### The Youth and the Ecological Transition. The emblematic educational value from UCSC CLIC-PLAN and PMI RISK ADAPT research projects

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### Abstract

The civil societies' cultural heritage and the future of Education for the younger generations pass through the orientation to the good life, with and for the other in fair institutions, through a sustainable development that calls into question awareness for the gravity of the state of the environment. On March 15, 2019, over one million students deserted the classrooms to take to the streets in an unprecedented all-day strike, taking part in over two thousand protests in 128 countries against inertia in the face of *climate change*, clamoring for a planetary transformation leading to a post-carbon era. Both the systemic and the global nature of environmental challenges imply that, to achieve long-term sustainability objectives, profound structural changes to social systems are required. Those related to food, energy, housing and mobility are of particular importance. Youth and ecological transition, the thematic diptych at the center of the essay, represents today an emblematic educational field. Achieving such a transition will require much more than an increase in efficiency in the use of raw materials. The interdisciplinary researches CLIC-PLAN and PMI RISK ADAPT, supported by the Catholic University of the Sacred Heart and of strategic interest for the university, attest to the relevance of a wide and motivated participation in defining new ways to face the ecological transition, for and with the younger generations.

Keywords: Education; ecological transition; youth; climate change.

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# 1. The outcry of the younger generations, an educational pact for integral ecology

According to the United Nations Intergovernmental Panel on Climate Change (IPCC, 2018), the increasing emissions of greenhouse gases into the atmosphere caused by anthropogenic activities contribute to the increasingly frequent occurrence of extreme climatic events. We are facing a global emergency, climate change, the cause of which is closely related to the use of fossil fuels<sup>1</sup>. The concept of *progress*, which in the past has often justified the indiscriminate exploitation of environmental resources, takes on today a problematic meaning such that the term itself is used reluctantly or in any case articulated in a convenient way to avoid any idealized genericity. In the second decade of the third millennium, the Earth reveals the extreme and compromised fragility of its ecosystem: the idea of unlimited and arbitrary development, typical of a certain socio-economic and utilitarian positivism, legitimized those ecological disasters whose gravity no one dares to doubt. Living in our time implies listening to the appeal launched by scientists and the younger generations. It is a project that should be handled with care and responsibility. This appeal is an extraordinarily significant *outcry* and contribute to accelerate the transition towards decarbonization and the circular economy. Learning to solve the climate crisis is a challenge of humanity's survival. The educational courses that will be develop and promote constitute a mission of extraordinary importance for the entire planet. Focusing on the extraordinary demand expressed by the youth, between human development and the environment, implies rebuilding an Educational Pact between generations, in the name of an integral ecology. In the perspective of the pedagogy of human development, «the task of the adult educational world is to make young people increasingly more active protagonists in building tomorrow, bringing to value their creative potential and their transformative talents» (Sandrini, 2019, p. 29).

To overcome a short-term view, which currently dominates political and economic thought, pedagogical reflection is called upon to favour the affirmation of a *hermeneutic and planning educational awareness* with respect to the notion of sustainability (Birbes, 2017). Embracing integrated, global perspectives or the safeguarding of the planet implies some indispensable perspectives of reference. Respect for the environment has to be estimated as a *value* connected with the idea of education, before representing a pragmatic attitude suggested by the severity of the degradation. This intentional

<sup>&</sup>lt;sup>1</sup> See in this regard, IPCC (2018). *Global Warming of 1,5°C*. Genéve: World Meteorological Organisation e UNEP (2019). *Emissions Gap Report 2019*. Nairobi: UNEP.

consciousness must lead to the elaboration of a way to be in the world<sup>2</sup> that is different from the characteristics of western culture. Substantial changes will be needed both in mainstreamed policies and practices and this conscience shall be rooted in a widespread, competent pedagogical design and training of people. Interpreting the legal rights of the biosphere or considering the environment in a manner consistent with the ethical principles of human action is an essential condition for hypothesizing, in the future, life on Earth. Knowledge will have to develop a critical interpretation of that reductionism according to which natural ecosystems have a dignity that is merely instrumental to the use and prosperity of the human species.

The acquisition of knowledge and technical skills must be guided by intentional, conscious ethical-educational choices, irreducibly alternative to that model of socio-economic development which, in the name of misleading needs of the global market, claims to dictate its laws in every part of the world. An alliance is required, an educational pact between generations to save the common home.

The popularity of the international movement *Fridays for Future*, launched by the Swedish girl Greta Thunberg to raise awareness of the catastrophic effects of climate change, represents a radical challenge to the current themes, models, tools of research that involves *hard sciences and humanities* and in a peculiar way the pedagogical discourse, a challenge launched by children, between genders and generations, to the world of adults that holds the levers of economic-financial and political-cultural power (Thunberg, 2019).

Scientific estimates by the United Nations Intergovernmental Panel on Climate Change (IPCC) support a dramatic hypothesis: there are less than ten years to remedy our mistakes and to protect the Earth<sup>3</sup>. Within this interval, unprecedented changes in society will have to take place, including a reduction of at least 50% in CO2 emissions. A global compact on education is today closely related to a renewed framework of reference values (Bornatici, 2019). Our schools, training agencies and institutions, university research centers are called upon to define a new – effective – idea of environmental, social and economic sustainability on a global scale (Vacchelli, 2019). In a world that changes suddenly, it is a question of rebuilding an educational pact between cultures and generations, which means contributing to a governance of international relations based on a model of fraternity for the prosperity of the human family. A digital humanism and ethics for the age of artificial intelligence are directly involved in giving life to an educational pact for integral ecology. «The theme of 'emerging and convergent' technologies must

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<sup>&</sup>lt;sup>2</sup> See MALAVASI P. (1998). *L'impegno ontologico della pedagogia. In dialogo* con *Paul Ricœur*, pp. 124-234. Brescia: La Scuola.

<sup>&</sup>lt;sup>3</sup> www.ipcc.ch/2019/.

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be made the subject of programmatic and incisive attention on the part of pedagogy, in dialogue with *hard sciences and human sciences*» (Malavasi, 2019a, p. 159).

An *educational pact for integral ecology* (Malavasi, 2019b) is a challenge and a commitment in the daily life contexts, a challenge and commitment at the foundation of freedom, justice and peace. This calls into question parents, teachers and all those who have responsibilities within organizations, amidst ambiguities and contradictions. Peace is an edifice to be built continuously, a common path, a patient work of research. Opening and pursuing a path of reconciliation is clearly a challenging undertaking, especially as the interests in the relations with people, communities and nations are multiple and contradictory. The *concept of peace* expresses, among other things, a dual aspiration of equality and participation, essential for promoting a democratic society centred on education for living together. In this framework, individual rights are highlighted alongside the recognition of duties towards others. In the global context, the pressing technological development has to be *educated* to a progressive opening to form of economic activities characterized by shares of gratuity and communion.

*Educating for the alliance between humanity and the environment* is the Second Vatican Council message which the *Encyclical Laudato si'* championed for the contemporary world: a spirit of joy and hope. Without hiding open problems such as the equitable universal distribution of goods, but in the sign of trust in education and ecological spirituality (Giuliodori and Malavasi, 2016). In the sign of the fraternity of the one human family<sup>4</sup>.

The theme of *Education for the alliance between humanity and the environment* has become more relevant in the public debate, in multidisciplinary scientific research and in citizens' practices. Education and dialogue on the environment pass through a different perspective, a thought and educational program capable of fostering an effective encounter between peoples and cultures, given that particularisms and the specialization of sciences often tend to transform themselves into isolation and absolutization of knowledge and points of view.

The initiative, announced in 2019 by Pope Francis, of a *global educational pact* is a fundamental path for the construction of a fraternal world, in peace and justice. Joining the *Global Compact on Education*, for and with the younger generations, means integrating families, communities, schools, institutions,

<sup>&</sup>lt;sup>4</sup> The encyclical of Pope Francis, *Fratelli tutti*, in 2020, resumes inspiration five years after and develops the method of the previous encyclical, *Laudato si'*. In this regard, see Bornatici S., Galeri P., Gaspar Y., Malavasi P. and Vacchelli O., edited by (2020). *Laudato si'+5, Fratelli tutti. Human Development. A great cultural, spiritual, political, economic, educational challenge.* Lecce-Brescia: Pensa MultiMedia.

religions, humanity. All of them has to form mature individuals capable of creative processes, capable of hospitality. Persons open to the value of transcendence, intergenerational solidarity for a new educational culture expressing a common responsibility that involves all components of society (Francesco, 2019).

Laudato si' international Communities are amongst these emblematic practices in which free associations of citizens develop. Born in 2017, at the initiative of Domenico Pompili, bishop of Rieti, and of Carlin Petrini, founder of the *Slow Food* movement, recognizing the central role of education for the construction of a common future in the spirit of the Encyclical, these associations promote a new model of thought and the transmission of knowledge. With an accentuated youth leadership, they are inclusive and not limited by belief, political orientation, nationality, social background, in homage to the work of St. Francis of Assisi, prophetic interpreter of a life in harmony with humanity and nature<sup>5</sup>.

Another reference is to the international initiative *Education, Earth, Nature* undertaken by the pedagogist L. Dozza in Bressanone and promoted by the Free University of Bolzano, together with qualified institutional partners (Dozza, 2019). An annual symposium articulated on interdisciplinary dialogue, on training and didactic planning, on research innovation, on scientific production which, starting from 2015, has gradually involved teachers and students of all levels, administrators and exponents of the international scientific community, managers of associations and entrepreneurs, on the alliance between environmental ecology and human ecology.

The cultural movements transforming reality that arose from the *Global Compact on Education*, from the *Laudato si' Communities* and the *Education*, *Earth and Nature* symposiums, although very different in nature and purpose, are based on integral ecology and on the ethics of caring to teach and to learn the alliance between humanity and the environment, to educate planetary citizen, to learn how to connect rather than to separate.

Knowledge, complexity, sustainability, with the different meanings assumed by these terms, call for an environmental pedagogy in dialogue with civil society to imagine and implement new ways to inhabit the Earth. In the following paragraph, attention will be paid to two transdisciplinary researches on key issues of the ecological transition – adaptation and climate risk – supported by the Catholic University of the Sacred Heart to discuss the value and relevance of a broad and motivated participation in defining new ways to face the ecological transition, for and with the younger generations.

<sup>&</sup>lt;sup>5</sup> https://comunitalaudatosi.org/il-progetto/.

## 2. Between communities and enterprises, researches for adaptation and climate risk

The European Green Deal ambition is to perambulate a more sustainable economic growth for the Union. This path aims to be decoupled from resource use, neutral by 2050 for CO<sub>2</sub> emissions and able to protect against environmental risks while also preserving and improving natural capital, the health and well-being of its citizens. For Europe, in line with the United Nations Sustainable Development Goals (United Union, 2015), the ecological transition must be just and inclusive, such as not to exclude anyone. «Since it will bring substantial change, active public participation and confidence in the transition is paramount if policies are to work and be accepted» (European Commission, 2019, p. 2). Consequently, there is a need to launch participatory processes for a new pact that involves all: citizens, national, regional, local authorities, civil society and industry, institutions. The development of this pact is accompanied by information sharing actions to understand the threats and challenges posed by environmental degradation. Beyond the status-quo, it also focuses on the search for solutions; from the creation of *physical and virtual* spaces for collaboration where citizens can express their ideas and their creativity through individual and collective initiatives; from the formation of attitudes, skills and competences to favour initiatives from below.

The decisive challenge of the century, namely, the way in which development is achieved by balancing social, economic and environmental assessments (EEA, 2019), is challenged with a climate-proof pact. Through the emergency of global warming some sudden and irreversible changes could severely compromise nature's ability to provide essential ecosystem services, such as food supply; maintaining clean water and fertile soils and protection against natural disasters. The acceleration of climate tropicalization will most likely be associated with a risks' increase for the most vulnerable groups in our society, with significant differences at the local level. Current development trajectories are fundamentally unsustainable and the time available to reverse the trend is running out. The main social systems underlying climatic and environmental pressures must be transformed. It is necessary to intervene on technologies, production and consumption models that are associated with our primary needs such as food, energy and mobility, linked to our lifestyle. Governance must guide, promote and facilitate innovation and transformation of the whole society towards long-term sustainability objectives, including in risk management and adaptation. It will take new and different knowledge, drawing from multiple disciplines and types of knowledge production; forecasting methods to involve people in participatory processes on the

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assessment of risks and opportunities; changes that link knowledge to action, including new skills.

Since 2016, the Catholic University of the Sacred Heart, through a corpus of strategic research programs, has moved towards the goal of active participation of social systems for a climate-proof ecological transition. Two projects, CLIC-PLAN and PMI RISK ADAPT, directed by the "Alta Scuola per l'Ambiente" - that address multidisciplinary research, training and consultancy - will be presented in this contribution. The first research project, which concluded in 2019, explored the topic of *climate adaptation* in close contact with local communities. It engaged the citizens by sharing the IPCC forecast scenarios with respect to global warming as well as other analyses at a territorial level to detect environmental impacts. From these local analyses as well as the evaluation of functioning activities, "soft solutions" were studied from a bottom-up approach by developing and co-constructing hypotheses of adaptation plans. The second research, currently in progress, focuses on enhancing learnings gained from the previous project at the design level, specifically multidisciplinary content, capacity for involvement and methodological steps. This project, unlike the previous one, is targeted towards businesses to tackle together the issue of climate risk that an ecological transition necessarily entails.

Whether it is within communities or businesses, the involvement of the youth is crucial, as they are the representatives of the civil society but also in the roles of entrepreneurs and workers, volunteer leaders and participants. They are aware of their role for safeguarding the future and act as principal actors of associative movements, administrators of local public affairs and influencers in peer-to-peer networks. Accompanying the transformations and designing projects offer the possibility of giving life to fruitful intergenerational crossings for real chances of change, which reconcile profit and the common good, which make sustainability a factor of competitive development and a collective resource of resilience (Braga, 2020).

*CLIC-PLAN* – "*Changing Climate: Local Adaptation Plan for sub-alpine lake districts with a strong commitment to tourism*" was a project that focused on the paradigm of *adaptation to climate change*. Indeed, these communities need to limit the damage associated with global warming while also exploiting any opportunities. This is based on the assessment by the IPCC and the projected irreversible change on our trajectory on the medium-short term (IPCC, 2014; IPCC, 2018). Adaptation acts on the reduction of human, socio-economic and communities' vulnerabilities, as well as the determination of risks' factors which require work to improve resilience. The concept of resilience is understood as «the ability not only to withstand and cope challenges but also to undergo transitions in a sustainable, fair, and democratic

manner» (European Commission, 2020, p. 2). The adaptive approach is one of the new development frontiers of the European Framework Program for Research and Innovation 2021-2027 *Horizon Europe*, which aims at the mission "adaptation to climate change including societal transformation" (Council of the European Union, 2021).

The CLIC-PLAN research project took place, thanks to the collaboration with local administrations, in five municipalities on the Brescia side of Lake Garda, involving three faculties at the academic level: Education Sciences; Mathematical, Physical and Natural Sciences; Political and Social Sciences. As mentioned above, this project was initiated by carrying a study on the scenarios of climate change in the lake basin (carried out through literature) which was later discussed with the local population. Additional analyses of environmental, social and economic territorial data (through bathymetry of the lake and administration of citizenship questionnaires) allowed to refine the future risks more specifically at a local level. Communities were engaged in focus groups, awareness-raising events. The activities aimed to jointly define participatory adaptation policies and practices. Some sectors of interest for the lakeside communities were considered, specifically: technical-political, public utilities, education, sports, agriculture, fishing, commercial, industrial, cultural, socioeducational, logistics, voluntary work and associations, commercial, public safety and health. The tourism (contact persons for accommodation, catering, navigation, commerce, sports and leisure facilities, agricultural cooperatives) was also involved since Lake Garda is a geographic destination with high environmental attractiveness and the tourism is an important sector of employment for young people.

Citizens recognized 66 impacts of climate change that influence the economic, social and environmental system. From the project, 43 soft adaptation solutions were identified, those were relatively inexpensive from an economic point of view, really achievable and duplicable. By way of example only, there is a decrease in the typical local agro-food production (e.g., oil), the variation of the tourist season (with an extension towards the autumn months), heat management problems (e.g., for campsites and for school facilities) and extreme events, including the spread of fires. Among the soft solutions: the planting of trees to cope with heat islands, the implementation of new tourist services (e.g., indoor sports), the implementation of devices for the reduction of water waste and for energy efficiency of accommodation facilities.

The structure of the entire research (which took place between 2016 and 2019) was characterized by an "educational approach" with the aim of increasing knowledge and skills of citizens and professionals within the area to find solutions that directly address environmental emergencies. This agrees with what is expressed today by the PNR 2021-2027 (National Research

Program) where the item "Training and scientific dissemination on climate change" supports the need for universities to establish training processes and new approaches for an expected impact in terms of increasing knowledge and awareness on the environmental, ecological, economic, social and health consequences of climate change (Ministero dell'Università e della Ricerca, 2020, p. 125).

From the findings and knowledge developed during the previous research project, the 2020 PMI RISK ADAPT – "Adapting to climate change risk in Italian small and medium enterprises: training human resources and managing physical and financial risks as well as risks linked to the transition towards sustainable development" was launched. It pertains to the issue of including the risk of climate change in the planning and programming choices of Italian small and medium-sized enterprises (SMEs), working on its vulnerabilities and adaptation strategies providing replicable operational indications.

There are many risk categories that companies will face with increasing frequency due to global warming. In particular (TCFD, 2017): the *physical impacts* of climate change and the related financial risks from extreme weather events, such as fires or heat waves, were both identified as particularly important. These can damage manufacturing facilities and disrupt the value chain. The transition to a low-carbon economy can cause other risks, including *compliance, market* and *technological risks*.

Four University's Faculties are involved in this research; Mathematical, Physical and Natural Sciences (for the tourism-hospitality and environmental services sectors), Agricultural, food and environmental Sciences (for the agrifood chain of industrial tomatoes), Banking, financial and insurance Sciences (for the insurance sector) and Education Sciences. The latter is collaborating with consulting firms, which in turn work with client companies (for example, in the field of fire prevention, occupational safety, hygiene and the environment), to identify some characterizing and generalizable elements of training courses, able to place the generative role of human resources at the center of transformation processes, in the context of including climate risk in the strategic-organizational choices of small and medium-sized enterprises.

«Dedicating resources to training starts from investing in human capital for the development of skills capable of making people and organizations resilient, that is, able to withstand difficulties, sometimes sudden and of considerable gravity, to transform them into opportunities, even managing to increase the value of the organization» (Malavasi, 2017, pp. 124-125). Learning, capacity building, the acquisition of new knowledge and skills on the climate, suitable for full and substantial participation in the life of the company, can help generate numerous competitive advantages. Involving the entire human body of the business organization in adapting to climate risk, it can also favour the

birth of new *green jobs*, the latter understood both in terms of green increased demand occupations, *green* enhanced skills occupations and new and emerging green occupations. In fact, the alteration of the climate will have a significant impact in terms of employment, so much so that it is essential to analyse the scenarios to convert them into job opportunities.

Training can be considered with a multi-level approach including different levels and dimensions (Vischi, 2019). From a base level, it shall aim to raise awareness of climate change whilst specialist information on an *ad-hoc* topic of adaptation to climate risks in the company could be thought as a higher level. This training could take on a specific purpose such as improving the production process in the context of green economy and as such considered as a professional reconversion. Training is one of the connecting links between higher university education, work and business, a contribution with an educational value for the ecological transition and for the youth.

### References

- Birbes C., editor (2017). Trame di sostenibilità. Pedagogia dell'ambiente, sviluppo umano, responsabilità sociale. Lecce-Brescia: Pensa MultiMedia.
- Bornatici S. (2019). Per un villaggio dell'educazione. Le giovani generazioni tra beni relazionali e impegno civico. In: P. Malavasi, editor, Un patto educativo per l'ecologia integrale. Il Villaggio per la Terra. Lecce-Brescia: Pensa MultiMedia.
- Bornatici S., Galeri P., Gaspar Y., Malavasi P. and Vacchelli O., editors (2020). Laudato si' +5, Fratelli tutti. Human Development. A great cultural, spiritual, political, economic, educational challenge. Lecce-Brescia: Pensa MultiMedia.
- Braga C. (2020). Agenda ONU 2030. Conciliare per la formazione allo sviluppo sostenibile. *Quaderni Fondazione Vigorelli*, 6: 23-35.
- Council of the European Union (2021). Establishing the Specific Programme implementing Horizon Europe the Framework Programme for Research and Innovation, and repealing Decision 2013/743/EU. N. 764, 10.05.2021.
- Dozza L., editor (2019). Maestra Natura. Per una pedagogia esperienziale e copartecipata. Bergamo: Zeroseiup.
- EEA (2019). The European environment. State and outlook 2020. Executive summary. Copenaghen: European Environment Agency.
- European Commission (2019). *The European Green Deal*. COM 640, Bruxelles, 11.12.2019.
- European Commission (2020). 2020 Strategic foresight report. Charting the course towards a more resilient Europe. COM 493, Bruxelles, 09.09.2020.
- Francesco (2019). Messaggio per un patto educativo globale. Document available on the website: https://www.vatican.va/content/francesco/it/messages/pontmessages/2019/documents/papa-francesco\_20190912\_messaggio-pattoeducativo.html (03.09.2021).

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- Giuliodori C. and Malavasi P., editors (2016). *Ecologia integrale. Ricerca, formazione, conversione*. Milano: Vita e Pensiero.
- IPCC (2014). *Climate Change 2014: Synthesis Report.* Genève: Intergovernmental Panel on Climate Change.
- IPCC (2018). *Global warming of 1.5°C*. Genève: World Meteorological Organization. Document available on the website: www.ipcc.ch/2019/\_(03.09.2021).
- Malavasi P. (1998). L'impegno ontologico della pedagogia. In dialogo con\_Paul Ricœur. Brescia: La Scuola.
- Malavasi P. (2017). Verso una pedagogia dell'impresa. Creativa, libera, partecipativa, solidale. In: G. Alessandrini, editor, *Atlante di pedagogia del lavoro*. Milano: FrancoAngeli.
- Malavasi P. (2019a). *Educare robot? Pedagogia dell'intelligenza artificiale*. Milano: Vita e Pensiero.
- Malavasi P., editor (2019b). Un patto educativo per l'ecologia integrale. Il Villaggio per la Terra. Lecce-Brescia: Pensa MultiMedia.
- Ministero dell'Università e della Ricerca (2020). *Programma nazionale per la ricerca 2021-2027*. Delibera n. 74 del Comitato interministeriale per la programmazione economica, 15.12.2020.
- Sandrini S. (2019), Coordinamento e progettazione pedagogica. Giovani, villaggio, educazione. In: P. Malavasi, editor, Un patto educativo per l'ecologia integrale. Il Villaggio per la Terra. Lecce-Brescia: Pensa MultiMedia.
- TCFD (2017). Final report: Recommendations of the task force on climate-related financial disclosures. Basel: Task Force on Climate related Financial Disclosures.
- Thunberg G. (2019). La nostra casa è in fiamme (traduz. dallo svedese). Milano: Mondadori.
- UNEP (2019). *Emissions Gap Report 2019*. Nairobi: UNEP. Document available on the website: www.unric.org/it/rapporto-unep-emissions-gap-2019/ (03.09.2021).
- United Nations (2015). *Transforming our world: the 2030 Agenda for Sustainable Development.* Document available on the website: https://www.un.org/ga/search/view\_doc.asp?symbol=A/RES/70/1&Lang=E (10.09.2021).
- Vacchelli O. (2019). Le università per città inclusive. In P. Malavasi, editor, Un patto educativo per l'ecologia integrale. Il Villaggio per la Terra. Lecce-Brescia: Pensa MultiMedia.
- Vischi A. (2019). *Pedagogia dell'impresa, lavoro educativo, formazione*. Lecce-Brescia: Pensa MultiMedia.

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