaining a favourable school environment while dealing with power cuts, bureaucratic delays regarding maintenance and high student-to-teacher ratios.

4.7.2 RQ2) How do students and educators perceive sustainability? To what extent is their perception aligned with the school's educational project?

To answer this question, first the educators' perceptions of sustainability are summarised; then, the students' perception based on the photovoice analysis are presented and, finally, these are compared to each educational project.

4.7.2.1 Educators' Perceptions of Sustainability

In the interviews, educators in the three schools have expressed diverse understandings of sustainability. In School Creciendo Juntos (ARG), educators link sustainability with broader social justice goals and community engagement. They tend to refer to questioning the status quo and grounding sustainability to their surrounding community and collective actions, such as cooperatives and commons. For instance:

“We often think about sustainable practices, I don't know, in forms of construction that involve certain materials, right? (...) in the school there has always been a concern for what relates to our environment, not just in terms of natural resources, speaking broadly, right? But also from a local perspective, to what is happening in the neighbourhood”

(Participant_9 ARG).

Educators in this school have emphasised critical perspectives on consumption and production, encouraging students to consider the socio-political dimensions of sustainability, especially in their surrounding community. This aligns closely with the school's broader educational project, which focuses on fostering social consciousness and activism among students. For instance:

“We have a very critical view of the production and consumption system that leads us to think that everything around us as something we can freely use, right? We tend to think of the natural environment as just another product, in a way. And I believe that, in this sense, this school has a perspective of... Well, it's not in that direction, right? Rather, we seek other ways of producing, consuming, and creating that do not involve destructive practices” (Participant_8 ARG).

In School Lozzo Atestino (Italy), educators have described a broad and multifaceted understanding of sustainability, which includes environmental and technological aspects. More often than not, educators referred to actions as individuals, and especially as consumers, when asked about sustainability. For instance:

“I believe that sustainability... is related to the (natural) environment. So, to all those practices or good practices that can be implemented to burden as little as possible... to impact, that is, as little as possible on the environment. It's not just about me as an individual, but about everything that surrounds me: my car, my house, my clothes, my diet. (..) It (sustainability) is very difficult to put into practice today.”
(Participant_2 ITA)

According to interviewees, there is a clear gap between the school's ambitious sustainability rhetoric and its actual practices, particularly concerning waste management and resource use. The school's emphasis on STEM education and alignment with international sustainability goals are not always aligned with everyday practices. They referred to the excessive use of paper for bureaucratic procedures for instance.

In School No. 294 (Uruguay), educators conceptualise and perceive sustainability as an integrated part of the school's daily life and natural environment. They emphasise practical and hands-on sustainability approach, such as maintaining the school's self-sufficient infrastructure and teaching students through direct engagement with nature. This perspective aligns well with the school's focus on environmental sustainability and its mission to foster a deep, practical understanding of ecological principles among students.

4.7.2.2 Students' Perceptions of Sustainability

Students' perceptions of sustainability were obtained through photovoice. Students in the three cases have expressed common themes in their understanding of sustainability, but their perceptions are also shaped by their specific educational environments.

Some photographs show “soft” forms of sustainability (Huckle and Sterling, 1996) such as recycling (e.g. Figure 55) while others show “stronger” forms of sustainability (Huckle and Sterling, 1996) that question systemic structures in place such as the use of traditional technologies for building homes (e.g Figure 64), growing vegetables at home (e.g. Figure 54) and emphasising the concepts of community and commons (e.g. Figure 59).



Figure 54. Photovoice ITA_Photo 31.



Figure 55. Photovoice ARG_Photo 1.



Figure 59. Photovoice ARG_Photo 10.

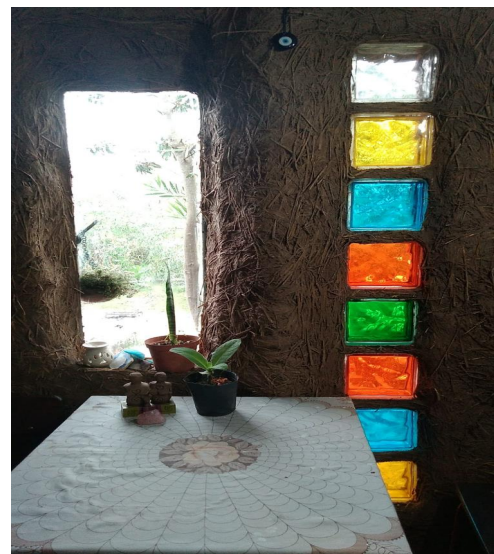


Figure 64. Photovoice URY_Photo 1.

The photovoice analysis has shown that the following common themes could be observed in the students' perspectives of sustainability:

Tamed Nature: Across all three schools, students frequently depicted sustainability - 1 in 4 photos submitted - through images of tamed nature, such as flowers, plants, or trees that have been cultivated or intervened by humans. This seems to indicate that not only students identify nature (trees, plants and flowers) as a key element of sustainability, but also that these natural elements are to be tamed by human beings.

Recycling and Upcycling: Students submitted several photographs that depict recycling, upcycling, and reusing materials. This indicates a shared understanding of sustainability as involving responsible consumption and waste management, a theme that is consistent with global educational priorities on sustainability (Tilbury, 2011).

Community and Sharing: The role of community and sharing was particularly emphasised in School Creciendo Juntos (Argentina) and School No. 294 (Uruguay). Students in these schools submitted photographs that depicted community activities, such as the student-led cooperative in Argentina and the shared community library (Helateca) initiative in Uruguay. This reflects a perception of sustainability that is closely tied to collective action and community involvement, aligning with the community-focused educational projects at these schools.

Growing Food: Growing food was a relatively common theme in the School Lozzo Atestino (ITA) and School No.294 (URY), reflecting the rural or semi-rural settings of these schools where agriculture and food production are more prominent in daily life. This connection to food production highlights a practical understanding of sustainability, rooted in local practices and the immediate environment.

Identity and Family: The role of identity was a significant theme in both School Creciendo Juntos (Argentina) and School Lozzo Atestino (Italy). Students submitted photographs that reflected national identity, such as the national flag, and family reunions, suggesting that they perceive sustainability to be connected to their cultural and social identities. This aligns with the emphasis on social and relational aspects of sustainability in these schools' educational projects.

Political Activity and Public Policy: Students in School Creciendo Juntos (Argentina) displayed a more politically aware perspective on sustainability. For example, they categorised photographs of solar panels taken by Italian students under “public policy,” indicating their understanding that large-scale societal change requires political and policy interventions. This could reflect the school's emphasis on social justice and political engagement as part of its educational mission.

4.7.2.3 Alignment of Educators and Students' views with School Project

This analysis reveals a general alignment between educators' and students' perceptions of sustainability and their schools' educational projects. In the case of School Creciendo Juntos (ARG), the strong emphasis on community, social justice, and political engagement in both educators' and students' perceptions of sustainability aligns closely with the school's educational vision and aims. This suggests a high degree of coherence between the school's mission with the educators' and students' understanding of sustainability as involving collective action and socio-political awareness.

In School Lozzo Atestino (ITA), there seems to be a certain degree of alignment between the school's project emphasis on STEM and the educators and students' perceptions, particularly in their focus on individual action, technological solutions and consumption patterns. However, the gap between the school's sustainability rhetoric and everyday practices, as noted by educators, suggests that this alignment is not fully realised in practice.

Finally, in School No. 294 (URY) educators and students perceive environmental sustainability as an integral part of everyday life and perceive a deep connection to the surrounding natural environment. This is aligned with the school's mission towards environmental education and sustainability. The school's educational practices are closely tied to its self-sustained infrastructure, with activities like vegetable gardening integrated into the learning process. This approach seems to promote a "hidden curriculum" (Schweisfurth, 2013) where the school environment and daily practices teach values and habits related to sustainability that transcend what occurs in classrooms.

In sum, educators and students across the three schools generally perceive sustainability involves nature - albeit tamed by humans -, consumption behaviours, and community engagement, with variations shaped by their specific contexts. The alignment between these perceptions and the schools' educational projects appears to be stronger in settings where sustainability is integrated into both the curriculum and daily practices. However, challenges remain, particularly in fully embedding sustainability into everyday practices where ambitious educational goals sometimes outpace practical implementation.

4.7.3 Sub-question 1) What are the defining characteristics of schools that emphasise critical Global Citizenship Education, and what can we reflect on their educational approaches?

Based on the analysis carried out and on the strengths and challenges of these educational projects, presented in [Research Question 1](#), it is possible to argue that each of these schools has

a strong focus on one aspect of sustainability. O'Brien and Sygna (2013) claim that there are three spheres in which educational processes can have a transformational impact¹⁴:

- Practical: refers to behavioural patterns.
- Political: addresses systemic characteristics and challenges.
- Personal: focuses on cosmovisions, worldviews and values.

The three cases in this study represent three distinct pedagogical approaches i.e. political education, STEM-oriented, and learning from the surrounding natural environment. In theory, each of educational project aims to address the three spheres of transformation in order to provide a safe platform for students to develop as active citizens. Nonetheless, it is possible to argue that each school has a strong focus on only one of the three spheres. It is important to note that there is no inherent hierarchy among these spheres; each plays a crucial role in achieving comprehensive Education for Sustainability (Sterling, 2001).

School Lozzo Atestino (ITA) appears to focus on the practical sphere, offering students advanced training in technology, STEM, and artificial intelligence, which aligns with fostering practical skills for sustainability (Sterling, 2010). In contrast, School Creciendo Juntos (ARG) focuses mostly on the political sphere, emphasising democratic decision-making, fostering student and parent cooperatives, and actively engaging with social and political issues such as the dictatorship and feminist movements. This approach reflects Freire's (1997) pedagogy of hope through critical consciousness and social transformation. Recent studies argue that there is a need to politicise - science - education in order to provide affective and socioemotional tools that students require in order to navigate complex social, political and environmental crises (Svarstad *et al.*, 2023).

School No.294 (URY) emphasises a deep connection with their surrounding natural environment through its eco-centric infrastructure and vegetable garden, promoting a worldview of interconnectedness between all living beings, which aligns with principles of ecological literacy and biophilia (Orr, 2004).

These educational projects aim at the complex task of providing scaffolding towards sustainability and active citizenship, hence the need to simultaneously address the three spheres. This implies a personal and collective transformation process. However, not all

¹⁴ Further explanation of each of these spheres has been provided in the [Spheres of Transformation](#) section in the Literature Review chapter.

transformations occur at the same level. Sterling (2010) has classified three levels of transformative learning:

- Conformative: is cognitive and focuses on doing things better.
- Reformative: develops at the meta-cognition level and focuses on doing better things.
- Transformative: focuses on epistemic learning and seeing things differently.

<i>Orders of change/learning</i>	<i>Seeks/leads to:</i>	<i>Can be labelled as:</i>
First order change <i>Cognition</i>	Effectiveness/Efficiency	“Doing things better” Conformative
Second order change <i>Meta-cognition</i>	Examining and changing assumptions	“Doing better things” Reformative
Third order change <i>Epistemic learning</i>	Paradigm Change	“Seeing things differently” Transformative

Figure 90. Levels of learning (Sterling, 2010) as cited in (Laininen, 2019).

Sterling (2010) describes first-order learning or change as continuing with established practices without questioning the underlying assumptions or values. This type of learning, common in formal education systems, focuses on reinforcing existing paradigms rather than challenging them. Sterling (2003) likens this to “missing the forest for the trees,” where learning occurs within the confines of the current paradigm. Second-order learning involves a deeper, critical examination of beliefs, values, and assumptions, allowing for the possibility of change. This approach is akin to stepping back to view the forest as a whole and recognising alternative paradigms (Sterling, 2010). Third-order learning, or epistemic learning, goes a step further, involving a fundamental shift in the way individuals perceive and interact with the world (Clayton, 2003). Sterling (2003) suggests that this level of learning allows individuals to see that multiple forests or paradigms exist and that they can choose among them, representing a meta-paradigmatic perspective.

It can be argued that each school has achieved - or is actively working towards - second-order learning within at least one of the spheres of transformation. School Lozzo Atestino (ITA) has demonstrated considerable progress in the practical sphere, School Creciendo Juntos (ARG) in the political sphere, and School No. 294 (URY) in the personal sphere.

In the remaining two spheres, each school is currently engaged in first-order changes. Ideally, educational institutions should aim for profound epistemic learning that encompasses all spheres of transformation. However, it is natural for schools to initially focus on and master one specific

sphere before extending their efforts to others. Given the inherently complex and interconnected nature of these spheres, which encompass behaviours, political structures, and worldviews, advancements in one area are likely to stimulate higher levels of learning and transformation in the others. Positive changes in one sphere can lead to transformations in the others, though certain interventions may prove to be more effective in driving change across multiple spheres (Sharma, 2007).

4.7.4 Sub-question 2) What is the relationship between the context in which the project is immersed and its critical Global Citizenship Education practices?

The findings of this study indicate that there is an interdependent relationship between the context in which an educational project or school is situated and its critical Global Citizenship Education practices. In other words, the surrounding context significantly influences and, to some extent, shapes the educational project, while the school itself possesses the potential to transform the context in which it operates. This dynamic became particularly evident in two specific instances. First, since 2016, School No. 294 (URY) has been actively engaged with the community through its vegetable garden initiative. A survey conducted by the school revealed a significant increase in the number of families with home vegetable gardens, rising from 15% in 2016 to 85% by 2020 (Posada, 2024), with this trend continuing to grow. To further support this development, the school has organised events where families can exchange seeds, thus demonstrating the school's interest and influence in transforming its surrounding community. The second example concerns School Creciendo Juntos (ARG), which has been involved in various political struggles since its inception. One of the most recent ones is a notable case of illegal fumigation near school premises in a distant province (Participant_5 ARG). This incident, which tragically led to a teacher developing cancer and subsequently passing away, occurred despite a national ordinance prohibiting fumigation within 2000 metres of schools. In response, students launched awareness campaigns and produced radio programs to raise public awareness of the issue, highlighting the school's role in addressing and amplifying critical socio-political concerns.

Beyond these specific examples, it is clear that there is a profound influence between each school's educational project and its surrounding community. School Creciendo Juntos (ARG) being a paradigmatic example considering it was founded and built by politically active community members who sought to address local educational shortages by organising themselves and providing a tangible solution. This commitment to address social justices through collective action remains to this day a cornerstone of the school's educational philosophy and practices. On a similar vein, School Lozzo Atestino (ITA), a large public school situated in an industrialised and affluent region of Italy, reflects the community's and national authorities' strong emphasis on STEM education. The underlying concept of progress in this context is understood to be driven by

- hard - sciences and industrial development. Last but not least, the decision to build School No. 294 (URY) as a self-sustaining biotecture structure was made by NGO Tagma. National authorities decided on its location without direct community input, and the reasoning behind this choice remains unclear (Posada, 2023). However, since its foundation in 2016 the school has attracted families who share its ideals of sustainable living, including building their own homes using biotecture techniques, cultivating vegetable gardens, who aim to live in harmony with their surrounding natural environment. As a result, the school's influence on the surrounding community has been profound, even reshaping its composition.

Regarding the close-knit relations between the schools and their surrounding context, there was one question in the survey which had little agreement (i.e. high variance) between students in the three schools and offers interesting insights:

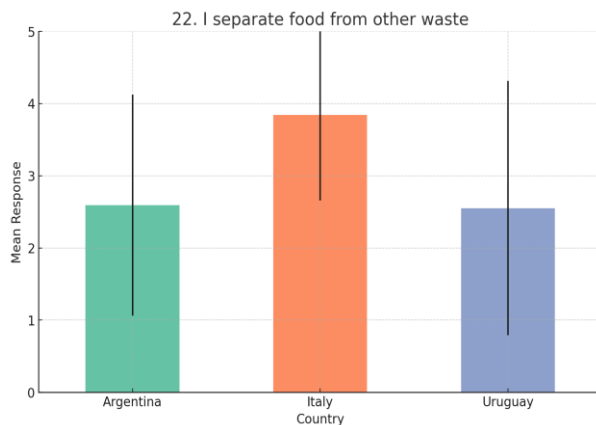


Figure 26. Question 22 variance.



Figure 91. Question 22 data distribution.

Question 22: “I separate food from other waste” had the highest variance between cases (0.54). The mean in Italy, 3.84, was significantly higher than Argentina, 2.6, and Uruguay, 2.55. When analysing the data distribution (see Figure 91), there is an interesting polarisation. Students in School Lozzo Atestino (ITA) generally agreed or strongly agreed with the statement. However, over 40% of students in Uruguay strongly disagreed with the statement while 30% strongly agreed. Similarly, over 30% of students in School Creciendo Juntos (ARG) strongly disagreed with the statement while 20% strongly agreed. This seems to indicate that the practice of separating food waste is not widespread practice in the school communities in Argentina and Uruguay.

In the region where School Lozzo Atestino (ITA) is located, waste classification at home is a well-established practice. Households are provided with specific bins by the municipality, and organic waste, along with plastic, paper, and glass, is regularly collected. In contrast, this is not the

case of the municipalities where School Creciendo Juntos (ARG) nor School No. 294 (URY) are located. In these contexts, public waste management systems do not provide separate bins for diverse types of waste, nor in the schools nor in the surrounding community. While specific bins for plastic waste are available in some neighbourhoods, they are scarce and distant, making it difficult for families to effectively separate their plastic waste. Consequently, it is not surprising that students from School Creciendo Juntos (ARG) and School No.294 (URY) reported lower engagement in waste management practices compared to their Italian counterparts.

Given this socio-political context, School Creciendo Juntos (ARG) and School No. 294 (URY) could focus on enhancing their efforts in waste management. These schools could not only promote waste classification practices within the school environment but also actively encourage families to adopt these practices at home. Furthermore, the schools could play a pivotal role in advocating for public policy regarding waste classification systems by the local authorities. This initiative could provide students with the opportunity to apply the skills they have acquired through their educational experiences and to exercise their rights as active citizens by influencing local governance and promoting sustainability at a broader level.

4.7.5 Sub-question 3) How do students perceive their futures? What are the general sentiments expressed in their narratives about their own future lives?

Students were asked to share their perspectives on their futures both through their self-narratives and in the survey. In the workshops, they responded to the prompt “What will your life be like in 2042? What will your community look like? What changes do you anticipate compared to our lives today?” using self-narratives in the form of stories, drawings, and poems.

Findings revealed several common themes across their responses: i) technological and futuristic visions were prevalent among students, reflecting a focus on advancements and innovation; ii) environmental concerns were prominent, with many students expressing eco-anxiety and solastalgia; iii) career aspirations frequently included a desire to migrate, suggesting a perceived lack of opportunities within their current contexts; iv) their outlook on global futures was notably pessimistic, particularly regarding biodiversity loss and broader ecological issues. These shared views about their futures highlight a collective sense of uncertainty and apprehension among the students. Figures 92 and 93 exemplify such feelings:



Figure 92. Student self-narratives ITA_NA_94.

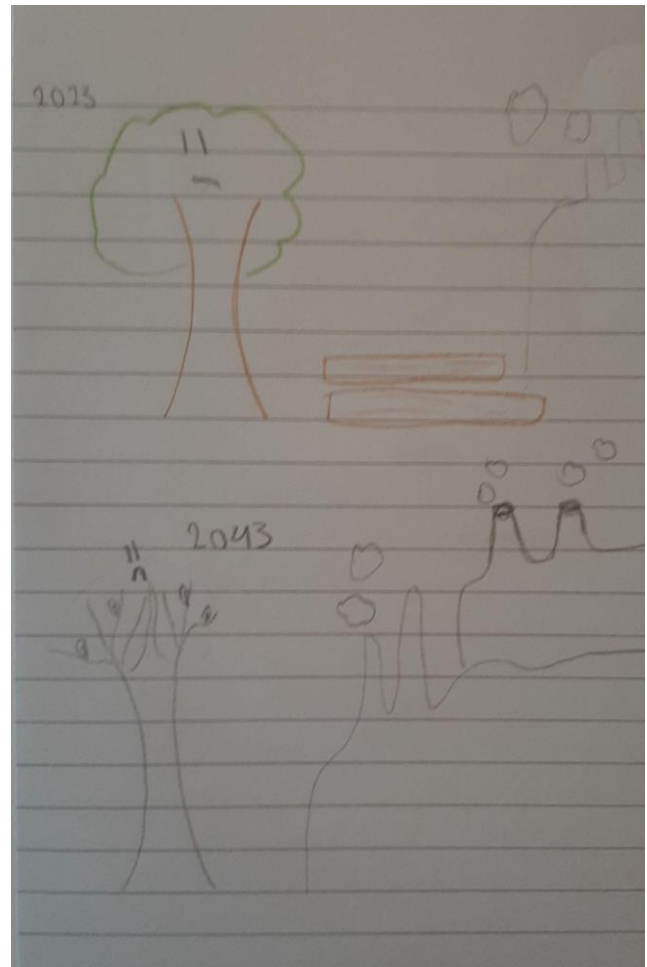


Figure 93. Student self-narratives ARG_NA_36.

The analysis of students' self-narratives revealed a prevalent sense of pessimism among the participants. While students from School Lozzo Atestino (ITA) often expressed a dual outlook on the future, envisioning either positive or negative potential outcomes, students in School Creciendo Juntos (ARG) expressed a particularly negative perspective. Many cited economic challenges, such as high inflation rates, and some even envisioned themselves as deceased in 20 years. In School No.294 (URY), students voiced serious environmental concerns and expressed a general intention to migrate in pursuit of better career opportunities.

Students' bleak outlook of the future and eco-anxiety (Pihkala, 2020) was also noticed in survey responses. This is in line with a large-scale survey conducted in 10 countries with 10,000 children and youth aged 16-25 that found that 75% of participants are afraid of the future (Hickman *et al.*, 2021). As it can be observed in Table 9 below, students tended to strongly agree with Question 46 "Human beings are mistreating the environment enormously" and Question 53 "If things continue this way, we will soon experience a major ecological catastrophe", while they tended towards a neutral view in Question 51 "Question Human intelligence and skills will ensure that we do not ruin the Earth".

Question Number	ARG Mean	ARG Std Dev	ITA Mean	ITA Std Dev	URY Mean	URY Std Dev	Variance
46	4.4	0.8	4.18	1.09	4.35	1.09	0.02
51	3.5	1.31	3.49	0.97	2.9	1.21	0.12
53	4.38	0.79	4.18	0.86	4.3	0.98	0.02

Table 9. Students' mean answers in three survey questions.

The prevalence of eco-anxiety and solastalgia among students, as reflected in their narratives and survey responses, is indicative of a broader psychological response to the growing socio-environmental crises. Eco-anxiety, characterised by chronic fear of environmental doom, is becoming increasingly common among young people, who are acutely aware of the deteriorating state of the planet (Pihkala, 2020). Similarly, solastalgia, which refers to the distress caused by environmental change and the loss of familiar landscapes (Albrecht *et al.*, 2007), resonates with the students' bleak outlook on the future.

Blunden's (2016b) conceptualisation of perezhivanie highlights the lived experiences of individuals and in this case, their negative affective states related to solastalgia, and their future are relevant. This framework provides a useful way of theorising collective perezhivaniya i.e. common affective experiences that require living and reflecting differently based on contextual circumstances. The sense of loss and anxiety about the future can have profound effects on their mental health and overall well-being of young people. The fact that students from diverse socioeconomic contexts in the Global North and South, both urban and rural, share these concerns highlights the global nature of these issues and the deep psychological impact they have on the younger generation.

Schools play a crucial role in shaping students' perceptions of their futures, and they can actively engage in addressing the emotional and psychological aspects of the socio-environmental crises. While providing factual information about the climate crisis and ecological degradation is essential, it is even more important for schools to create spaces where students can process their emotions. Studies have shown that integrating emotional education in educational practices, particularly through practices like mindfulness and open discussions about eco-anxiety, can help individuals manage their fears and anxieties (Wamsler, 2018).

Furthermore, schools can foster a sense of agency by involving students in local socio-political-environmental projects, which can provide them with the possibility to make tangible

contributions to their communities and see positive change. By doing so, schools not only provide an opportunity to connect students with their surrounding communities and natural environment but also provide scaffolding with emotional tools needed to navigate uncertain futures in a collective manner, with hope and determination. Encouraging hope, dreaming and utopian thinking, thus not focusing only critical thinking and problem-solving skills, can also help students envision alternative futures where they play an active role in addressing global challenges. Through collective and tangible actions, schools have the potential to transform negative feelings into hope, based on positive lived experiences thereby guiding students to become active citizens who engage in political struggles to improve their realities.

4.8 Conclusion

This chapter has explored how the three schools participating in this study provide scaffolding to students' understanding and development of sustainability competences through diverse pedagogical approaches, ranging from political education to STEM-oriented learning and experiential engagement with the natural environment.

The findings of this research indicate that students in the three cases share common concerns about environmental degradation, eco-anxiety, and the impact of human activities on the natural world. However, their views differ. For instance, students in School Lozzo Atestino (ITA) tend to adopt a more pragmatic approach, focusing on individual actions and technological “solutions”, while students in School Creciendo Juntos (ARG) are more politically engaged, viewing sustainability as a socio-political issue that requires collective action.

Educators' perceptions of sustainability mostly align with their schools' educational projects, although challenges remain in fully integrating sustainability into everyday practices, particularly in contexts where resources and community engagement are limited. In all cases, schools serve as both a mirror and a catalyst for change, reflecting the concerns of their communities while also shaping students' attitudes and behaviours towards sustainability.

In summary, this chapter underscores the importance of context in shaping both educational approaches to sustainability and students' perceptions of their roles in addressing global challenges. The findings highlight the need for educational practices that are adaptable, contextually grounded, and focused on fostering critical, engaged, and active citizens.

5. Discussion

5.1 Introduction

This chapter examines the strengths and limitations of the research and discusses with critical themes that emerged from the study. This chapter starts by addressing the quality of the research design by evaluating it against three criteria as suggested by Creswell and Miller (2000): disconfirming evidence, prolonged engagement in the field, and thick and rich descriptions. Additionally, the chapter explores the practical implications of the findings of this study in relation to collaborative storytelling, pedagogical and epistemological models. By emphasising collaborative learning strategies such as digital narratives and *perezhivanie* (Renshaw, 2021), the chapter also addresses the emotional dimensions of learning in the context of education. In this way, the discussion connects the theoretical frameworks of sustainability with the practical realities faced by students and educators across different schools.

This chapter starts by exploring the research validity and limitations. It then introduces the relevance of a collaborative storytelling blended course for educators. That is followed by a reflection on *perezhivanie* in relation to the findings of this research. Then, issues and potentialities of sustainability are discussed, including its inherent contradictions. Then, philosophical and policy implications are presented such as where sustainability originates in each of these schools, and how that relates to school governance, autonomy and leadership. Then, pedagogical and epistemological considerations are described such as a critique to student centred learning (SCL) and the possibilities of *Buen Vivir* for alternative ways of living - and learning.

The chapter then introduces the Critical Transformative Ecopedagogy (CTE) framework, a unified pedagogical approach that synthesises the strengths of various educational theories from a *Buen Vivir* perspective to promote a more just and habitable planet. Through this lens, education is framed as both a pedagogical and political project, requiring a deep understanding of interconnected socio-environmental systems and a commitment to transformation both at the individual and collective levels.

5.2 Research validity and Limitations

In this study, several strategies were employed to increase its validity, reliability and credibility. Additionally, limitations are acknowledged and discussed to offer a nuanced perspective of the rigour and scope of this study.

5.2.1 Disconfirming Evidence

In this study, evidence was disconfirmed by through the use of data triangulation (Denzin, 2009), where multiple data sources, such as surveys, self-narratives, photovoice, interviews, and participant observations, were employed to capture different dimensions of students' and educators' perceptions. Triangulation ensures that the findings are not the result of a single method or measure but are supported by different forms of data, enhancing the robustness of the study's conclusions. For example, eco-anxiety, a central concept in this research, was explored qualitatively through self-narratives and quantitatively through the survey, aligning with Creswell and Plano Clark's (2018) recommendation for mixed-methods approaches to achieve deeper understanding and validation of constructs.

Additionally, the use of member checking (Creswell and Miller, 2000) in interviews with educators helped verify the accuracy of the interpretations. Moreover, the photovoice activity with students included a reflection in which they described and categorised their own photographs. Both of these steps were vital in enhancing the authenticity and credibility of qualitative data and has been highlighted as a best practice in qualitative research for improving construct validity (Lincoln and Guba, 1985).

The decision to use a reflexive thematic analysis for the students' self-narratives and photovoice activity (Braun and Clarke, 2022) also contributes to disconfirming evidence by systematically identifying and reframing themes that are consistent with the study's theoretical framework. This analytical method allows for a rigorous exploration of student narratives, ensuring that key concepts, such as sustainability and eco-anxiety, are represented across different data types.

5.2.2 Prolonged Engagement in the Field

In this study, fieldwork was conducted from September 2022 until December 2023. This included at least 2-3 months spent in each of the school communities. During that period of prolonged engagement, trust was developed with participants and key gatekeepers were identified and approached. This allowed for building relationships that enabled candid sharing and dialogue. This favoured testing initial interpretations, cross-checking findings from the diverse methods with observations and refining assumptions (Creswell and Miller, 2000). Moreover, this prolonged engagement offered the possibility for a deeper understanding of each of the school contexts and actors, which was important for the data analysis process.

5.2.3 Thick and Rich Descriptions

Even though this is not an ethnographic study, the descriptions offered in Chapters 3 and 4 of each school contexts are rich in detail, layered and vivid. The aim was to offer the reader a closer feeling to the schools, so that the findings of this study are interpreted in that light.

These descriptions were also made in order to increase the external validity of the study, which pertains to the extent to which the findings of a study can be applied or generalised to broader contexts beyond the particular research environment (Yin, 2018). Given that case study research often aims for analytical rather than statistical generalisation (Flyvbjerg, 2006), this study sought to develop broader theoretical insights into critical education through a detailed comparison of three different educational models: political education, STEM-oriented pedagogy, and learning from the surrounding natural environment. This approach emphasises the potential of case studies to generate profound insights by situating findings within a broader theoretical framework.

This study does not claim broad statistical generalisation, but rather it contributes to theoretical discussions, based on empirical evidence, on education and sustainability by applying analytical frameworks such as O'Brien and Sygna's (2013) three spheres of transformation and Sterling's (2010) levels of transformative learning. These frameworks allow the findings to be situated within a global discourse on critical and transformative education, providing a basis for future comparative studies in different contexts.

Moreover, the selection of schools from diverse contexts in Argentina, Italy, and Uruguay, enhances the potential for cross-cultural insights. While these schools differ in terms of educational approaches and local contexts, the focus on their common goal of fostering sustainability competences makes the findings relevant to a wider audience. In this regard, the detailed descriptions of each school's educational philosophy and practices make the findings accessible for broader application in educational research.

5.2.4 Reliability

Reliability is often defined as the degree of consistency and replicability of research procedures (Yin, 2018). In this case, reliability was sought through the development of a detailed research protocol. The survey, interview guides, and workshops were meticulously documented to allow future researchers to replicate the study's methodology (see [Annex I](#), [Annex II](#) and [Annex X](#)). This aligns with Bryman's (2016) recommendation to enhance reliability by documenting every stage of the research process.

The coding and analysis of qualitative data followed well-established procedures for thematic analysis (Braun and Clarke, 2022). The involvement of an additional researcher in the coding process led to discussions that became essential to understand the reasons behind conflicting interpretations (O'Connor and Joffe, 2020), as any discrepancies were discussed and resolved through a consensus-building process.

5.2.5 Limitations

Despite the efforts to enhance the validity and reliability of this study, several limitations must be acknowledged. First, the survey sample size of 107 respondents limits the statistical power of the quantitative findings, particularly when analysing subgroups, such as gender differences or cross-school comparisons. A larger sample size would have provided more robust statistical evidence, particularly for identifying patterns that may only emerge in larger populations (Creswell and Plano Clark, 2018).

Second, the study relies heavily on self-reported data, which can introduce bias such as social desirability (Podsakoff *et al.*, 2003). Students and educators may have felt compelled to provide responses they believe align with the researcher's, societal or school expectations, particularly regarding sustainability, which is often framed as a moral or ethical issue. This limitation could be mitigated in future research by incorporating larger datasets - i.e. conducting several photovoice and narrative activities with the same group over time - or expanding observational participatory methods.

Another limitation relates to the study design which captures students' and educators' perceptions at a single point in time. This approach does not account for changes in perceptions or behaviours over time. Longitudinal studies would provide deeper insights into how students' views and actions towards social and ecological crises may vary through their schooling years (Tashakkori, Johnson and Teddlie, 2020). Moreover, other significant actors from the school community such as parents were not included in the study. Their perspectives could add a relevant additional dimension to be taken into when discussing sustainability competences and ways of living and being in the world.

From a methodological standpoint, an identified limitation in the use of the photovoice method was time constraint. In hindsight, it would have been interesting to add a round of interviews with students after the photovoice activity as well as organising a public exhibition in which they could share their work with their communities. This was partly due to logistical constraints of conducting fieldwork in three countries. To compensate for this, members of the educational

team were sent the photographs submitted by students and a synthesis of the photovoice analysis with the recommendation that it be used for community outreach.

In conclusion, while this study offers valuable insights into education focused on social, political and environmental issues across different contexts, its findings are shaped by the methodological choices and limitations described. Future research could build on this work by addressing these limitations, thereby employing larger sample sizes, and exploring the long-term impacts of through longitudinal designs.

5.3 Collaborative Storytelling

Collaborative storytelling and participatory approaches can deepen students' connection to their communities and foster agency in addressing sustainability issues. Studies have shown that storying climate change through creative media enhances students' understanding of climate issues and increases their sense of agency (England *et al.*, 2019) and that photovoice can strengthen climate change awareness and promote youth-led community action (Trott, 2019).

A blended course on digital narratives (i.e. including in-person and online components) focused on collective and individual methods such as photovoice or students' self-narratives, holds significant potential for schools that aim to address social, political, and environmental issues, particularly to ground pedagogical practices of Global Citizenship Education to their territories. By promoting place based pedagogical practices, digital narrative tools provide educators with innovative methods to engage students in reflective, critical, and action-oriented learning, making them suitable for fostering sustainability competences.

5.3.1 Enhancing Critical Reflection and Civic Engagement

A course on digital narratives can equip teachers with the skills to guide students through the process of documenting and reflecting on their communities and environments. Digital storytelling has been shown to foster critical thinking and civic engagement, offering a pathway for students to link personal experiences with broader social, environmental, and political issues (Lundby, 2018). In schools such as Creciendo Juntos (ARG), where political activism and social justice are central to the pedagogical approach, photovoice offers a platform for students to visually capture and analyse socio-political and environmental issues they encounter on a daily basis (Wang and Burris, 1997).

Through these narratives, students can connect classroom learning with real-world problems, reinforcing their roles as citizens and political actors. As the findings from this study show,

students in Creciendo Juntos (ARG) were particularly adept at connecting photographs of solar panels with public policy and political action, reflecting the school's emphasis on activism. A blended course on digital narratives would further enhance this alignment by providing teachers with strategies to deepen students' critical engagement through narrative-driven inquiry and advocacy (Freire, 2002).

In School Lozzo Atestino (ITA), which places a strong emphasis on STEM education and innovation, a blended course focused on digital narratives could serve as a tool to bridge technological skills with social, political, and environmental awareness and action. Research shows that integrating digital narratives into STEM education encourages students to explore the human and ethical dimensions of technology (Sadik, 2008). While this school excels in equipping students with technical competences, the findings suggest that students tend to view themselves as consumers rather than political actors. Incorporating photovoice or similar digital narrative techniques can encourage students to critically examine the technological innovations they study in the classroom and reflect on their broader social and environmental impacts (Huckle and Sterling, 1996). By integrating critical and creative approaches like digital storytelling into the STEM curriculum, educators can foster a more holistic understanding of sustainability that goes beyond technological solutions to include ethical and societal dimensions (McLoughlin and Lee, 2007).

At School No. 294 (URY), where the connection to the natural environment is central to the school project, a blended course on digital storytelling could amplify students' personal reflections by integrating emotional and cognitive dimensions. Digital narratives offer a powerful way for students to document their interactions with their territories and their community practices, such as seed exchanges and vegetable gardening (Butschi and Hedderich, 2021). These narratives can serve not only as a learning tool but also as a means of community advocacy, reinforcing the connection between school practices and local environmental activism (Gruenewald, 2003b).

5.3.2 Fostering Collaboration and Intercultural Exchange

Digital narratives also encourage collaboration and the development of shared narratives within and across school communities. Photovoice, for instance, allows students to work together on projects that document and reflect on their lived realities in their communities. The collaborative storytelling process deepens students' connection to their community, fostering a sense of collective responsibility and agency in tackling sustainability issues (Gubrium and Harper, 2013). This approach is particularly relevant for schools engaged in critical GCE, as it

not only fosters personal and collective reflection but also empowers students to act upon their reflections, thereby aligning with the goal of transformative education (Sterling, 2010).

One of the benefits of digital narratives, particularly photovoice, is that schools can connect students from different contexts and foster collective international storytelling. This could serve as a 21st century update of Freinet's inter-school correspondence. These digital narrative practices can be analysed through the lenses of dialogical education (Meijers and Hermans, 2018), thereby evaluating the transformative potential of educational practices in relation to discourse analysis while also taking into account the role of digital platforms and social media in shaping the contours, enhance and complicate the process of conceptual change (Salas and Larrain, 2024).

Three findings from this study offer concrete examples of how cultural exchange between schools could be beneficial. First, survey results revealed that students across the three schools shared a keen sense of environmental integrity, consistently opposing the idea of clearing nature, such as cutting down trees, for infrastructure development. This common ground could serve as a basis for exchanges focused on local actions to protect their natural surroundings from destruction.

Second, these school exchanges can also help challenge myths or metanarratives that do not align with local realities. For example, majority of students at School No. 294 (URY) and School Lozzo Atestino (ITA) believe that the Earth is overpopulated, even though their semi-rural contexts - and the country's population of only 3.5 million people in the case of Uruguay - contradict this belief. Digital narratives and school exchanges could provide a platform for educators to address such misconceptions. A similar approach could be applied for complex matters such as migration. In School Lozzo Atestino (ITA) some students expressed concerns about a "migration crisis" despite these fears not necessarily reflecting the reality of their local or national local context. Through these exchanges, educators can guide students in critically examining and reshaping narratives that may be out of step with their environment. Collaborative digital storytelling can be a powerful methodology to work with social and political issues such as empathy, inclusiveness, and interculturality. As noted in [section 4.7.1.2](#), these are pressing challenges that the school is facing. These storytelling methodologies offer the possibility of transcending the classroom and creating dialogue with the surrounding community.

Third, these cultural exchanges could offer insights on how to address inherent contradictions related to sustainability. For instance, the survey has shown that students believe that other living beings have as much right to live as humans, but they do not try to avoid eating meat to

respect animal life. This is fertile ground for these practices. By engaging with other school communities, students might explore their own contradictions and find alternative ways of being that are more aligned with their values.

By fostering critical reflection, emotional engagement, and collaboration across schools and contexts, digital narratives support the development of local and global sustainability competences. This approach offers an opportunity to deepen teachers' and students' understanding of sustainability, address emotional challenges such as eco-anxiety, and foster a sense of shared responsibility and agency.

5.4 Perezhivanie

Perezhivanie is a concept derived from cultural-historical psychology and refers to the complex, lived emotional experience that integrates cognitive, affective, and contextual elements as individuals navigate significant life events or challenges (Vygotsky, 1994; Renshaw, 2021). In educational settings, perezhivanie provides a lens through which we can understand how students emotionally and cognitively process their learning experiences, particularly in response to challenging or complex issues like sustainability.

Perezhivanie is integral to how students engage with and make sense of their educational experiences. It involves an interaction between the individual's internal emotional responses and the external environment, resulting in a unique, personal experience of learning (Blunden, 2016a). This concept is particularly relevant in the context of Global Citizenship Education, where students are often confronted with distressing information about socio-economic inequalities, environmental degradation, and the climate crisis. The emotional impact of these topics can lead to feelings of eco-anxiety, despair, and pessimism, as identified in this study.

Renshaw (2021) emphasises that perezhivanie is not merely about experiencing emotions but about how these emotions are integrated with cognitive processes to create meaning. For instance, students who exhibit eco-anxiety are not only feeling anxious but are also engaging in deep cognitive reflection about the future of the planet, their role in it, and the adequacy of societal responses to environmental crises (Ojala, 2012). This emotional-cognitive integration is crucial for developing a nuanced understanding of sustainability issues and for motivating students to act.

In the context of education, perezhivanie can be seen as a key factor in connection to sustainability competences. These competences, which include critical thinking, systems thinking, and the ability to reflect on one's actions and values, require students to engage both

emotionally and cognitively (Wiek, Keeler and Redman, 2011). The deep, personal engagement that *perezhivanie* fosters can help students internalise concepts, making them more likely to adopt sustainable practices and advocate for systemic change.

Research suggests that when students experience *perezhivanie*, they are more likely to undergo transformative learning - a process where one's perspective is profoundly changed, leading to new ways of understanding and interacting with the world (Mezirow, 1997). Transformative learning is particularly important in sustainability focused education, where the goal is not only to address knowledge but to fundamentally change how students perceive and engage with the world around them (Sterling, 2010).

Moreover, educators should be aware of the cultural and contextual factors that shape *perezhivanie*. The way students experience and process social, political and environmental issues is influenced by their socio-cultural backgrounds, personal histories, and the specific environmental challenges they face in their communities (Vygotsky, 1994). However, the strong emotional responses elicited by sustainability focused education can also pose challenges. For instance, feelings of despair or hopelessness can hinder students' ability to engage productively with social, political or environmental issues (Hicks, 2014).

Engaging with and understanding *perezhivanie* allows educators to recognise these emotional barriers and to provide appropriate support, helping students to navigate their emotions and continue their learning journey. Educators can leverage the concept of *perezhivanie* by creating learning environments that acknowledge and validate students' emotional responses. This could involve incorporating reflective practices, where students have the opportunity to express and process their emotions. Such practices not only support emotional well-being but also deepen cognitive engagement, leading to a more holistic and transformative educational experience (Zembylas, 2014).

In School Creciendo Juntos (ARG), *perezhivanie* manifests as students and educators navigate the complex emotions associated with political activism, such as the frustration of confronting social injustices, the pride of achieving collective goals, or the tension that arises from differing political views within the school community. These emotional experiences are not just incidental but integral to the learning process, helping students to internalise the values of social justice and activism. By engaging with these emotions, students develop a deeper understanding of their role as agents of change, and this understanding is grounded in both cognitive reflection and emotional engagement.

The challenges faced by the school, such as political tensions and conflicts within the educational team, can also be understood through the lens of *perezhivanie*. The emotional toll of political activism, the pressure to conform to the school's ethos, and the potential for burnout among educators are contributing factors to the complex emotional landscape that students and educators navigate. Understanding these challenges as *perezhivanie* highlights the need for emotional support and reflection within the school, ensuring that the emotional experiences of students and educators are acknowledged and integrated into the educational process.

At School Lozzo Atestino (ITA) *perezhivanie* might involve the excitement and satisfaction of mastering modern technologies, the stress or anxiety associated with the rapid pace of technological change. These emotions are intertwined with the cognitive processes of learning STEM subjects, as students are required to adapt quickly, think critically, and apply their knowledge in practical contexts. The innovative leadership of the school, while a strength, can also contribute to a sense of pressure among students and educators to continuously improve and innovate, which can be both motivating and overwhelming.

Furthermore, the incident during a workshop described in [section 4.6.2](#) showed how, through simple participatory activities, one can make visible contradictions in young people's attitudes and values. Certain contradictions arose during the workshop which initiated a difficult set of interactions that seemed to be productive for groups of students in the class. Students began to thread together complex ideas about racism, migration, and empathy. Some students even apologised after the workshop. This shows that emotions had been triggered and personal repair work was required. This incident was also a clear example of the personal-political interface where seemingly abstract or distant social issues such as migration and refugees are transformed into moments of personal encounters i.e. students meet a researcher who happens to be an immigrant and who challenges their assumptions through his own lived experience. Becoming literate with modern technologies does not translate into sustainable living unless young people become committed to changing how they relate to one another, thus how they think and act.

The vertical governance structure of the school, where decisions are often made hierarchically, can also influence the *perezhivanie* of students and educators. This can create feelings of disempowerment or disconnect among those who feel excluded from the decision-making process. This contrasts with the democratic values that *perezhivanie* might foster, where emotional engagement is linked to a sense of agency and participation.

At School No.294 (URY) the *perezhivanie* of students involves a profound emotional connection to the natural world, characterised by a sense of responsibility, wonder, and often concern for the environment. This emotional engagement is crucial in fostering a deep understanding of ecological principles and the importance of environmental sustainability. For instance, students' involvement in activities such as seed exchanges with their families not only enhances their knowledge of agroecology but also strengthens their emotional ties to their community and the land.

However, the challenges faced by the school, such as instability in the educational team and maintenance issues, can disrupt the positive *perezhivanie* that the school aims to foster. The emotional strain of dealing with bureaucratic obstacles and the frustration of seeing sustainable features underutilised due to maintenance issues can affect both students and educators. These challenges highlight the need for a supportive environment that acknowledges and addresses the emotional aspects of sustainability education.

Incorporating *perezhivanie* into pedagogical practices requires a shift from traditional teaching methods to approaches that prioritise emotional engagement and reflection. This could involve the use of narrative methods, such as photovoice, storytelling or role-playing, where students can explore sustainability issues through the lens of personal and emotional experiences. By engaging with these narratives, students can develop a deeper, more empathetic understanding of sustainability challenges, leading to more meaningful learning outcomes (Fisher, 2013).

5.5 Sustainability: issues and potentialities

The term *sustainability* has become ubiquitous in discourse surrounding environmental, economic, and social issues and its widespread use has led to significant dilution of its meaning. It is imperative to note that peace is a necessary step for any type of social, political or environmental sustainability effort, but calling for a “sustainable ceasefire”¹⁵ is a perfect example of what is wrong with the use of this polysemic term. Sustainability, unfortunately, is often reduced to the notion of continuity rather than addressing the deeper ontological and epistemological issues that intersect social, political and environmental realities.

In educational settings, this concept also risks being oversimplified or misinterpreted. Often, definitions of sustainability as only focused on environmental issues or “things that sustain themselves over time” indicate a broad, albeit shallow, understanding; one that touches on

¹⁵ A headline in *The Guardian* on December 23, 2023, referred to the Israel-Gaza war and the call for a “sustainable” ceasefire: [Israel-Gaza war: UK and Germany call for ‘sustainable’ ceasefire | Gaza | The Guardian](#)

various aspects but lacks the depth necessary for meaningful engagement with the concept (Sterling, 2010).

5.5.1 Inherent Contradictions

Individuals often face inherent contradictions when grappling with sustainability issues, particularly in relation to their ethical responsibilities toward other living beings, whether human or non-human. For example, in this study students overwhelmingly agreed that “other beings have as much right to live as human beings” (Survey Question 41). However, a significant majority also reported that they do not avoid eating meat out of respect for animal life (Survey Question 25). This contradiction highlights the cognitive dissonance many individuals experience when their values do not align with their behaviours, a common issue in sustainability oriented education (Ojala, 2012). This gap between understanding and action suggests a need for more integrative educational approaches that encourage students to reconcile these contradictions.

Findings of this study have shown that a recurring theme in the understanding of sustainability is the concept of “tamed nature”, both in students and educators. This reflects a broader cultural assumption rooted in Eurocentric thought, where humans are seen as separate from and superior to the natural world (Battiste, 2017). Marie Battiste, a Mi’kmaq scholar, reminds us that this dualistic thinking - where humans are positioned at the centre and the top of a hierarchy - permeates our language, social practices, and educational systems (Jickling *et al.*, 2018). This worldview reinforces the idea that nature exists to be controlled and used by humans, which, in this research, became evident in how students frequently depicted sustainability through images of plants, trees and landscapes either tamed or intervened by human beings.

Critics of this anthropocentric perspective argue that education must go beyond teaching students to manage natural resources responsibly. It must also challenge the underlying assumptions that perpetuate these dualisms and foster a more integrated, holistic relationship with nature. Jickling *et al.* (2018) argue that true sustainability requires disrupting assumptions and establishing new relationships between humans and the natural world, relationships based on reciprocity, respect, and a recognition of the interconnectedness of all life forms.

Despite these challenges, sustainability focused education holds significant potential when it is rooted in a more expansive and inclusive understanding of the term. Alatorre Frenk (2018) advocates for a concept of sustainability that integrates political, cultural, ethical, and spiritual dimensions. This vision of a sustainable society recognises the limits of nature, the rights of all beings, and the need for equitable power distribution and shared responsibility. It promotes

biological and cultural diversity and values the dialogue between different knowledge systems, aiming for equity across cultures, genders, and generations (Merçon, 2020).

5.5.2 Moving Forward

Alatorre Frenk's (2018) broader understanding of sustainability resonates with indigenous perspectives, such as the concept of *Iksemijka ma yolito* from the Nahuatl language, which translates to “may the heart of Earth always beat” (Merçon, 2020, p. 64). This phrase encapsulates a dynamic, living relationship with a breathing Earth. This resonates with Plato's, and later Margulis and Lovelock's concept of Gaia, the Earth as a living superorganism and challenges the resource-oriented anthropocentric view. Instead, it advocates for a relational approach that honours the Earth as a living being with its own agency.

In light of these critiques and potentialities, it may be time to reconsider or even move beyond the term *sustainability* as it is currently used. The term has been stretched to cover so many contexts and meanings that it risks losing its effectiveness as a concept that promotes meaningful action.

5.6 Philosophical and Policy Implications

The findings of this study invite us to reflect on several philosophical and policy implications such as where sustainability originates at the school level, how its origins are related to the school governance and autonomy, as well as pedagogical and epistemological considerations that invite us to question if current practices are the way forward.

5.6.1 Sustainability in Schools: Where Does it Originate?

The question of where sustainability begins in the educational context - whether at the community level, educational leadership, or in educational teams - is important to understand how sustainability is implemented within schools. Each of the schools in this study operates within a unique national, social, and cultural context, which offers insights into the complexity of social, political and environmental issues each school faces. The findings from this study suggest that sustainability can originate from various sources, and each has distinct implications for policy and practice.

5.6.1.1 Community-Led

In the case of School Creciendo Juntos (ARG), the strength of the community has been the driving force behind the school's long-standing success. Community members not only founded

the school but continue to play a central role in its governance and decision-making processes, reflecting a deep commitment to social governance and cooperativism (del Pozo Andres, 2000). This community-driven model aligns with Freire's (2002) Pedagogy of Hope, where education is seen as a tool for empowerment and social change. The school's success underscores the power of grassroots organisation in creating educational projects that are responsive to local needs and values (del Pozo Andres, 2000). Studies have shown that schools with strong community engagement are more likely to have environmentally-oriented practices that reflect the local context and are more resilient to external pressures (Brandão, 2005).

5.6.1.2 Leadership-Driven

By contrast, the pedagogical approach at School Lozzo Atestino (ITA) highlights the crucial role that an inspiring and well-trained educational leader can play in driving educational innovation. Leadership in educational contexts is a critical factor in shaping the direction and success of sustainability initiatives (Hargreaves and Fullan, 2012). The leadership at Lozzo Atestino exemplifies what Leithwood *et al.* (2006) refer to as transformational leadership, where leaders are responsible for fostering a shared vision, supporting continuous professional development, and creating an environment that encourages innovation. In this case, the headteacher of the school has excelled in promoting and implementing STEM-oriented education.

5.6.1.3 Hybrid Model

School No. 294 (URY) represents a hybrid approach to sustainability, where both the surrounding natural environment and the community play vital roles in shaping the school's ethos. The biotecture design of the building amplifies the scope and reach of the pedagogical practices and serves as a living example of ecological principles, aligning with a hidden curriculum that reinforces sustainability through everyday practices (Schweisfurth, 2013). This innovative infrastructure has drawn like-minded individuals from the community and the educational team who are committed to the school's sustainability mission, indicating that both the physical space and community support are essential in fostering a sustainability-oriented school project. The challenges the school faces in maintaining its infrastructure highlight the importance of continuous investment in resources to sustain long-term sustainability initiatives (Sterling, 2010).

5.6.1.4 School Governance, Autonomy, and Leadership

At times, an apparent lack of philosophical and political harmony between educational teams and each school project has been noted, to different degrees, in the three schools in this study. The presence of a shared vision within the school, underpinned by common understanding and motivation is essential for establishing a cohesive, school-wide approach to sustainability

education (Boeve-de Pauw and Van Petegem, 2011; Leo and Wickenberg, 2013; Verhelst, Vanhoof and Van Petegem, 2023). Parent involvement through dialogue and collaborative sessions further broadens engagement and helps overcome barriers to implementing sustainability education (Verhelst, Vanhoof and Van Petegem, 2023).

It is often the case that teachers are allocated to schools based on government policies, geographic need, or on a merit-based systems. However, such allocation methods may not always align with the specific ethos or pedagogical approach of a school, particularly those focused on sustainability. When teachers who do not align the institution's core values or goals are integrated, it can lead to a lack of support for the school's mission, potentially undermining the educational project. To address the questions regarding teacher allocation and school projects, it is crucial to consider the impact of both educational leadership and community engagement in shaping a school's educational framework.

Misalignment between teacher philosophy and school mission can hinder the development of cohesive educational teams and reduce the effectiveness of educational outcomes (Leithwood *et al.*, 2006). In fact, research has shown that successful educational reform depends on fostering strong connections between teachers' beliefs and the educational project's goals, which is often missing in traditional teacher allocation systems (Fullan, 2023).

The question of whether teachers should select schools, or educational leaders should select their educational team touches upon the broader issues of teacher autonomy and school leadership. Ideally, schools with specific and non-traditional educational projects, would have more autonomy in selecting teachers who align with their pedagogical goals. This is particularly important for schools with a strong focus on political, social and environmental crises, as alignment between personal values and institutional philosophy can significantly enhance the effectiveness of the educational project (Sterling, 2010). Providing schools with autonomy to select teachers allows educational leaders to build cohesive teams committed to the school's mission, fostering an environment conducive to innovative teaching practices. On the other hand, a lack of alignment between teachers and the school project can create internal conflicts, decrease teacher motivation, and impede student learning (Hargreaves and Fullan, 2012).

However, the challenge for schools that are less attractive to teachers due to their location, safety concerns, or the complexity of their educational projects remains. Research shows that schools in challenging environments often struggle to attract and retain teachers, particularly those with the experience or qualifications necessary to support innovative or sustainability-oriented projects (Darling-Hammond, 2003). A potential way forward is to create incentive

structures that encourage experienced teachers to work in these schools, providing support systems that foster professional development and enhance the working conditions of teachers in difficult contexts (Ingersoll and Strong, 2011).

5.6.1.5 Policy Implications

The three cases in this study raise critical philosophical and policy-related questions about what should be prioritised in fostering sustainability in education. While international frameworks like UNESCO's Education for Sustainable Development (ESD) provide broad guidelines, national policies often fall short in providing the necessary support for schools with sustainability-oriented educational projects (UNESCO, 2020). For instance, while policies that encourage community engagement or leadership development are essential, schools also need specific support structures that address the unique challenges they face, such as infrastructure maintenance or teacher recruitment in hard-to-reach areas.

To support schools in developing and maintaining sustainability projects, policies must go beyond mere fostering or debilitating dichotomies. A more nuanced approach is needed that integrates existing sustainability frameworks while providing flexibility for schools to adapt these policies to their local contexts. Initiatives such as creating national and regional councils for sustainability-oriented education could serve as platforms for stakeholders - including students, practitioners, and policy makers - to co-create policies that reflect the diverse needs of educational institutions (Sterling, 2010). Mapping educational contexts and liaising with local and international authorities to draft policy recommendations are useful steps toward ensuring that sustainability-oriented education is not only fostered but is also adaptable to the specific needs of each educational project.

By addressing these complex layers, education public policies can better support schools in creating environments where sustainability is not just a curriculum topic but an integral part of the school's identity and practice.

5.6.2 Pedagogical and Epistemological Considerations

In recent years, the discourse surrounding education has increasingly focused on the role of pedagogical frameworks such as Student-Centred Learning (SCL). While SCL is widely promoted as a progressive approach to foster critical thinking and autonomy in students, its application in sustainability-oriented education raises important questions. In this section, criticism of SCL is presented from an epistemological standpoint. As a response, the concepts of transmodernity and the decolonial turn in Latin America are introduced. *Buen Vivir* is briefly described as a

practice, education and challenge. That is followed by introducing Critical Transformative Ecopedagogy, a synthesis of critical pedagogies that are grounded upon a *Buen Vivir* perspective.

5.6.2.1 Beyond Student-Centred Learning

Dominant narratives suggest that the primary purpose of education is to foster individual and national competitiveness within the global economy, advocating that a competitive educational environment, with clear winners and losers, ultimately benefiting public life in a diverse society (Gruenewald, 2003b). Within this context, Student-Centred Learning (SCL) has emerged as the standard approach in so-called “modern” education systems.

Komatsu, Rappleye and Silova (2021) argue that although Student-Centred Learning (SCL) is a crucial element of the discourse on sustainability-oriented education, it may (in)advertently hinder sustainability by fostering ontological individualism. SCL emphasises the individual over the collective and is particularly prevalent in countries with liberal market economies (Schweisfurth, 2013; Komatsu, Rappleye and Silova, 2020). These economies tend to perform poorly on social and environmental sustainability indices, which may be linked to their individualistic values and economic structures.

SCL gained prominence during the UN Decade of Education for Sustainable Development (2005-2014) and was subsequently integrated into the Sustainable Development Goals (SDGs) (Komatsu, Rappleye and Silova, 2021). However, this approach is rooted in historical and philosophical Western contexts. As a result, it may not only be poorly suited to other cultural contexts, but it may also reinforce individualism, which undermines collective efforts toward sustainability. SCL may act as “the Trojan horse of Western globalisation, delivering both Western subjectivity and its underlying ontological individualism as best practice to other cultures” (Bowers, 2005, p. 116 as cited in Komatsu, Rappleye and Silova, 2021, p. 9).

Empirical data further supports the notion that nations with higher levels of individualism tend to experience severe social issues, such as income inequality, drug abuse, mental health problems, and environmental degradation (Komatsu, Rappleye and Silova, 2021). It becomes imperative to question whether the global promotion of SCL as “best practice” is outdated.

This invites us to explore alternative pedagogical frameworks that emphasise interdependence between all beings. These alternatives include cosmological perspectives such as *Sumak Kawsay* or *Buen Vivir*, or pedagogies like *Soka* education (Sharma, 2023), which focus on holistic approaches to living harmoniously with nature and society. Appadurai (2004) argues that these epistemologies require a collective capacity to aspire. As Appadurai (2004, p. 68) claims

“aspirations are never simply individual (as the language of wants and choices inclines us to think). They are always formed in interaction and the thick of social life.”

A common risk in educational discourses is the tendency to adopt a prescriptive or normative stance, either explicitly or through a more sophisticated, tacit approach. Normative narratives often lack self-critique and position the author, often researchers, as an external judge with a privileged moral voice. A major challenge in integrating education with *Buen Vivir* is precisely the effort to decolonise the controlling or prescriptive intentions that often underpin educational discourse.

5.6.2.2 Transmodernity and the Decolonial Turn in Latin America

Transmodernity is a global project that seeks to go beyond European and North American modernity (Dussel, 2016). This distinguishes it from postmodernism, which remains a partial critique rooted in European and North American modernity. Instead, transmodernity involves a philosophical endeavour that begins by affirming what modernity has dismissed or marginalised as external, unvalued, or “useless,” particularly the peripheral or colonial cultures and philosophies (Mignolo, 2002; Dussel, 2016).

The aim is to explore and develop the potential and possibilities of these overlooked cultures and philosophies, drawing on their own resources while engaging in constructive dialogue with European and North American modernity (Dussel, 2016). Schools play a pivotal role in either reinforcing or challenging entrenched colonial biases (Surian *et al.*, 2017). One such bias is the assumption of Western moral superiority, often upheld by the notion that “democracy” was exclusively developed and sustained by Western nations, particularly the UK and the US, despite critical counterarguments by scholars like Sen (2011). The “West vs the Rest” framework remains a dominant lens through which historical and geopolitical events are interpreted.

Decolonial and environmental movements offer new sensibilities, operating through intra and interpersonal, group, and international relationships. These movements encompass a wide range of life dimensions, including ethics, politics, epistemology, and aesthetics (Merçon, 2020). The concept of feel-think (*sentipensar*), popularised by Orlando Fals Borda, refers to “thinking from the heart and mind, (...) it is the way in which communities have learnt the art of living” (Escobar, 2014, p. 16) and exemplifies the intra and inter relational depths of decolonial epistemologies. The transformative potential of these (re)emerging imaginaries is enhanced when their critiques and proposals are intertwined in a cohesive discourse.

Latin America, or *Abya Yala*, is one of the most prolific territories¹⁶ from where cultural, political, and epistemic territories inspirations for living in harmony between cultures and with the natural environment have emerged (Merçon, 2020); concepts and praxis such as popular education (Freire, 1997) and participatory action research (Fals Borda *et al.*, 1991) are fundamental frameworks in politicising epistemic processes. These traditions and methodologies serve as crucial reference points for transformative education (Merçon, 2020).

The notion of *Buen Vivir* is a prime example of such traditions. Thinkers such as Fanon (1963), Quijano (2000), and Mignolo (2011) have critically illuminated the colonial processes that shape power, knowledge, and identity. Simultaneous to the decolonial turn, environmentalism in Latin America has produced critiques of the ecocidal tendency of hegemonic power-knowledge regimes while proposing small and medium-scale practical alternatives (Merçon, 2020).

5.6.2.3 *Buen Vivir* as a Practical-Discursive Horizon

Buen Vivir, otherwise known as *Sumak Kawsay* can be translated as “Living Well”. It originates in *Abya Yala* (Latin America) and merges decolonial and ecological perspectives. It challenges the culture-nature dichotomy and critiques the concept of “development”, which has been central to capitalist visions of progress and expansion (Merçon, 2020). Instead of development’s monocultural, expansionist, and ecocidal logic, *Buen Vivir* promotes inter and pluricultural landscapes grounded in community well-being, respect, and love for nature (Gudynas, 2011; Acosta, 2013; Houtart, 2011; Dávalos, 2008).

In place of a collective life dominated by an imagined unlimited economy where money and material well-being are the governing law, *Buen Vivir* offers a new conceptual home - a shared, solidarity-based dwelling where the rules are collectively made to pursue a common goal: living well (Merçon, 2020). Other epistemological perspectives that question hegemonic Western cosmologies have risen elsewhere such as Ubuntu in Sub-Saharan Africa, Soka in Japan and Dreamtime in aboriginal Australia.

¹⁶ In other epistemological traditions, it is worth highlighting Jainism, whose earliest figure was Vardhamana Mahvira (599-527 BCE), and its ontological perspective of Tattvartha Sutra, which contains the principles of “non-violence, non-possession, and non-determination” (Dussel, 2016). This universal vitalism presents significant philosophical insights, particularly in addressing contemporary ecological issues.

5.6.2.4 *Buen Vivir* and Education

In practice, an education aligned with *Buen Vivir* is envisioned as a continuous process of building a “we” and a surrounding environment that reflects the most potent and beautiful aspects of this collective identity (Merçon, 2020).

Education thus becomes a series of co-constitutive or co-formative acts, guided by collective worldviews, learned from lived experiences or inspiring narratives, as well as by the aspirations of the community. Individuals are not seen as isolated beings in competition or as merely striving for efficiency or self-improvement based on external logics. Instead, they are integral parts of a larger whole, whether referred to as the collective, cooperative, community, or any other dynamic social landscape in which they actively participate (Merçon, 2020). *Buen Vivir* in an educational context includes six key features (Merçon, 2020):

- i) **Hybrid Nature:** its cultural boundaries expand by bringing together diverse groups and creating bonds. Its recent historical (re)manifestation is the result of the convergence between ancestral Andean culture and continental academic culture.
- ii) **Contextual or Situated:** the practices and thoughts that shape *Buen Vivir* are always born and unfold within a specific biocultural space. While transborder exchanges are inevitable and necessary for both material and symbolic life, these exchanges do not decontextualise actions and ideas but rather confer more complex and often elusive meanings due to their hybrid nature.
- iii) **Multidimensional:** the complexity of *Buen Vivir* is evident in its implication across all dimensions of personal and collective life. It reminds us of that segmenting life into domains like politics, culture, or economy is an artificial construct. Reflection and action toward *Buen Vivir* cut across all areas of life, demonstrating that they are interconnected threads in a larger fabric.
- iv) **Participatory:** *Buen Vivir* is built by multiple voices, hands, minds, and hearts, reflecting a deep participatory process.
- v) **Polysemic:** the meaning of *Buen Vivir* varies across different biocultural contexts, illustrating that community well-being is understood through diverse material and linguistic-epistemic practices.

vi) **Open and Evolving:** *Buen Vivir* is a concept and practice in constant change, experimentation, and construction. It continuously adapts to societal challenges, which vary according to geographical and cultural contexts, making it inherently open, adaptive, and creative.

5.6.2.5 *Buen Vivir* as Challenge and Alternative

Buen Vivir offers a significant challenge to Student-Centred Learning (SCL) by proposing an alternative framework that emphasises community well-being, interdependence, and ecological harmony, rather than the individualistic focus (Gudynas, 2011). From a *Buen Vivir* standpoint, education can be viewed as a community process, where learners are not seen as isolated entities but as interconnected individuals whose learning contributes to the greater good of society and nature (Acosta, 2013). Education in the context of *Buen Vivir* focuses not on personal success but on creating a just society in harmony with nature in which all beings, human and non-human, flourish.

Furthermore, *Buen Vivir* directly challenges the linear, goal-oriented nature of SCL, which is often focused on measurable academic outcomes and personal success within a competitive framework (Gruenewald, 2003b). *Buen Vivir* advocates for an approach to education that is context-sensitive and holistic, thus integrating cultural, spiritual, and ecological dimensions, recognising that different communities require different educational practices based on their local realities. This contrasts sharply with the standardised approaches of SCL, which may inadequately address local knowledge systems or cultural values.

By embracing *Buen Vivir*, education is reconceptualised as a relational and holistic practice, where learning is oriented toward collective well-being and environmental sustainability rather than individual achievement (Mignolo, 2011). This shift fosters an inclusive, cooperative educational model that values community and ecological sustainability, challenging the market-driven, competitive nature of SCL, which tends to reinforce neoliberal ideals (Quijano, 2000). Instead of seeing education as a path to personal success and career readiness, *Buen Vivir* advocates for a collective journey towards living in harmony with each other and the environment. This framework represents a profound shift in educational philosophy, from the individualistic focus of SCL to a communal and ecological paradigm that prioritises sustainability, social justice, and interconnectedness (Merçon, 2020).

Buen Vivir highlights the need for education to move beyond a market-driven education and toward fostering a deeper sense of social and ecological responsibility. *Buen Vivir* offers a transformative and decolonial framework that challenges traditional notions of development and

progress, emphasising community well-being, environmental respect, and collective governance. This perspective offers an alternative to dominant neoliberal paradigms and can inform educational practices that seek to foster a more equitable, sustainable, and culturally attuned society.

5.6.2.6 Critical Transformative Ecopedagogy (CTE): A Unified Framework

In order to address the multifaceted challenges of the climate crisis, social inequality, and political polarisation, frameworks that transcend traditional teaching methods and foster a deep, systemic understanding of who we are and how we relate to one another are necessary.

Some of the pedagogical approaches and theories described in the [Literature Review chapter](#) i.e. Ecopedagogy, Education for Sustainability, Transformative Learning for a Sustainable Future, emancipatory political education, place-based education, and dialogical education have, in their own way, contributed significantly to the critical perspective taken in this research. Each of these frameworks offers unique strengths through distinct yet complementary perspectives on how education can be leveraged to promote a more just and habitable planet for all beings. Nonetheless, these pedagogical frameworks can only be truly transformative if the ontological and epistemological underpinnings are aligned with fostering a deeper sense of social and ecological responsibility and prosperity. Therefore, reading these pedagogies from a *Buen Vivir* perspective call for a new and unified framework: Critical Transformative Ecopedagogy (CTE).

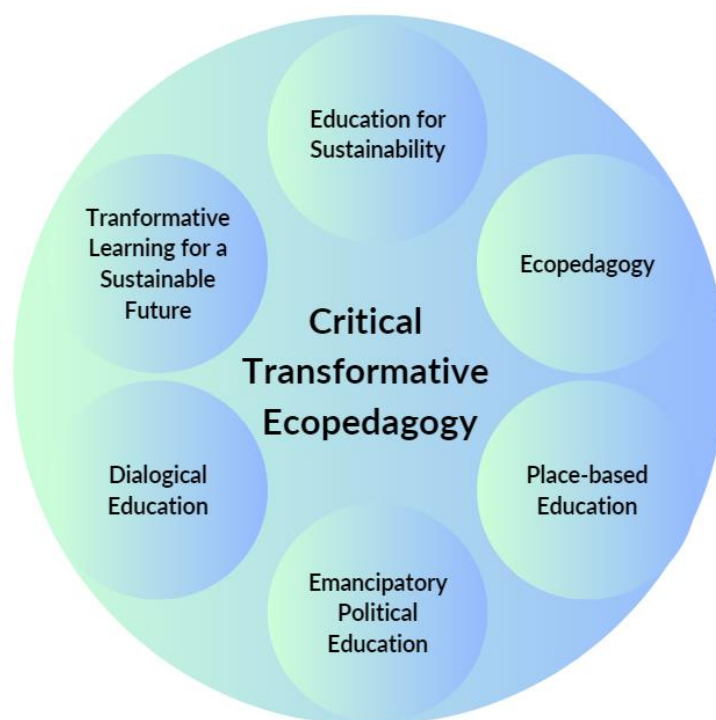


Figure 94. Critical Transformative Ecopedagogy. Author's elaboration.

The of CTE focus is set on fostering critical thinking, reflection, and values aligned with *Buen Vivir*, aiming to enable learners to embody a just, harmonious and prosperous cosmovision. CTE captures the strengths of the systemic and interdisciplinary approaches promoted by EfS and place-based education, the emphasis on social justice by Ecopedagogy and emancipatory political education, and the personal transformation and the deep internalisation of sustainable values of TLS through dialogical education.

As a new conceptual framework combining these perspectives, Critical Transformative Ecopedagogy (CTE) promotes critical consciousness of socio-environmental injustices, personal transformation through deep reflective learning, collective political action, and a comprehensive approach that integrates environmental, social, and political dimensions. CTE aims to scaffold educational communities and foster citizens who are critically aware, personally transformed, and collectively equipped with the knowledge and skills to lead and support systemic change.

One of the fundamental features of CTE is that it is grounded and situated in space and time; thereby recognising that education can address multiple dimensions - cognitive, emotional, epistemological, ethical, and practical - at the local level to be transformative at the individual, but especially at the collective level. CTE offers a framework that can help members of the school community to engage with the values, skills and knowledge required to address complex social, political and environmental challenges.

CTE encourages all members of the school community, but especially educators and students, to co-create learning experiences that inspire critical thinking, ethical reflection, and transformative action. In doing so, CTE aims to promote learning experiences that not only increase knowledge about social, political, and environmental issues but also invites individuals, and collectives, to walk the journey of developing socioemotional skills in order to act and promote change in their communities, and by extension the world. For instance, in practice, CTE can focus on:

i) Community-Led Social and Climate Justice Projects: the school can partner with local residents and organisations to address environmental injustices, such as pollution nearby factories or poor waste management practices. Students and community members engage in critical discussions about the social, economic, and political factors contributing to the issue. They then develop and implement action plans, such as organising protests, creating awareness campaigns, talking to workers' unions, or lobbying local government officials for stricter regulations. Students and educators engage in policy advocacy at local, national, or international levels to address social and environmental injustices. They research climate

policies, engage with policymakers, and organise campaigns to push for more ambitious political action.

ii) Participatory Curriculum Development: schools can co-develop their curriculum with students, teachers, and community members, focusing on local socio, political and environmental issues. For example, a coastal community might create a curriculum that includes hands-on projects related to marine conservation and climate change resilience.

ii) Critical Media Literacy and Eco-Art Projects: students engage in critical media literacy projects where they analyse and deconstruct media representations of social and environmental issues, such as feminism, deforestation or plastic pollution. They then create their own media, such as documentaries, podcasts, or art installations, to raise awareness and inspire action within their community.

iv) School as Living Lab: the school can operate as a living lab where students are involved in designing and maintaining systems such as solar energy installations, water recycling systems, and organic vegetable gardens. These activities are integrated into the curriculum, where students learn about the science and ethics of sustainability while actively participating in the school's ecological footprint reduction.

v) Indigenous Knowledge Integration: school collaborates with local - or foreign - Indigenous communities to integrate traditional ecological knowledge and epistemologies into their practices. Students can learn about traditional land management practices, the cultural significance of biodiversity, the spiritual bond to land, and the importance of intergenerational knowledge transfer. This can be done through fieldwork, digital storytelling, and direct involvement with Indigenous communities.

These examples are simply illustrative of how Critical Transformative Ecopedagogy can be implemented in diverse educational settings. Each educational community would have to democratically select the areas they want to prioritise for their political and pedagogical action. The value of CTE lies in its ability to integrate multiple dimensions of education into a single, cohesive framework. By doing so, it offers a powerful and practical tool for education projects seeking to foster deep, transformative learning that empowers students to become active, engaged citizens committed to building a more just and habitable world.

5.6.2.7 Challenges for Critical Transformative Ecopedagogy

Critical Transformative Ecopedagogy (CTE) faces several challenges and limitations. Some of these are intrinsic to their disruptive nature (Gadotti, 2009) while others depend on the context in which they are applied. This pedagogical approach challenges capitalism, the concept of development and the misuse of the term sustainability, as previously discussed. The counter-hegemonic nature of CTE would undoubtedly be difficult to encourage within a school system, especially due to the tensions it could create with parents.

Challenging power is not easy. Significant systemic changes in how we organise our societies are needed to address the multifaceted crises we are undergoing. Powerful nations have had no interest in significantly changing the economic paradigm that has led to the ecological crises; challenging these systems would inherently change their position of power on the world stage, and neither politicians nor significant portions of society in those countries seem to be ready for that discussion.

From a practical standpoint, studies have shown that increased knowledge does not necessarily imply action when dealing with climate change and ecological crises (Dijkstra and Goedhart, 2012; Wibeck, 2014; Reid, 2019). Knowing about complex global issues does not necessarily mean that students - and citizens - feel prepared to act accordingly to counteract them. Studies indicate that what individuals think about nature and the environment does not reflect what they know but rather their identity (Perkins *et al.*, 2018). Also, if and how we measure environmental literacy is contested across the literature. There is no agreement on how to measure, and monitor, environmental education (Bogliaccini, 2018). Young learners' opinions are also closely intertwined with what they learn in their homes. Therefore, the mind of young individuals can become a battleground for opposing cosmovisions and perspectives (Posada, 2023).

Overcoming resistance to change is a significant challenge, especially among adults whose worldviews are more fixed than those of younger learners (Laininen, 2019). The findings of this study have shown, e.g. the critical incident in one of the schools that involved racist and xenophobic comments by some students, that there are complex in-situ steps that might have to be taken in order to move towards more fair and just futures. For instance, teacher training in dealing with hate speech and intercultural community activities could be a first step.

Processes of transformation are uncomfortable and often induce emotional dissonance, as individuals must confront contradictions between their current beliefs and the emerging need for practices that lead to just and habitable futures. To address these challenges, CTE needs to

go beyond the knowledge sphere, and appeal to the minds, hearts and hands of students. This can start through unlearning; a necessary process to move beyond existing mental models in order to open a space for a holistic and interconnected way of understanding the world.

5.7 Key Takeaways

In conclusion, this chapter has described a unified framework for critical Global Citizenship Education coined Critical Transformative Ecopedagogy. The chapter has delved into how CTE can be integrated into diverse educational settings through collaborative and culturally sensitive pedagogies. The use of digital narratives and storytelling, combined with the concept of *perezhivanie*, provides a holistic and emotionally engaged approach to learning, which is vital for addressing complex sustainability issues. Despite the methodological limitations, the findings underscore the potential for educational innovations to foster deeper connections between students, their communities, and their surrounding natural environment. The findings of this research ultimately call for more inclusive, context-sensitive, and relational educational practices that go beyond individualistic frameworks and include epistemological conceptualisations such as feel-think (*sentipensar*) and *Buen Vivir* thereby promoting collective responsibility and action.

6. Conclusion

In this chapter, the findings of this study are synthesised, their implications for educational theory and practice are discussed, the broader significance of the study in the field of education for a just and habitable planet are explored, and avenues for further research are suggested.

This study explored the educational conditions and practices shaping attitudes and behaviours towards social, political, and ecological crises in three schools in Argentina, Italy and Uruguay. The findings reveal that different pedagogical approaches - such as political education, STEM-oriented teaching, and learning from the surrounding natural environment - offer distinct advantages and limitations. While the schools share a commitment to fostering critical, engaged, and responsible citizens, their approaches differ significantly.

One strength of this research lies in the mixed methods employed, which captured the nuances of participants' perceptions. By integrating qualitative and quantitative tools, the study provides a comprehensive understanding of how educational practices influence students' critical thinking and civic engagement. For instance, School Creciendo Juntos (ARG) stands out as a noteworthy case in terms of promoting critical thinking and political action, demonstrating the potential of schools to cultivate students' awareness of socio-political structures and their capacity to act upon them.

The study highlights the importance of aligning students' and educators' perceptions of sustainability with their schools' educational projects. In settings where sustainability is integrated into daily practices, students tend to develop deeper and more critical understandings. This provides an opportunity to connect individual and group perspectives with national and international benchmarks, fostering richer engagement with global sustainability challenges. In contrast, schools that limit sustainability to specific domains, such as technology or environmental education, there are missed opportunities to address broader social and political dimensions.

Moreover, this research contributes to the field of critical pedagogies by illustrating how individual and collective writing can be powerful tools for fostering critical reflection. The photovoice method was found to be particularly apt to study a complex phenomenon such as the students' understanding of sustainability, and even communicate ideas between schools. Through this collective narrative, students are encouraged to engage deeply not only with their own experiences and the socio-political systems that shape their lives, but also with that of students in other contexts. This act of empathy from an intercultural perspective is often

overlooked in this field of study. This reflective process not only fosters personal growth but also strengthens a sense of collective belonging and understanding. By fostering this deeper engagement, schools can play a pivotal role in preparing students to understand, process, navigate and act upon the multiple crises that they face.

The findings of this research underscore the need for schools to innovate and adapt their approaches, recognising the diverse needs of different communities. Place-based educational practices, rooted in local contexts, are crucial for ensuring education remains relevant and impactful.

6.1 Revisiting the Research Purpose and Questions

The purpose of this research was to explore the educational conditions and practices that shape attitudes and behaviours towards social, political, and ecological crises in three schools that are renowned for their work towards sustainability: School Creciendo Juntos (Argentina), School Lozzo Atestino (Italy), and School No. 294 (Uruguay). The research was guided by two research questions and three sub-questions:

RQ1) How do schools provide scaffolding to students aged 11-15 towards developing sustainability competences?

RQ2) How do students and educators perceive sustainability? To what extent is their perception aligned with the school's educational project?

Sub-question 1) What are the defining characteristics of schools that emphasise critical Global Citizenship Education, and what can we reflect on their educational approaches?

Sub-question 2) What is the relationship between the context in which the project is immersed and its critical Global Citizenship Education practices?

Sub-question 3) How do students perceive their futures? What are the general sentiments expressed in their narratives about their own future lives?

This exploratory multiple-case study examined the pedagogical approaches each school adopts and how students and educators perceive sustainability in their respective contexts.

6.2 Summary of Key Findings

6.2.1 Scaffolding Sustainability Competences

The findings from this research suggest that each of the three schools provides scaffolding for sustainability competences by focusing on distinct pedagogical approaches: political education, STEM-oriented pedagogy, and learning from the surrounding natural environment.

School Creciendo Juntos (ARG) fosters sustainability competences primarily through political education. This school emphasises collective decision-making, social justice, and cooperativism, aligning with Freire's (1997) principles of pedagogy of hope. Students are engaged in discussions around systemic injustices and socio-political activism, which cultivates competences like systems thinking and values thinking (Bianchi, 2020). The integration of sustainability into political discourse and community-driven projects allows students to approach sustainability as a collective, systemic challenge.

School Lozzo Atestino (ITA) provides scaffolding for sustainability through a STEM-oriented pedagogy. The school's emphasis on technological innovation, coding, robotics, and AI reflects a focus on the practical sphere of transformation (O'Brien and Sygna, 2013). By developing students' problem-solving and technological skills, the school equips them to address environmental and technological challenges.

School No. 294 (URY) emphasises learning from the surrounding natural environment, fostering a worldview of interconnectedness between all living beings. The school's hands-on, experiential learning model - incorporates learning through the vegetable gardening, eco-construction, and renewable energy - reflects an alignment with the personal sphere of transformation (O'Brien and Sygna, 2013). The school's self-sustaining biotecture structure is a powerful symbol of ecological literacy, providing a living example of sustainability in practice.

In these three schools, scaffolding is achieved through a wide array of methods and practices. Each school, however, places a different emphasis on the environmental, social, or political aspects of sustainability, which reflects their unique educational goals and contexts.

6.2.2 Perceptions of Sustainability

Students and educators in the three schools expressed diverse perceptions of sustainability, shaped by the schools' educational models and local socio-political contexts. These perceptions seem to be reasonably aligned with the educational philosophies and pedagogical projects of their respective schools.

In School Creciendo Juntos (ARG), both students and educators view sustainability as deeply intertwined with social justice, community action, and political activism. The school's focus on critical engagement with social issues, such as feminism, the dictatorship, and environmental justice, aligns with the educators' vision of their roles as “activist educators” (*maestros militantes* in Spanish) thereby questioning the status quo and fostering collective action. Students at this school demonstrated a powerful sense of political agency, viewing sustainability as a socio-political issue requiring collective action towards systemic change. The school's integration of critical consciousness, political activism, and collective decision-making reflects a vision of education as a tool for social transformation.

Educators and students at School Lozzo Atestino (ITA) view sustainability through the lens of technological innovation and individual action. Educators often framed sustainability as a set of individual practices (e.g., recycling, responsible consumption) rather than a collective socio-political issue. Students' perceptions reflected this focus, with many expressing interests in technological solutions to environmental challenges. This indicates alignment with the school's STEM-oriented educational approach. Nonetheless, a potential gap in fostering deeper critical reflection on the interconnectedness of environmental issues with social and political dimensions was identified.

At School No. 294 (URY), both students and educators conceptualised sustainability as a lived practice, intricately connected to their surrounding natural environment. Students viewed sustainability through the lens of ecological responsibility, reflecting the school's emphasis on hands-on environmental education through its self-sustained building and vegetable garden. This suggests a strong alignment between the school's mission to foster a connection to nature and students' perceptions of sustainability as an integral part of their everyday lives. Similar to the case of Lozzo Atestino (Italy), a lack of focus on social and political aspects and how they are intertwined with environmental sustainability was identified. The school's biotecture building and ecological education foster an immersive learning experience that encourages students to live sustainably and develop a deep understanding of the natural world. This approach aligns with the personal and ecological dimensions of sustainability, promoting a transformative shift in students' relationships with the environment.

6.2.3 Implications for Educational Practices

The findings of this study have several implications for the field of education, particularly for critical pedagogies that address social, political and environmental issues. This research highlights how the three schools exhibit defining characteristics of Critical Transformative Ecopedagogy (CTE). School Creciendo Juntos (ARG) exemplifies the critical reflection and

collective transformation features of CTE through its political and social focus. School Lozzo Atestino (ITA) reflects CTE in its quest for personal transformation, through STEM-oriented pedagogies, and School No. 294 (URY) embodies CTE through its focus of connecting students to their surrounding natural environment.

This study highlights the importance of diverse pedagogical approaches in critical education, showing that there is no one-size-fits-all solution. Schools adapt their educational practices to fit their local contexts, address community needs, and align with their institutional goals. This flexibility is key to ensuring that their educational projects remain relevant and meaningful for students, rather than relying on rigid, generalised methods.

A significant finding in the study is the role of political education and arts-based education towards systemic change, as demonstrated in School Creciendo Juntos (ARG). The integration of political education in daily practices through the arts and with a focus on social justice, collective action, and critical consciousness, are elements that are often sidelined in more traditional, technocratic or environmentally focused sustainability models. By prioritising political and arts-based education, students experience their roles as active citizens who can, for instance, self-organise through cooperative work, take ownership of a community radio, and address members of Congress. Ultimately, students leverage change in their own communities.

6.3 Further Research

Future research can build upon the findings of this study by exploring a variety of avenues that further develop our understanding of critical pedagogies in relation to social, political and environmental crises.

One direction could be to examine how CTE, or critical pedagogies in general, take place in diverse educational contexts. Studies conducted in both the Global North and South would provide a more comprehensive picture of how critical education focused on sustainability is adapted to diverse cultural, political, and economic settings. Such research would help in identifying the specific needs and strategies that schools employ across varying socio-political landscapes (Kopnina and Meijers, 2014).

Another relevant area for exploration is the long-term impact of these critical and utopian pedagogical approaches. Longitudinal studies would be particularly valuable in assessing how the worldviews and behaviours of students, educators and community members evolve over time as they transition into distinct phases of their lives and engage in professional, political, and social spheres. These studies could reveal whether these critical pedagogical approaches have a lasting

influence on individuals' engagement with social, political and environmental issues, as well as their capacity for civic and political participation (Redman, Wiek and Barth, 2021).

Studies have shown that the role of local governments and community members in supporting school sustainability programs is especially significant for fostering collective action toward systemic change (Wals and Corcoran, 2012). Involving a wider range of stakeholders, including parents, community leaders, and policymakers, would enrich future research. Understanding how the worldviews and cosmologies of relevant actors across the school community level either facilitate or hinder sustainability initiatives in schools could provide insights into the potential for broader societal transformation.

Additionally, comparative studies across educational levels could provide valuable insights into how sustainability competences develop over time. Examining approaches from primary through higher education could help identify key moments in students' educational journeys where they become most engaged with sustainability issues. This research could contribute to a more structured development of sustainability oriented practice across different educational stages (Mochizuki and Fadeeva, 2010).

Finally, future research should delve deeper into the emotional and psychological dimensions of education in connection with the current crises. With rising concerns around eco-anxiety and solastalgia, investigating how schools can support students in managing their psychological distress is critical. This could involve exploring strategies that help students turn feelings of despair into constructive actions, fostering resilience, and collective support and action (Hickman *et al.*, 2021).

6.4 Final Reflections

In a global context of wars, political polarisation, rising economic inequality and where governments subsidise deforestation and the fossil fuel industry with USD 2.6 trillion dollars a year (Koplow and Steenblik, 2024), the role of civil society for systemic change is fundamental.

This research has attempted to explore how these threats interrogate educational methods and contents. Still, important questions remain: What pedagogical approaches are most appropriate? For what purposes? And in which contexts?

If we accept the premise that education is a powerful tool for deep societal change, pedagogical approaches that adapt to local needs while tackling global issues are increasingly more relevant and might include strategies such as slowing down, listening to one another, and being critically

aware of our positionality in society. In order to address the social, ecological, and political crises of our time, educational approaches can take holistic, context-specific, and adaptable approaches. By doing so, education can harness its transformative potential for systemic change toward a more just and harmonious way to feel-think (*sentipensar*) and relate with one another.

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Annex I. Interview Script

Interviews were conducted in Spanish and Italian. This version in English is offered for the reader's comprehension purposes.

Script:

First of all, I want to thank you for taking the time to chat with me. I want you to know that you can choose not to answer any of the questions, and at any moment, you can interrupt or ask me any questions you have. You can also decide to end the interview at any time. I want to remind you that everything you tell me is confidential, and I will not use your name when I draft my thesis. I just want to confirm that you sent me the signed consent form, right? Before we start, do you have any doubts or questions for me?

Professional Career

Could you tell me about your work experience before starting to work at this school?

How long have you been teaching? What do you teach?

How long have you been working at the school? Did you choose to work at this school? Why?

What are your responsibilities and tasks at the school?

The School and the Context

In what context is the school located? What kind of population does it serve?

What are the difficulties of working in this context?

What is your opinion of the educational team from a professional point of view?

In your opinion, what are the strengths and weaknesses of the school?

Are parents involved in school activities?

Sustainability at the School

What does sustainability mean to you?

Do you feel you've had enough professional development (courses, preparation) to be able to include sustainability in your classes?

How would you define the school's approach to sustainability?

How would you describe how sustainability is addressed at the school? Is it similar to or different from other schools? How so?

What could be improved, in your opinion? What is working well?

(Show the group's Padlet) What do you think of it? Why do you think these photos and concepts appear?

Would you like to add any other comments?

Interview Script in Spanish

Antes que nada quiero agradecerte por tomarte el tiempo para charlar conmigo. Quiero que sepas que podés decidir no responder cualquiera de las preguntas, y en todo momento me podés interrumpir o preguntar cualquier duda. También podés decidir terminar la entrevista en cualquier momento. Te quiero recordar que todo lo que me digas es confidencial, no voy a usar tu nombre cuando escriba mi tesis. Quiero confirmar que me enviaste el formulario de consentimiento firmado, no? Antes de empezar, tenés alguna duda o pregunta para mí?

Carrera profesional

¿Me podías contar sobre tu experiencia laboral antes de empezar a trabajar en esta escuela?

¿Hace cuanto enseñás? ¿Qué enseñás?

¿Hace cuánto trabajás en la escuela? ¿Vos elegiste trabajar en esta escuela? ¿Por qué?

¿Cuáles son tus responsabilidades y tareas en la escuela?

La Escuela y el contexto

En qué contexto se encuentra la escuela? ¿Qué tipo de población atiende?

¿Cuáles son las dificultades de trabajar en este contexto?

¿Cuál es tu opinión del equipo educativo desde un punto de vista profesional?

¿Cuáles son las fortalezas y debilidades de la escuela en tu opinión?

Los padres y madres están involucrados/as en las actividades escolares?

Sustentabilidad en la escuela

¿Qué es la sustentabilidad para vos?

Creés que has tenido suficiente desarrollo profesional (cursos, preparación) para poder incluir la sustentabilidad en tus clases?

¿Cómo definirías el enfoque de la escuela en relación a la sustentabilidad?

¿Cómo definirías cómo se trabaja el tema de la sustentabilidad en la escuela? ¿Es parecida a otras escuelas o difiere? ¿En qué?

¿Qué se podría mejorar en tu opinión? ¿Qué funciona bien?

Les muestro el padlet de su grupo, ¿qué opinan? ¿Por qué piensan que aparecen estas fotos y conceptos? ¿Te gustaría agregar algún otro comentario?

Interview Script in Italian

Prima di tutto voglio ringraziarti per aver trovato il tempo di parlare con me. Potete scegliere di non rispondere a nessuna domanda e che in qualsiasi momento puoi interrompere o fare domande. Registrerò questa conversazione, ma analizzerò solo la trascrizione audio nella mia analisi, va bene? Voglio ricordarti che tutto ciò che mi direte è confidenziale, non userò il vostro nome o niente che la può identificare quando scriverò la mia tesi. Prima di iniziare, ha qualche domanda da farmi?

Carriera professionale

Da quanto tempo insegna? Cosa insegna?

Puoi parlarmi della tua esperienza lavorativa prima di iniziare a lavorare in questa scuola?

Da quanto tempo lavora nella scuola? Ha scelto di lavorare in questa scuola? Perché?

Quali sono le sue responsabilità e i suoi compiti nella scuola?

Scuola e contesto

In quale contesto si trova la scuola? Che tipo di popolazione serve?

Quali sono le difficoltà di lavorare in questo contesto?

Qual è la sua opinione sull'équipe educativa da un punto di vista professionale?

Quali sono i punti di forza e di debolezza della scuola secondo lei?

I genitori sono coinvolti nelle attività scolastiche?

Sostenibilità a scuola

Direbbe che la scuola si concentra sulla sostenibilità? Perché (no)?

Pensa di aver avuto uno sviluppo professionale sufficiente (corsi, preparazione) per poter includere la sostenibilità nelle sue lezioni?

Che cos'è la sostenibilità per te?

Come definirebbe l'approccio della scuola alla sostenibilità? È simile a quello di altre scuole o diverso? In cosa si differenzia?

Cosa potrebbe essere migliorato secondo te? Cosa funziona bene?

Vi mostro il padlet del vostro gruppo, cosa ne pensate? Perché pensate che appaiono queste immagini e questi concetti?

Vuole aggiungere altri commenti?

Annex II. Workshop Structure



Sustainability Workshops

These workshops are designed for 20-30 students and last approximately 90 to 110 minutes.

1st Workshop - Week of 27/03 to 31/03 Are we all connected through sustainability? In what way(s)?

Objectives: Reflect on what sustainability is. Is sustainability important? What types of sustainability exist? Which types are most important to me?

Activities:

Introductions: personal, workshops, and a survey

Icebreaker activity: The Sustainable Team. In teams of 6-8, students have to find ways to sustain themselves in a decreasing number of contact points with the floor (e.g. first 10, then 6, then 4, etc). Eventually the task is for everyone to be held with only one contact point as a team.

Brainstorming about sustainability

Presentation of images and quotes on sustainability: individual and group reflection

Individual work: How do I/we imagine my/our future? Free creation through drawing, storytelling, etc.

Presentation of the photovoice methodology: Students will take and submit a photo from their neighbourhood that answers the question: “What does sustainability mean to me?”

Group discussion

2nd Workshop - Week of 10/04 to 14/04 What does sustainability mean to us?

Before the workshop, each student must have submitted a photo that answers the question: What does sustainability mean to me?

Objectives: Move toward a group definition of sustainability. Provide a space for students to express themselves through their photos.

Activities:

Individual activity: Each student writes a brief paragraph describing their photo: Where did they take it? Why? What does it represent? Etc.

Group activity: Using Padlet, students analyse all the photos and categorize them into groups. Using the categories created by the students, we identify the most recurring themes and attempt to reach a common definition of sustainability.

I will show the students photos from Italy, and they will “compare” them with their own.

Reflection on the 2 (or 3) workshops and closing discussion.

Third Workshop - Monday 27/03; 10/04 and 17/04

Objectives: Reflect on the importance of collective movements in addressing complex issues, such as sustainability.

Activities:

Introduction about myself and the project*

Icebreaker: “The Immigrant” card game

“The Immigrant”: In this activity, each group of students plays a card game with specific rules. After reading the rules, they cannot be shown or repeated. Every 5 minutes, the “winners” rotate to a new table, but they don’t know the rules of the new game.

Reflection on what they felt during the game.

What is a community? Brainstorming

Activity: “Finding Solutions.” Each group of 4-5 students chooses a local community issue and has 20-30 minutes to create a possible solution and then “sell” it to the rest of the class. They can create a title, slogan, act, draw, or sing for their solution.

Presentation of solutions

Group discussion

*Only on Monday 27/03.

Annex III. Workshops Schedule

The following table summarises the timeline for the workshops:

Date	Workshop No.	School (Country)	Grade	No. of students
17/11/2022	1	Cinto (ITA)	7th	23
17/11/2022	1	Cinto (ITA)	5th	20
18/11/2022	1	Vo' (ITA)	7th	40
18/11/2022	1	Lozzo (ITA)	7th	22
24/11/2022	2	Cinto (ITA)	7th	23
24/11/2022	2	Cinto (ITA)	5th	20
25/11/2022	2	Vo' (ITA)	7th	40
25/11/2022	2	Lozzo (ITA)	7th	22
01/12/2022	3	Cinto (ITA)	7th	23
01/12/2022	3	Cinto (ITA)	5th	20
01/12/2022	3	Vo' (ITA)	7th	40
01/12/2022	3	Lozzo (ITA)	7th	22
02/12/2022	4	Cinto (ITA)	7th	23
02/12/2022	4	Cinto (ITA)	5th	20
02/12/2022	4	Vo' (ITA)	7th	40
02/12/2022	4	Lozzo (ITA)	7th	22
29/03/2023	1	School Creciendo Juntos (ARG)	9th	33
30/03/2023	1	School Creciendo Juntos (ARG)	7th	32
30/03/2023	1	School Creciendo Juntos (ARG)	8th	30
12/04/2023	2	School Creciendo Juntos (ARG)	9th	33
13/04/2023	2	School Creciendo Juntos (ARG)	7th	32
13/04/2023	2	School Creciendo Juntos (ARG)	8th	30
17/04/2023	3	School Creciendo Juntos (ARG)	7th/8th/9th	30
17/04/2023	3	School Creciendo Juntos (ARG)	7th/8th/9th	32

17/04/2023	3	School Creciendo Juntos (ARG)	7th/8th/9th	33
18/04/2023	1	School No. 294 (URY)	4th/5th/6th	34
25/04/2023	2	School No. 294 (URY)	4th/5th/6th	34
26/04/2023	3	School No. 294 (URY)	4th/5th/6th	34

Table 10. Workshops Schedule.

Annex IV. School Report

Escuela Creciendo Juntos Estudio sobre educación y sustentabilidad en Argentina, Italia y Uruguay



Este breve informe preliminar tiene como objetivo presentar los datos, y algunas observaciones, de las respuestas obtenidas a partir de un cuestionario en la Escuela Creciendo Juntos, en Moreno, Argentina. Vale aclarar que este documento no presenta un análisis de datos en profundidad ni tampoco incluye los datos obtenidos en los talleres llevados a cabo en marzo y abril, 2023.

El cuestionario

Tras una revisión y análisis de la literatura relevante, el cuestionario fue estructurado en tres partes:

- (1) Biográfica: con preguntas personales que identifican las condiciones de vida, movilidad y relativas al colegio, deporte, voluntariado.
- (2) Huella ecológica [ítems 19-32]: dirigido al relevamiento de actitudes cotidianas. Algunas se refieren a decisiones “autónomas”, otras dependen de las decisiones de la familia.
- (3) Nosotros y la naturaleza [ítems 33-54]: se pregunta sobre opiniones con respecto a cómo se sienten los y las participantes con respecto a su entorno natural.

El cuestionario se formuló, y probó, teniendo en cuenta los contextos escolares en los cuales se aplica, sin forzar excesivamente los tiempos de atención y concentración e intentando que los temas y acciones propuestos a los y las participantes sean lo más concretos y reconocibles posible. En este sentido, no se ha adoptado un instrumento preexistente, pero sí se ha tenido en cuenta distintas escalas conocidas intentando incluir ítems que permitan la comparación a nivel internacional.

En particular, el cuestionario utilizado para este estudio está, en parte, basado en el Nuevo Paradigma Ecológico (NEP), que investiga una actitud definida como “pro-ecológica”. Esta escala ya está bastante extendida en la educación ambiental (Manoli et al., 2019). El Nuevo Paradigma Ecológico (NEP), fue ideado y probado por el sociólogo medioambiental estadounidense Riley Dunlap desde finales de la década de los 90. Fue diseñado para medir las actitudes de las personas hacia el medio ambiente mediante un instrumento de encuesta (escala) compuesto por 15 ítems. Posteriormente fue modificada de 15 a 10 ítems por Manoli, Johnson y Dunlap en 2007. Estos investigadores desarrollaron el Nuevo Paradigma Ecológico para Niños (NEP-C). En este cuestionario se pide a los y las participantes que indiquen hasta qué punto están de acuerdo con las afirmaciones mediante el uso de una escala de Likert de 1 a 5. Las respuestas a estas afirmaciones se pueden utilizar para construir medidas estadísticas relacionadas con actitudes hacia el medio ambiente.

La escala NEP se considera una medida válida para medir las actitudes “hacia” el medio ambiente. Para complementar esta escala, Mayer y Franz (2004) desarrollaron la escala *Connectedness to Nature* (CNS) (conexión con la naturaleza en inglés), que, en comparación con la escala NEP, investiga de forma más explícita la dimensión afectiva y experiencial con el mundo natural (Ernst y Theimer, 2011). Mayer y Franz (2004) desarrollaron un cuestionario, el *Nature Connectedness Inventory*, centrado en los elementos que parecen influir en las actitudes medioambientales a través de la inclusión de ítems que examinan los sentimientos de los y las participantes cuando están en la naturaleza. El cuestionario utilizado para este estudio utiliza elementos, por sobre todo, de las dos escalas mencionados anteriormente.

Datos del cuestionario: Escuela Creciendo Juntos

En el archivo adjunto (de 10 páginas) se puede ver la comparación entre los datos de la recopilación de datos inicial (Pre) y final (Post):

- los datos Pre sólo se refieren a las respuestas obtenidas en abril y mayo 2023, con un total de 42 respuestas.
- los datos Post (al final del curso escolar) incluyen un total de 12 respuestas.

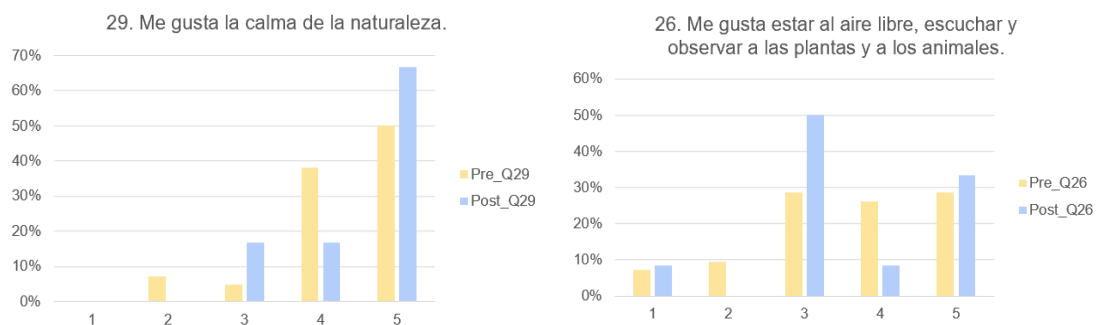
Teniendo en cuenta la baja cantidad de respuestas, en especial al final del curso escolar, los gráficos deben ser observados con cautela. Vale la pena aclarar que se decidió separar los datos Post, y no sumarlos a los Pre y tomarlos como una única medida por dos motivos:

- Por respeto a aquellos/as estudiantes que se tomaron el tiempo de responder el cuestionario, probablemente por segunda vez.
- Para este breve análisis a nivel escuela, si se sumaran las respuestas Pre y Post, es posible que se estuviese dando un mayor peso a las respuestas de las personas que contestaron el Post ya que probablemente también respondieron al Pre.

Hechas estas aclaraciones, estos son solamente algunos de los indicios que se pueden observar en el archivo adjunto:

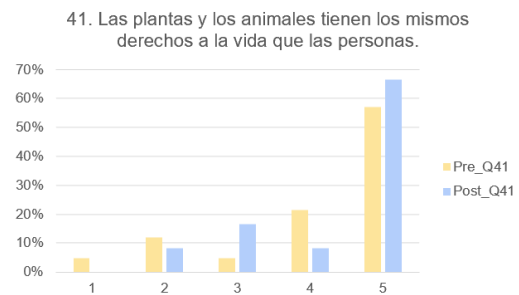
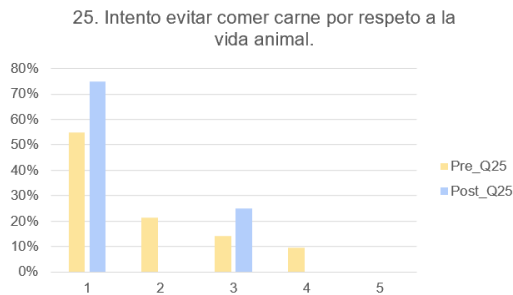
1) Contacto con la naturaleza

Se observa que la mayoría de estudiantes disfruta del contacto con la naturaleza. Esto es un indicio para no dar por descontado y muy positivo con respecto a elementos claves de la sustentabilidad. Cómo facilitar este contacto con elementos naturales es un desafío para instituciones educativas inmersas en contextos urbanos.



2) Contradicciones

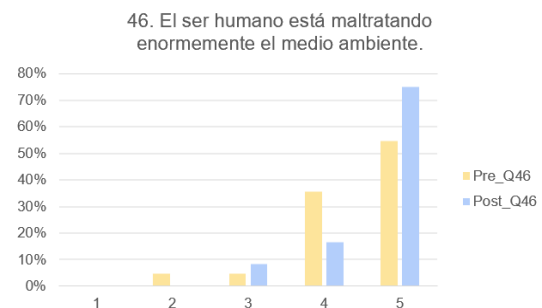
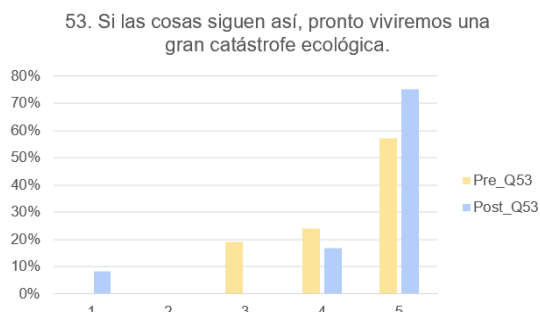
Hay ciertas preguntas que son contradictorias, y esto es parte del diseño del cuestionario. No llama la atención que se observan ciertas discrepancias en algunas respuestas. Por ejemplo:



En este caso, se observa que la gran mayoría de estudiantes dicen que no evitan comer carne por respeto a la vida animal mientras que un porcentaje similar dice que todos los seres vivos tienen los mismos derechos a vivir que los seres humanos. Este tipo de contradicción son a la base de algunas de las tensiones entre sostenibilidad, entendida en su sentido amplio, y nuestro habitus, o maneras de interactuar con nuestro entorno.

3) Eco-ansiedad

La eco-ansiedad es la angustia causada por el ansia que ciertas personas sienten sobre su futuro, en especial considerando los efectos del cambio climático y el subsecuente declive ecológico. Esto se puede observar en las siguientes respuestas:



Lamentablemente, este fenómeno se observa cada vez más en jóvenes de todo el mundo (Coffey et al., 2021).

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Annex V. Analytical Codebook for Interviews

Code	Description	Files	References
Adaptability	References of how the individual or the school have had to adapt to their context.	2	8
Challenges	Mentions of challenges by members of the educational team.	6	20
Collaborations with other projects	References of the school having collaborated with other projects.	3	6
Commitment	References about exceptional commitment by individuals towards the educational project, students or the community	3	6
Contradictions	References about contradictions encountered by members of the educational team.	5	8
Curriculum	References to national or school curricula.	6	14
Educational Practices or vision_non sustainability	References about educational practices that are not related to sustainability per se.	6	35
Motivation	Mentions of motivation by members of the educational team.	6	20
National Politics	References about national politics that transcend the school and its surrounding context.	1	4
Politics at School	References regarding how politics are dealt with as school practices.	3	18
Identity and gender	References to identity or gender issues.	1	3
Political activism	References to political activism, in or out of school.	2	7
Professional Experience	References regarding the professional experience of members of the educational teams.	9	24
School	Mentions of the school community, educational team, policies, practices, student population, governance, history, infrastructure and location.	13	159
Arts at school	Mentions of arts as an instrumental practice at school.	1	3
Community or Context	References to the school community or context.	5	21
Educational Team	References regarding the school's educational team.	6	20
Governance and culture	Mentions of the schools' governance, ethos or institutional culture.	10	24
History	References of the school's history.	5	10
Infrastructure	Mentions of the schools' infrastructure.	4	20
Location	References to the school location and its characteristics.	4	8
National or Regional Ed.	Mentions of national or regional educational policies and/or authorities and how they have influenced school practices.	6	30

Policies or Authorities			
Practices as ideology	School practices that have been adopted as an ideological standpoint.	4	11
Student Population	Mentions of the student population that attends the school.	4	12
Sustainability	References regarding sustainability.	5	14
Definition or ideology	Definition or perspective on the term sustainability.	3	4
Practices	References to practices that are deemed sustainable by interviewee.	7	15
Work Overload	References about work overload by members of the educational team.	1	5

Table 11. Analytical Codebook for Interviews (full list).

Annex VI. Plain Language Statement



PGeneral Information about the Research

Researcher: Diego Posada – diego.posadagonzalez@studenti.unipd.it

Supervisor: Alessio Surian - alessio.surian@unipd.it

Course: PhD in Pedagogical Sciences, Education and Training

Project Name: Crises and Hope Pedagogies: A Cross-Cultural Study

Objective

The goal of this study is to gain an in-depth understanding of the educational and contextual conditions for raising awareness and, most importantly, taking action on sustainability in three educational communities located in Italy, Uruguay, and Argentina. In Uruguay and Argentina, the study will involve students aged 11 to 15, and fieldwork will be conducted in March and April 2023.

Methods

The methods include in-depth and semi-structured interviews (only with adults), workshops with students, field observations, and a survey. The aim of using these four methods is complementarity. Five workshops will be held with students from each educational community. These workshops aim to provide a safe space where students, who might otherwise feel pressured in individual discussions, can interact and reflect on their relationship with nature, climate change, and sustainability. The activities will be chosen with input from the students and teachers, based on their interests. Some proposed activities include Theater of the Oppressed, photojournalism, storytelling, and narrative analysis. Students will also complete an online survey consisting of 17 sociodemographic questions and 36 questions about beliefs and attitudes toward sustainability. Additionally, between 5 and 7 semi-structured interviews will be conducted at each school, representing various stakeholders: administration, teachers, and parents.

Skills and Competencies

It is expected that students will have a space to reflect on their beliefs and attitudes toward sustainability, both from an individual and systemic perspective. Therefore, some of the competencies expected to be developed include critical analysis, systemic reflection, the ability to make collaborative decisions, and a sense of responsibility toward present and future generations.

Results

The results of this research will be shared with the entire educational community in the form of reports, talks, and presentations, to be defined with each educational community.

Dichiarazione informativa per genitori e tutori legali

Ricercatore: Diego Posada – diego.posadagonzalez@studenti.unipd.it

Supervisore: Alessio Surian - alessio.surian@unipd.it

Corso: Dottorato di Ricerca in Scienze Pedagogiche, dell'Educazione e della Formazione

Nome del progetto: Education for Sustainability: a cross-cultural study

Scopo

L'obiettivo di questo studio è la comprensione approfondita delle condizioni educative contestuali per la consapevolezza e - soprattutto - l'azione riguardo alla sostenibilità e alla crisi climatica in tre comunità educative situate in Italia, Uruguay ed Argentina. In Italia, la scuola selezionata è l'Istituto Comprensivo Statale Lozzo Atestino e la fascia di età dei partecipanti è 11-15 anni.

Metodi

I metodi sono interviste approfondite e semi-strutturate, solo con adulti, laboratori con gli studenti, osservazioni sul campo e questionari. L'obiettivo dell'utilizzo di questi quattro metodi è la complementarità. Saranno condotti cinque laboratori con studenti di ciascuna comunità educativa. In Italia, i laboratori si svolgeranno dal 17 novembre al 17 dicembre. L'obiettivo di questi laboratori è fornire uno spazio sicuro agli studenti, che altrimenti potrebbero sentirsi sotto pressione in un colloquio individuale, per discutere di natura, cambiamenti climatici e ambiente. Le attività saranno decise con gli studenti e gli insegnanti secondo loro interessi. Alcune delle attività proposte sono il teatro dell'oppresso, il fotogiornalismo, la narrazione e l'analisi narrativa.

Il questionario sarà condotto online ed è composto da 17 domande socio demografiche e 36 riguardanti le convinzioni e gli atteggiamenti in materia di sostenibilità. In ogni scuola saranno condotte tra 5 e 7 interviste semi-strutturate, con la rappresentanza di diversi stakeholder: direzione, insegnanti, e genitori.

Competenze

Ci si aspetta che gli studenti mettano in discussione le loro convinzioni e i loro atteggiamenti nei confronti della sostenibilità sia da un punto di vista individuale che sistemico. Pertanto, alcune delle competenze potenziate attese sono l'analisi critica, la riflessione sistemica, la capacità di prendere decisioni collaborative e il senso di responsabilità verso le generazioni presenti e future.

Risultati

I risultati di questa ricerca saranno condivisi con l'intera comunità educativa sotto forma di relazioni e presentazioni, da concordare.



Información general sobre investigación

Investigador: Diego Posada – diego.posadagonzalez@studenti.unipd.it

Supervisor: Alessio Surian - alessio.surian@unipd.it

Curso: Doctorado en Ciencias Pedagógicas, educación y formación

Nombre del proyecto: Educación para la Sustentabilidad: un estudio intercultural

Objetivo

El objetivo de este estudio es la comprensión en profundidad de las condiciones educativas contextuales para la concienciación y -sobre todo- la acción respecto a la sustentabilidad en tres comunidades educativas situadas en Italia, Uruguay y Argentina. En Uruguay y Argentina, se trabajará con estudiantes de 11 a 15 años y el trabajo de campo se llevará a cabo en marzo y abril de 2023.

Métodos

Los métodos son entrevistas en profundidad y semiestructuradas sólo con adultos, talleres con estudiantes, observaciones de campo y cuestionarios. El objetivo de utilizar estos cuatro métodos es la complementariedad. Se realizarán cinco talleres con alumnos/as de cada comunidad educativa. El objetivo de estos talleres es proporcionar un espacio seguro para que los/as estudiantes, que de otro modo podrían sentirse presionados en las discusiones individuales, puedan interactuar y reflexionar sobre su relación con la naturaleza, el cambio climático y la sustentabilidad. Las actividades se decidirán con los alumnos y profesores en función de sus intereses. Algunas de las actividades propuestas son el teatro del oprimido, el fotoperiodismo, la narración y el análisis narrativo. Los/as estudiantes harán un cuestionario se realizará online, el cual consta de 17 preguntas sociodemográficas y 36 preguntas sobre creencias y actitudes hacia la sostenibilidad. Por otro lado, se realizarán entre 5 y 7 entrevistas semiestructuradas en cada escuela, con representación de los diferentes actores: dirección, profesores/as y padres/madres.

Habilidades y competencias

Se espera que los estudiantes tengan un espacio de reflexión sobre sus creencias y actitudes hacia la sostenibilidad tanto desde una perspectiva individual como sistémica. Por lo tanto, algunas de las competencias que se esperan trabajar son el análisis crítico, la reflexión sistémica, la capacidad de tomar decisiones en colaboración y el sentido de la responsabilidad hacia las generaciones presentes y futuras.

Resultados

Los resultados de esta investigación se compartirán con toda la comunidad educativa en forma de informes, charlas y presentaciones, a definir en cada comunidad educativa.

Annex VII. Consent Forms

Project Title: “Sustainable Education: an Intercultural Study”

Researcher: Diego Posada González

Supervisor: Dr. Alessio Surian

Declaration

I declare that I have read and understood the “Plain Language Statement” that was provided to me. I understand that my participation is voluntary and that I have the freedom to withdraw my consent to participate at any time. I am aware that all individuals participating in the research will be referred to by a pseudonym in the analysis and final report. My decision to participate or not participate in the study will not affect my employment status or my child's academic situation in any way.

Data Use and Storage

All names and data that could be used to identify individuals will be anonymized.

All material and data will be treated as confidential and stored in a secure location.

Personal data will be destroyed once the project is completed.

Materials and data may be used in publications, both in print and online.

I waive my copyright over any data collected as part of this project.

I am aware that other authorized researchers may use my words in publications, reports, websites, only if they comply with the confidentiality conditions outlined in this document.

Please check the appropriate box with a cross (x):

I consent to the recording of interviews. ☐

I DO NOT consent to the recording of interviews. ☐

I agree to take part in this research project. ☐

I DO NOT agree to take part in this research project. ☐

Name: _____

Signature: _____

Date: _____

If you have any questions about the research, you can contact me at diego.posadagonzalez@studenti.unipd.it or the thesis supervisor at alessio.surian@unipd.it.

Student Consent Form

Education for Sustainability: an Intercultural Study

I would like to know if you would like to participate in the workshops focused on sustainability. I want you to know that you are free to choose whether or not to participate in the activities, as you prefer. Do you allow me to record, take notes, and use the materials you produce during the workshops, such as drawings, stories, etc.?

Please indicate your answer:



Can I share with others what we work on in the workshops? I will not mention your name or anything that identifies you.

Please indicate your answer:



Please write your full name. Thank you!

For parents or legal guardians only:

I authorize my child's participation.

Full Name: _____

Signature: _____

Date: _____

If you have any questions or comments about the research, you can contact me at this email: diego.posadagonzalez@studenti.unipd.it



Formulario de Consentimiento - Adultos

Nombre del proyecto: “Educación Sustentable: un estudio intercultural”

Investigador: Diego Posada González

Supervisor: Dr. Alessio Surian

Declaración

Declaro que he leído y comprendo la “Declaración Informativa en Lenguaje Sencillo” que se me ha brindado. Comprendo que mi participación es voluntaria y que tengo la libertad de retirar mi consentimiento de participación en cualquier momento. Soy consciente que todas las personas que participen en la investigación serán referidas a través de un seudónimo en el análisis y trabajo final. Mi decisión de participar o no participar en el estudio no afectará de manera alguna mi situación laboral o la situación académica de mi hijo/a.

Uso y almacenamiento de datos

Todos los nombres y datos que pudieran ser utilizados para identificar a individuos serán anonimizados. Todo el material y datos serán considerados confidencial y se guardarán en un lugar seguro. Los datos de carácter personal serán destruidos una vez concluido el proyecto. Los materiales y datos podrán ser utilizados en publicaciones, tanto impresas como en línea. Renuncio a mis derechos de autor sobre cualquier dato recolectado como parte de este proyecto. Soy consciente que otros investigadores autorizados pueden utilizar mis palabras en publicaciones, informes, páginas web, solo en caso que se atengan a las condiciones de confidencialidad de la información dispuestas en este documento.

Por favor marque con una cruz (x) el casillero que corresponda:

Doy mi consentimiento a la grabación de las entrevistas. ☐

NO doy mi consentimiento a la grabación de las entrevistas. ☐

Acepto tomar parte de este proyecto de investigación. ☐

NO acepto tomar parte de este proyecto de investigación. ☐

Nombre: _____

Firma: _____

Fecha : _____

Módulo de consentimiento para estudiantes

Educación para la sostenibilidad: un estudio intercultural

Me gustaría saber si te gustaría participar en los talleres enfocados en la sostenibilidad. Quiero que sepas que eres libre de participar o no en las actividades, como prefieras. Me permitirás grabar, tomar notas y utilizar los materiales que produzcas durante los talleres, como dibujos, historias, etc?

Señala tu respuesta:



¿Puedo contarle a otras personas lo que trabajamos en los talleres? No mencionaré tu nombre ni nada que te identifique.

Señala tu respuesta:



Por favor, escribí tu nombre y apellido. Gracias!

Sólo para madres, padres o tutores legales:

Autorizo la participación de mi hijo/a.

Nombre completo _____

Firma _____

Fecha _____

Si tiene alguna pregunta o comentario sobre la investigación, me pueden contactar a este correo electrónico: diego.posadagonzalez@studenti.unipd.it



Modulo di consenso

Nome del progetto: “Education for Sustainability: a cross-cultural study”.

Ricercatore: Diego Posada González

Supervisor: Dr. Alessio Surian

Dichiarazione

Dichiaro di aver letto e compreso la “Dichiarazione informativa in linguaggio semplice” che mi è stata fornita. Sono consapevole che la mia partecipazione è volontaria e che sono libero di ritirare il mio consenso a partecipare in qualsiasi momento. Sono consapevole che tutte le persone che partecipano alla ricerca saranno indicate con uno pseudonimo nell'analisi e nel documento finale. La mia decisione di partecipare o meno allo studio non influirà in alcun modo sulla mia situazione lavorativa o sulla situazione scolastica di mio figlio.

Utilizzo e conservazione dei dati

Tutti i nomi e i dati che potrebbero essere utilizzati per identificare le persone saranno resi anonimi. Tutto il materiale e i dati saranno trattati in modo riservato e conservati in un luogo sicuro. I dati personali saranno distrutti al termine del progetto. I materiali e i dati possono essere utilizzati in pubblicazioni, sia cartacee che online. Rinuncio ai diritti d'autore sui dati raccolti nell'ambito di questo progetto. Sono consapevole che altri ricercatori autorizzati possono utilizzare le mie parole in pubblicazioni, relazioni, siti web, solo se rispettano le condizioni di riservatezza delle informazioni stabilite in questo documento.

Si prega di apporre una croce (x) nella casella appropriata:

Acconsento alla registrazione delle interviste. ☐

NON acconsento alla registrazione delle interviste. ☐

Accetto di partecipare a questo progetto di ricerca. ☐

NON accetto di partecipare a questo progetto di ricerca. ☐

Nome: _____

Firma: _____

Data: _____

Modulo di consenso - Studenti

Educazione alla Sostenibilità: uno studio interculturale

Vorrei sapere se desiderate partecipare ai cinque workshop incentrati sulla sostenibilità. Voglio che tu lo sappia che sei siete liberi di partecipare o meno alle attività, come preferite. Mi permettete di registrare, prendere appunti e utilizzare i materiali che producite durante i laboratori, come disegni, racconti, ecc. Cerchiare la risposta:



Posso dire ad altre persone su cosa abbiamo lavorato nei laboratori? Non menzionerò il vostro nome o qualcosa che vi identifichi. Cerchiare la risposta:



Per favore scrivi il tuo nome e cognome nella casella. Grazie! ☺

Solo per genitori o tutori:

Acconsento alla partecipazione di mio/a figlio/a.

Nome e cognome _____

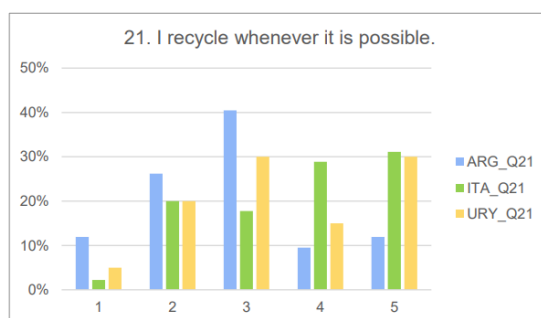
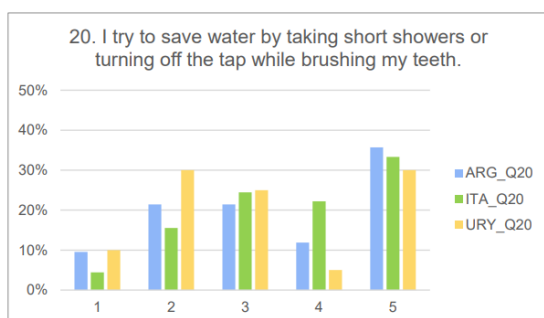
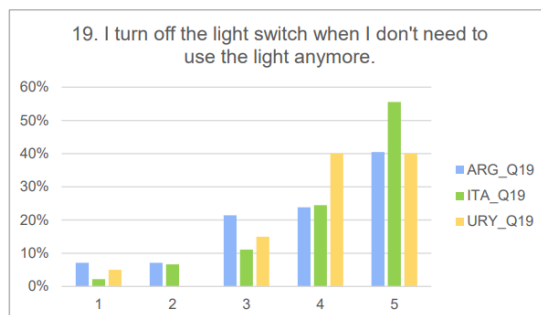
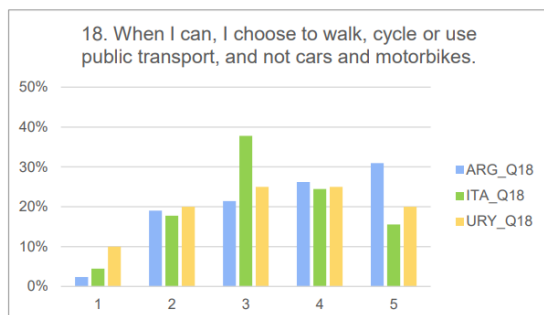
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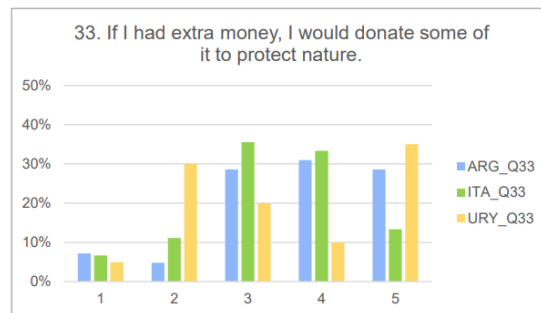
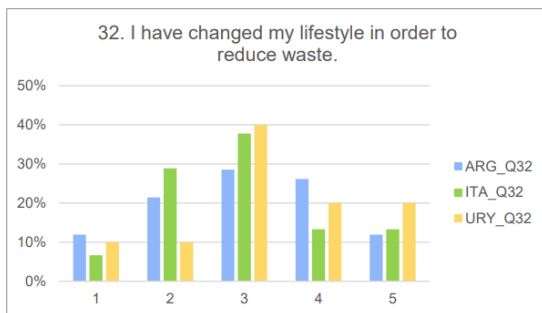
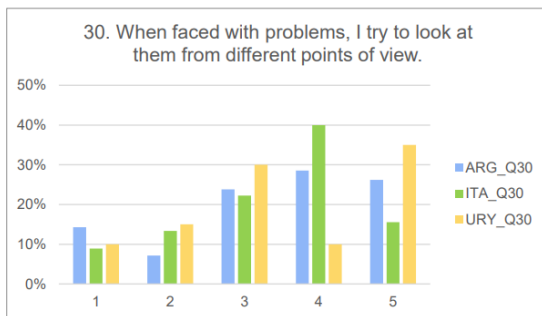
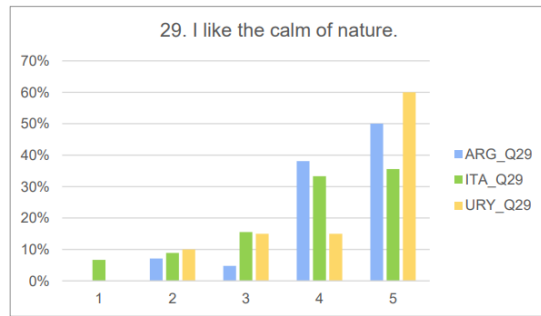
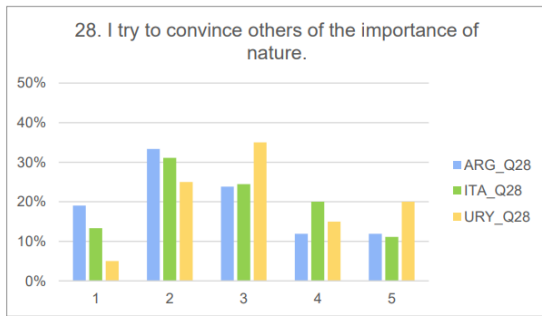
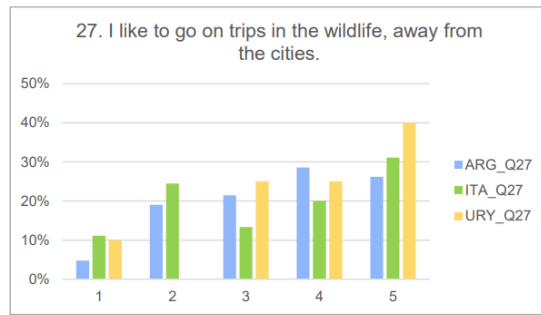
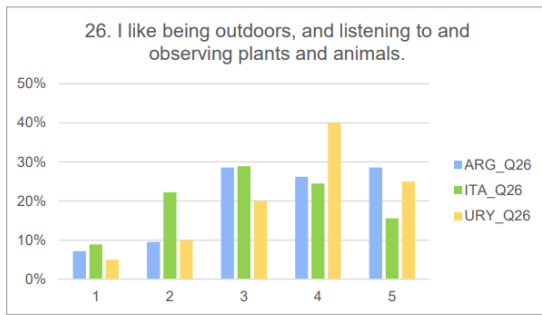
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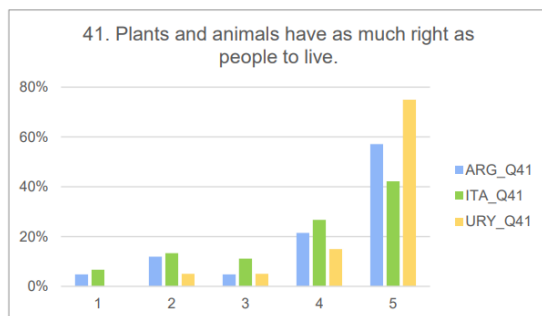
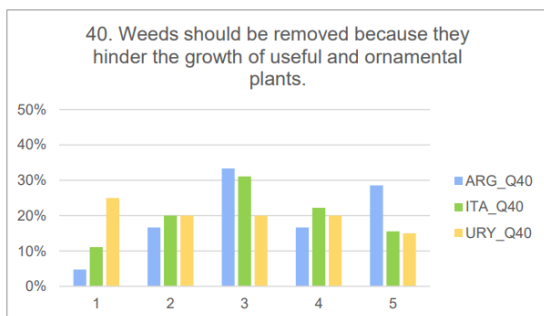
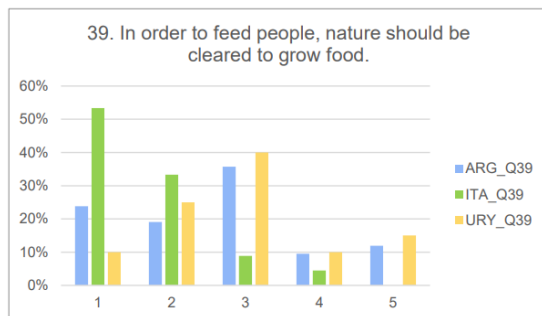
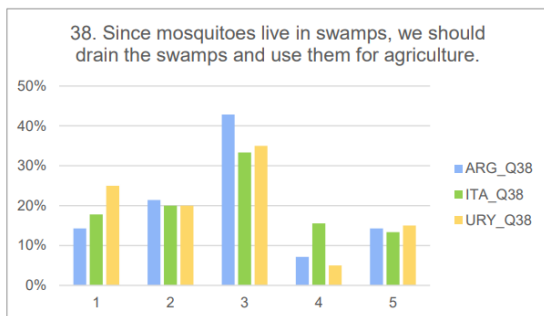
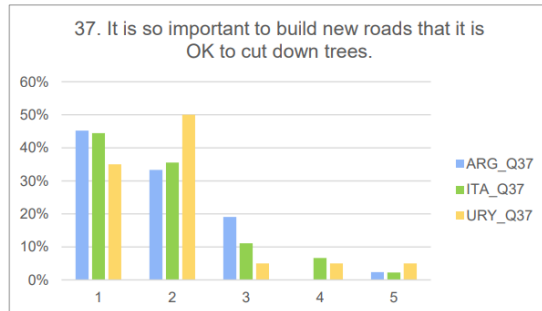
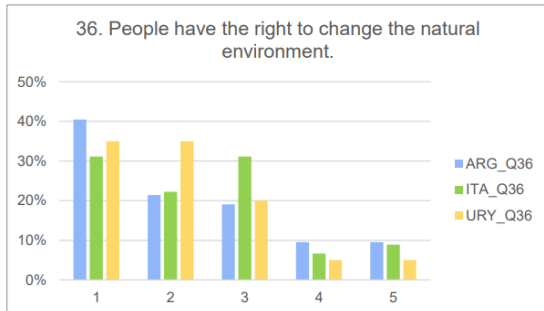
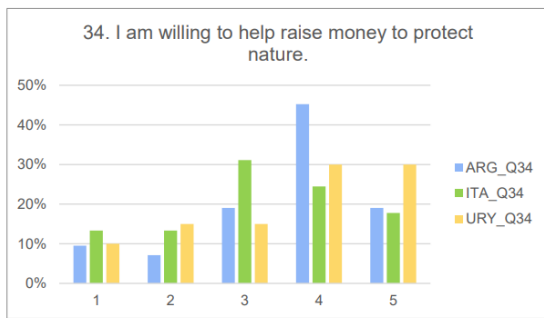
Annex VIII. Survey Responses and Data Analysis

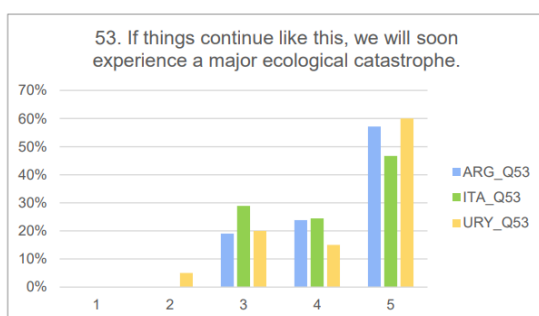
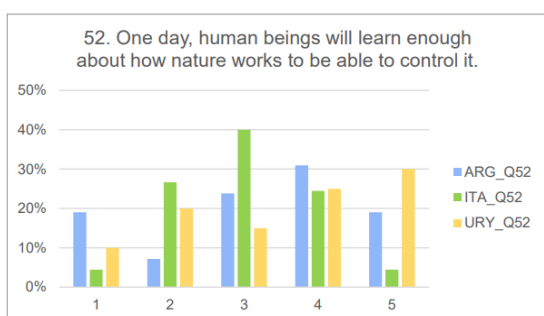
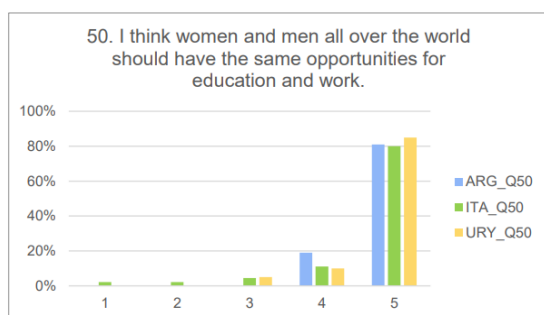
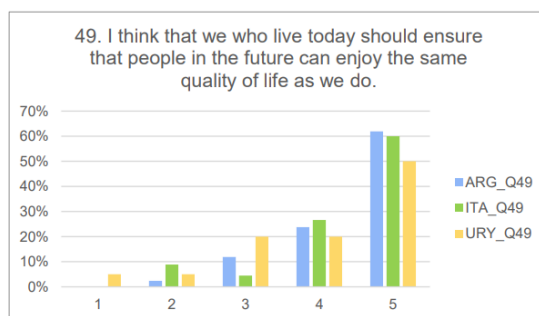
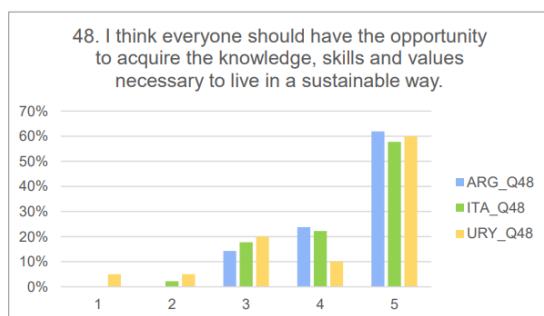
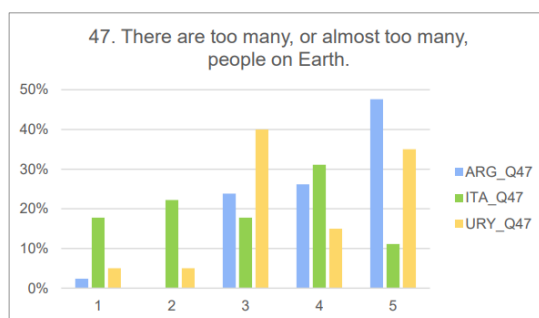
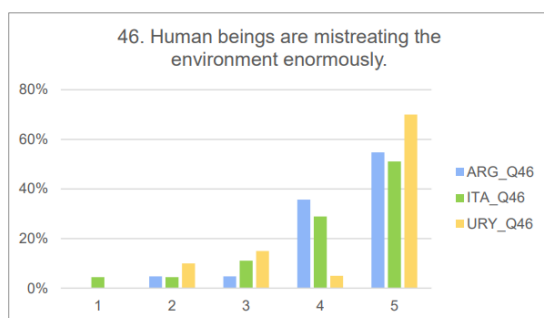
Students' Responses Overview

The following graphs provide an overview of the answers provided for questions 18-53 by students in the three schools. The responses have been transformed into percentages for comparative purposes.









Student responses reveal interesting contradictions inherent in sustainability issues. For example, in response to Question 25, “When I eat, I try to avoid meat out of respect for animal life,” a significant majority of students from three schools disagreed or strongly disagreed (ARG: 76%; ITA: 84%; URY: 75%). Conversely, for Question 41, “Plants and animals have as much right as people to live,” the majority of students (ARG: 76%; ITA: 68%; URY: 90%) either agreed or strongly agreed. This presents a paradox; it is contradictory to acknowledge that living beings possess an equal right to live while simultaneously asserting a lack of effort to avoid consuming them. It is clear, though, that in the three cultural contexts in which the school communities are

immersed, eating meat is the norm. For instance, when during workshops I was asked about my habits, and I mentioned I follow a vegetarian diet, most students were surprised, if not shocked. It is not fair, nor reasonable, to ask children and teenagers to individually fight against cultural norms, and habitus (Bourdieu), that are predominant in their family and social contexts. However, the fact that students acknowledge that plants and animals have the same right as human beings to live, provides hope. It may be the crack in the door through which epistemological transforming learning opportunities (Sterling, 2011) might flourish.

Annex IX. Cross-case survey analysis: Gender

In order to learn if there were any significant statistical differences in responses based on gender regardless of the school, a two-tailed t-test was conducted. In total there were 57 male responses and 45 female responses. There were 5 responses from individuals who did not identify as male or female. These responses were excluded from the gender-based analysis. The specific responses included: “I’d rather not answer”; “I identify with another gender”. The rationale behind excluding these answers from this analysis is purely due to the low number of respondents in this survey. Based on this analysis, there is a statistically significant difference between genders regardless of the school only in Question 49 “I think that we who live today should ensure that people in the future can enjoy the same quality of life as we do”. The following table summarises the results:

Question	T-Statistic	P-Value	Male mean	Male Std Dev	Female Mean	Female Std Dev
18	-0.5	0.61	3.37	1.16	3.49	1.22
19	-0.08	0.93	4.07	1.05	4.09	1.24
20	0.22	0.82	3.53	1.36	3.47	1.32
21	0.41	0.69	3.37	1.34	3.27	1.14
22	0.53	0.59	3.21	1.52	3.04	1.61
23	0.34	0.73	2.53	1.26	2.44	1.12
24	-0.27	0.78	2.88	1.42	2.96	1.43
25	-1.39	0.17	1.54	0.80	1.82	1.21
26	-1.79	0.07	3.26	1.16	3.69	1.22
27	-0.06	0.95	3.56	1.31	3.58	1.27
28	-1.05	0.29	2.74	1.14	3.00	1.38
29	0.14	0.89	4.14	0.97	4.11	1.19
30	1.71	0.09	3.65	1.29	3.22	1.20
31	0.45	0.65	3.47	0.98	3.38	1.17
32	1.45	0.15	3.21	1.06	2.87	1.32
33	-0.87	0.38	3.44	1.13	3.64	1.23
34	-0.38	0.70	3.37	1.17	3.47	1.38
35	1.56	0.12	3.49	1.47	3.02	1.56
36	-1.86	0.07	2.05	1.19	2.51	1.29
37	-0.93	0.35	1.77	0.82	1.96	1.17
38	1.07	0.29	3.00	1.20	2.73	1.30
39	0.11	0.91	2.32	1.28	2.29	1.18

40	1.18	0.24	3.35	1.22	3.04	1.40
41	1.12	0.27	4.21	1.10	3.93	1.40
42	-0.60	0.55	1.67	0.91	1.78	0.93
43	0.30	0.76	3.81	1.17	3.73	1.27
44	0.30	0.76	2.46	1.39	2.38	1.15
45	1.71	0.09	3.68	1.05	3.31	1.14
46	0.21	0.83	4.35	0.99	4.31	0.87
47	0.05	0.96	3.61	1.25	3.60	1.32
48	1.48	0.14	4.51	0.87	4.24	0.93
49	2.22	0.03	4.56	0.80	4.16	1.04
50	-0.142	0.89	4.74	0.74	4.76	0.53
51	0.71	0.48	3.46	1.18	3.29	1.18
52	0.33	0.74	3.19	1.26	3.11	1.19
53	0.65	0.52	4.33	0.85	4.22	0.88

Table 12. Gender Differences across cases.

Question 49 is the only question in which the p value is below 0.05 while the T-statistical value is 2.22 which reinforces the hypothesis of a statistically significant difference. Statistical differences are assessed through the t-statistic. A small t-statistic (close to 0, typically between -1 and 1) suggests weak evidence against the null hypothesis, meaning the observed difference between group means is relatively small in relation to the data variability (Field, 2013). Moderate t-statistics, typically between -2 and 2, may indicate some evidence against the null hypothesis, but whether it reaches statistical significance depends on degrees of freedom and the significance level (Cohen, 1988). A large t-statistic, generally above ± 2 , signals stronger evidence against the null hypothesis, suggesting a significant difference between groups, particularly if the corresponding p-value is below the chosen significance threshold. Table 11 below synthesises the mean per gender, the p-value and T-statistic.

Question	T-Statistic	P-Value	Male mean	Male Std Dev	Female Mean	Female Std Dev
49	2.22	0.03	4.56	0.80	4.16	1.04

Table 13. Question 49 analysis.

As it can be observed in the table, the mean for male students is higher than that of female students (4.56 vs 4.16), which means that even though students generally agree with the statement, male students agree with the sentence to a higher degree than female students.

Intra-case Survey Analysis: Gender Differences

To determine if there are statistically significant differences between genders for each question, a t-test was performed for each question per case. This test was done to determine if the differences in means between males and females are statistically significant¹⁷. It is common practice to assume that a $p < 0.05$ implies that there is a statistically significant difference. The following table includes the mean per gender and p-value for each of the schools. Highlighted in green are the four instances of $p < 0.05$, which means there is a statistically significant difference.

Question Number	ARG Male Mean	ARG Female Mean	ARG p-value	ITA Male Mean	ITA Female Mean	ITA p-value	URY Male Mean	URY Female Mean	URY p-value
18	3.71	3.67	0.90	3.21	3.40	0.57	3.08	3.29	0.75
19	4.05	3.61	0.30	4.0	4.65	0.03	4.25	3.71	0.28
20	3.57	3.33	0.61	3.54	3.8	0.50	3.42	2.86	0.43
21	2.9	2.78	0.74	3.75	3.65	0.78	3.42	3.43	0.99
22	2.81	2.22	0.23	3.67	4.2	0.12	3.0	1.86	0.19
23	2.62	3.17	0.16	2.38	1.8	0.07	2.67	2.43	0.70
24	2.67	2.83	0.74	3.38	3.15	0.58	2.25	2.71	0.45
25	1.48	2.06	0.08	1.46	1.7	0.46	1.83	1.57	0.51
26	3.52	3.67	0.72	2.79	3.6	0.03	3.75	4.0	0.60
27	3.38	3.72	0.39	3.5	3.3	0.64	4.0	4.0	1.00
28	2.38	2.89	0.23	2.83	2.95	0.75	3.17	3.43	0.66
29	4.33	4.33	1.00	3.83	3.85	0.96	4.42	4.29	0.78
30	3.81	3.0	0.07	3.58	3.3	0.41	3.5	3.57	0.92
31	3.24	3.39	0.68	3.33	3.2	0.67	4.17	3.86	0.49
32	3.19	2.89	0.46	3.12	2.75	0.27	3.42	3.14	0.66
33	3.48	4.11	0.09	3.38	3.3	0.82	3.5	3.43	0.92
34	3.38	3.83	0.25	3.21	3.1	0.78	3.67	3.57	0.89

¹⁷ Only one student in Italy stated that they preferred not to share their gender.

35	3.57	2.78	0.11	3.58	3.05	0.22	3.17	3.57	0.64
36	1.9	2.61	0.11	2.25	2.45	0.59	1.92	2.43	0.36
37	1.67	1.89	0.46	1.92	1.85	0.83	1.67	2.43	0.14
38	3.19	2.67	0.17	2.88	2.95	0.85	2.92	2.29	0.35
39	3.0	2.33	0.11	1.42	1.95	0.03	2.92	3.14	0.70
40	3.76	3.28	0.23	3.12	3.1	0.95	3.08	2.29	0.27
41	3.95	4.28	0.43	4.17	3.45	0.07	4.75	4.43	0.43
42	2.05	1.61	0.16	1.54	1.95	0.15	1.25	1.71	0.21
43	3.81	3.94	0.76	3.67	3.9	0.39	4.08	2.71	0.07
44	2.76	2.39	0.43	2.25	2.35	0.75	2.33	2.43	0.90
45	3.38	3.06	0.36	3.92	3.4	0.10	3.75	3.71	0.95
46	4.43	4.44	0.95	4.29	4.2	0.76	4.33	4.29	0.93
47	4.24	4.22	0.96	3.21	2.75	0.25	3.33	4.43	0.05
48	4.62	4.39	0.35	4.42	4.3	0.66	4.5	3.71	0.19
49	4.67	4.28	0.13	4.67	4.1	0.04	4.17	4.0	0.78
50	4.86	4.78	0.53	4.54	4.8	0.33	4.92	4.57	0.18
51	3.52	3.5	0.96	3.58	3.3	0.33	3.08	2.71	0.54
52	3.48	2.94	0.25	2.96	2.9	0.83	3.17	4.14	0.14
53	4.33	4.44	0.68	4.33	4.05	0.28	4.33	4.14	0.70

Table 14. Gender differences within cases.

The p-value is significant i.e. below 0.05 only in four questions in School Lozzo Atestino (ITA); Questions 19, 26, 39, and 49 (N female students= 20; N male students = 24). We can observe the means by gender, variance and p value in detail for each question in Table 13 below:

	ITA Question 19		ITA Question 26		ITA Question 39		ITA Question 49	
	Female	Male	Female	Male	Female	Male	Female	Male
Mean	4.65	4.00	3.60	2.79	1.95	1.42	4.10	4.67

Variance	0.66	1.13	1.52	1.22	1.00	0.34	1.46	0.23
t Stat	2.24		2.30		2.21		-2.11	
P(T<=t) two-tail	0.03		0.03		0.03		0.04	

Table 15. Italy Gender Differences t-Tests: Two-Sample Assuming Unequal Variances.

The two-tailed P was conducted because the focus is in differences between genders and no prior hypothesis was considered e.g. female students score higher than male students.

As it can be observed above, in the case of questions 19 and 26, Italian female students agreed to a higher degree with both statements: Question 19 “I turn off the light switch when I don't need to use the light anymore”, and Question 26 “I like being outdoors and listening to and observing plants and animals”. These can be considered individual attitudes and behaviours. Question 39 is “In order to feed people. nature should be cleared to grow food” and we can observe that male students disagree with the statement stronger than female students (mean is 1.42 vs 1.95). This question was also one of the ones with greatest variance between countries. Last, question 49 was “I think that we who live today should ensure that people in the future can enjoy the same quality of life as we do” where males agreed with the statement to a greater extent than females (mean is 4.67 vs 4.10).

Annex X. Survey Questions

Socio-demographic section

Question Number	Survey question
1	How old are you?
2	What gender do you identify with?
3	What school do you go to?
4a	What class/grade are you in?
4b	Where do you live? (Country)
5	Where do you live? - in a city, in a semi-rural area or the countryside, on hills, in the mountains
6	I live with (please mention the people and animals you live with)
7	I go to school (mostly) - on foot, by bike, on public transport, by car or motorbike.
8	What do your parents do for a living?
9	Do you practice any sports in your free time?
10	What sport(s) do you play?
11	Do you do volunteer work in your free time?
12	What volunteering activities do you do?
13	What do you do in your free time?
14	My favourite singer/group is...
15	My favourite book is...
16	My favourite game is...
17	My favourite place is...

Table 16. Sociodemographic survey questions.

In the following sections a 1-5 Likert scale was employed, with 1 indicating “Never” for questions 18-32 or “I strongly disagree” for questions 33-53, and 5 representing “Always” for questions 18-32 or “I strongly agree” for questions 33-53.

Ecological Footprint and Human-Nature Relationship Sections:

Question Number	Survey question
18	When I can, I choose to walk, cycle or use public transport, and not cars and motorbikes.
19	I turn off the light switch when I don't need to use the light anymore.
20	I try to save water by taking short showers or turning off the tap while brushing my teeth.
21	I recycle whenever it is possible.
22	I separate food waste from other waste.
23	I buy second hand when I shop.
24	I avoid buying from companies with a bad reputation for how they treat their employees and the environment.
25	When I eat I try to avoid meat out of respect for animal life.
26	I like being outdoors, and listening to and observing plants and animals.
27	I like to go on trips in the wildlife, away from the cities.
28	I try to convince others of the importance of nature.
29	I like the calm of nature.
30	When faced with problems, I try to look at them from different points of view.
31	I think about how to live in a way that respects the environment.
32	I have changed my lifestyle in order to reduce waste.
33	If I had extra money, I would donate some of it to protect nature.
34	I am willing to help raise money to protect nature.
35	I like lawn grass better than a place where flowers grow on their own.
36	People have the right to change the natural environment.
37	It is so important to build new roads that it is OK to cut down trees.

38	Since mosquitoes live in swamps, we should drain the swamps and use them for agriculture.
39	In order to feed people, nature should be cleared to grow food.
40	Weeds should be removed because they hinder the growth of useful and ornamental plants.
41	Plants and animals have as much right as people to live.
42	People should rule over the rest of nature.
43	People must still obey the laws of nature.
44	Nature is strong enough to handle the negative effects of modern developed countries.
45	When people modify nature, the results are negative.
46	Human beings are mistreating the environment enormously.
47	There are too many, or almost too many, people on Earth.
48	I think everyone should have the opportunity to acquire the knowledge, skills and values necessary to live in a sustainable way.
49	I think that we who live today should ensure that people in the future can enjoy the same quality of life as we do.
50	I think women and men all over the world should have the same opportunities for education and work.
51	Human intelligence and skills will ensure that we do not ruin the Earth.
52	One day, human beings will learn enough about how nature works to be able to control it.
53	If things continue like this, we will soon experience a major ecological catastrophe.

Table 17. Ecological Footprint and Human Nature Relationship Survey Questions.