

# THE IMPORTANCE OF YOUNGSTERS' RESPONSIBLE ACTION IN THE URBAN ENVIRONMENT: AN EXPERIENCE OF STREET CO-DESIGN

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### ABSTRACT

By 2030, 5 billion people will live in cities asking for more transport, resources (energy, water, etc.) and waste systems. While cities generate economic growth, they are also responsible for 70% of global CO<sub>2</sub> emissions. For containing this problem, it is necessary that all urban actors (citizens, local authorities, research bodies, professional and production world) become more aware of the relationship between local/individual choices and global/collective challenges. So, a trans-disciplinary approach, which integrates research and practice, through the cooperation between various working and educational realities, and considers citizens as "knowledge producers" and "community builders" in urban redevelopment processes, has to be used. Therefore, citizens, especially the younger generations, have to be involved in urban co-design processes, as users but also as bearers of knowledge. This paper reports an experience carried out in a project funded by the ESF-PON 2014-2020 "For schools, skills and environments for learning: enhancement of global citizenship skills". One of the modules of this project, aimed at enhancing the active role of secondary school students and their ability to identify problems and solutions through collective reflection, focused on the re-appropriation of the street spaces facing the entrance of a historic school in Rome. Two different proposals (low and medium/high budget), aimed at improving users' quality of life, stemmed from theoretical lessons, applying a requirement/performance approach, and surveys and laboratory sessions, including: the devising and administration of an online questionnaire to define local problems; a brainstorming to propose possible solutions; some sketches. The proposals, displayed in the school to involve all the students, were presented to the municipal authorities which expressed the intention to carry on the design for future realization.

**KEYWORDS** \_ *youngsters' participation, co-design, responsive street design, requirement / performance approach*

### INTRODUCTION

European urban areas already host a large percentage of population (66% in Central and Eastern European Countries, 75% in Western European Countries); nevertheless, urbanisation is constantly increasing. The role of cities is significant, both nationally and worldwide, in terms of natural resource exploitation, waste production, soil, water and air pollution. In many European cities, the high resource consumption, climate change and private transport increase (80% of the total motorized transport) are the factors threatening most the urban environment and, consequently, the health and

well-being of those living there. While annual lead concentrations have been dropping sharply since the 1990s, thanks to the reduction of petrol lead additives, in some urban areas air pollution due to traffic (SO<sub>2</sub>, CO, NO<sub>x</sub>, O<sub>3</sub> and particulates) keeps exceeding the maximum values indicated in the WHO guidelines, especially with high temperatures. Furthermore, in the 24 hours, about 65% of the population is exposed to high levels of noise (LEq exceeding 55dB (A) and about 1.4% is exposed to unacceptable levels of noise (LEq exceeding 75dB (A) due to road traffic (EEA, 2019).

Rome, too, presents various types of problems causing a decrease in the liveability of the urban environment. First of all, a huge flow of vehicles, about 1 million 800 thousand vehicles (623 cars and 123 motorcycles per thousand inhabitants), high speed and traffic congestion that not only increase the risk of accidents but also produce high levels of air pollution: in 2018 the concentration of nitrogen dioxide had an average value of 67 µg/m<sup>3</sup> and the amount of PM<sub>10</sub> was 30 µg/m<sup>3</sup>. The ever increasing air and surface temperature, due to the combined presence of construction materials with a high solar radiation absorption and sealed surfaces, preventing evaporative cooling, but also to the "urban canyon effect" and residual heat, causes the Urban Heat Island (UHI) effect: urban areas that are significantly warmer than the surrounding rural areas, especially at night. This phenomenon and the high level of air and noise pollution, due to vehicular traffic, represent a threat to human health and ecosystem. Second, public transport system cannot satisfy the mobility needs of large flows of citizens and visitors; cycle paths do not offer an alternative as they are not yet a real network; the large use of private motorized vehicles creates a high demand for on-street parking, which leads to the invasion of most of the public spaces, making them unsuitable for slow mobility and the many activities traditionally taking place along with it. Furthermore, the widespread arrogance of drivers, lacking civic sense, endangers pedestrians' and cyclists' safety and their right to move at ease. It is clear that the mobility reorganization, aimed at increasing the liveability levels of the urban environment, is a priority issue on the municipality agenda. There needs to be tools aimed at improving sustainability, both in environmental and social terms, by creating public spaces that are accessible, safe, comfortable, healthy and respectful of everyone's rights and in particular of the most vulnerable users, such as children, the elderly and people with reduced mobility (PRM); doing this requires a cultural change.

### **THE YOUNGSTERS' INVOLVEMENT FOR ACHIEVING CULTURAL CHANGE**

This cultural change can be achieved by the active involvement of the population. Experience has indeed shown that it: helps to proactively manage conflicts, reducing their intensity and turning them into research opportunities; helps, by incorporating the preferences of the affected communities, to come to shared choices, which are perceived as legitimate and fair since they represent the public interest and not a top-down imposition, and therefore prove to be more acceptable and stable; enhances civic culture by making participants to become more aware, responsible and active in the collective sphere, i.e. better citizens; increases their sense of ownership and thus their respect for the common good (Castell, 2013). The reconstruction of the relationship of mutual "care" between citizens and city is indeed central to improving the quality of life and urban space (Doglio, 1995). The approach of transdisciplinary research, integrating different parts of society (practice and academia), is grounded on the awareness that each member or institution of the community has knowledge and talents and that mutual learning is the best tool for problem solving. It therefore considers citizens as "knowledge producers" for the urban development process (Stenberg, 2013) and as "community builders" for the upgrading process (Stenberg, 2012).

2019 was an important year for participation, above all in terms of climate and environmental movements. In the world, millions of people, students and adults, participated to the "Fridays for future" demonstrations urging politicians to act. The younger generations had a major role: the challenges of tomorrow involve indeed young people first, because both the future is their life and they are freer from the influences of modern society, which for years behaved as if the future were no concern of its own. The youngsters are, therefore, the key resource that western societies have for facing

this profound transformation process. It was assumed that young people had disappeared from the participatory arena (Lindström, 2010), but the forms of youth participation today are no longer the traditional ones. In the past, for example, speaking of participation, we would certainly have used three more words: membership, militancy and representation, but today their meaning must be redefined, renewed (Checkoway, 2013). The European Commission issued a document containing guidelines, new channels and forms for the inclusion of young people in participatory processes, with the aim of involving them in decision-making bodies as active and aware citizens. Following previous documents, the Council of the European Union approved the EU Youth Strategy for the years 2019-2027; this "fosters youth participation in democratic life; it also supports social and civic engagement and aims to ensure that all young people have the necessary resources to take part in society" (EC, 2018). Italy also issued tools for youth participation, both at regional and municipal level. The first Regional Youth Council was established by Regional Law (R.L.) in the small Italian region of Molise 40 years ago (R.L. 21/1980). Participatory youth structures have been activated in almost all regions since then; in particular, the Lazio Region promulgated two laws: "Promotion and coordination of youth policies" (R.L. 29/2001) and "Promotion of instruments of the young generations' institutional participation in the local political and administrative life (Regional network of young councils)" (R.L. 20/2007). These tools tend to strengthen the concept that the exercise of participation increases hope for the future and confidence in the possibility of producing change in manifold associative contexts; numerous studies in particular have shown that exercising participation at home or at school affects significantly the strengthening of the perceived self-efficacy in young people (Leone, 2011). Science-based insights, offered by the European Environment Agency's state of environment, underlined the challenges waiting for us and the need for immediate action on everybody's part, focusing on the importance not only "to change thinking" but also "to bring about actual change", implementing best practice "solutions and innovations, both technological and social, [...] while stimulating additional research" and "behavioural shifts", "[...]listening to and engaging citizens" (EEA, 2019).

### **THE EXPERIENCE OF CO-CREATION IN A SECONDARY SCHOOL IN ROME**

The paper describes an experience carried out within a project promoted by one of the historic schools in Rome, the "Liceo Classico Dante Alighieri" (a secondary school specialising in classical studies), approved by the Ministry of Education, University and Research (MIUR) and supported with European Structural Funds - National Operational Program (PON) 2014-2020 "For school, skills and learning environments": "Enhancement of skills of global citizenship". Axis I - Education - European Social Fund (FSE). The Director of the Classical Lyceum, Dr. Maria Urso, responsible for the project, involved different territorial realities in the module "Environmental sustainability and care of spaces and times in social life": the Department of Architecture of Roma Tre University, the Provincial Architects' Chamber of Rome and the Municipality of Rome I Centre in order to activate synergies, share experiences and strengthen the sense of community between users and professionals. In particular, among other activities, the university has a third cultural and social mission, the Architects' Chamber has the task of raising young people's awareness and directing them towards their future, the Municipality has to care for urban maintenance and adaptation in order to meet citizens' daily life requirements and improve performance. The authors were involved as external professor and tutor; over the years, indeed, they both carried out research in the Department of Architecture, dealing with various aspects of environmental sustainability and identifying intervention tools in both buildings and urban design fields. In the latter, the research work was aimed at identifying and, as far as possible, experimenting some tools having the potential to improve inhabitants' quality of life, such as the Environmental Island (Martincigh and Di Guida, 2016), the Urban Accessibility Plan (Lauria, 2014), the strategies using Nature-Based Solutions (Kabisch et al., 2017). Basic and applied research, carried out over the years, has made it possible to confirm that, in big cities, problems related to mobility and parking, air and noise pollution, physical and functional decay and lack

of environmental quality, take on a particular extent in central areas, where goods and services are located. The environmental requalification of these areas is today one of the major issues to be addressed. It is therefore worth focusing the attention on the identification of intervention strategies, methodologies and techniques that are appropriate for addressing urban mobility challenges, and in particular for rebalancing local modal share and promoting pedestrian mobility. The project was an opportunity to integrate the specific contributions of the three involved institutions (which are often assigned to collaborate in the "School-Work Alternation" program concerning the secondary schools: cutting-edge research and technical knowledge, professional experience and regulatory aspects, politics and participation, all aimed at guiding toward the future world of work through an experience of individual and collective growth about a theoretical and practical subject. The intent was also to comply with chapter 28.3 of Agenda 21: "Each local authority should enter into a dialogue with its citizens, local organizations and private enterprises and adopt "a local Agenda 21". Through consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organizations and acquire the information needed for formulating the best strategies". The project therefore aimed at encouraging the young lyceum students to: acquire the concept of global citizenship; increase awareness of the interconnections between local choices and global challenges, and between individual multiple identities and collective identity; enhance the experiential knowledge through practical work on real cases and product realization; enhance the active role of students in identifying problems and solutions through collective reflection and new co-creation and co-design trends, essential for implementing real participatory processes (Gatenby and Cantore, 2018). The ultimate goal was to focus their attention on the strategic objectives of the 2030 Agenda, in particular on: "Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable".

### **THE LABORATORY METHOD OF TEACHING: THE APPLICATION OF VARIOUS APPROACHES**

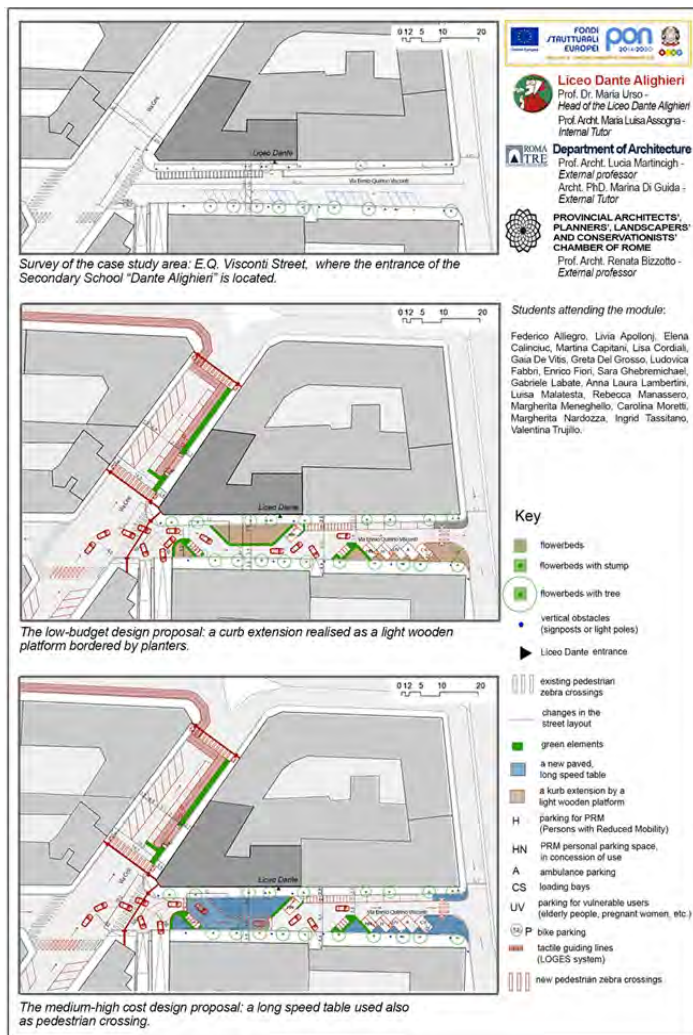
Methodologically, the innovative aspect of the project consisted in the application of the Laboratory Method of Teaching, using various approaches: "project-based learning", "problem-solving" and "cooperative learning". This method has eased the inclusion of students with SLD (specific learning disabilities), mutual help and collaboration among peers, with a view to enhancing the differences. Working together by these methods for creating a product and presenting it externally has allowed students both to enhance their aptitudes and skills, not always emerging from the traditional study of single disciplines, and to develop the competence of "learning to learn" and monitor their learning processes. This activity took place on the "Dante Alighieri" premises, located in a building in Via Ennio Quirino Visconti, in the Prati district, just a few steps away from Rome historical centre. As case study it was chosen a place that could make students feel personally involved. They were therefore asked to analyse the stretch of street in front of the "Liceo Dante" main entrance and think about its possible re-design. The students' wish to re-appropriate the spaces in front of the school for improving the quality of their life and of the other users' was then fuelled, also by arousing their awareness about public spaces being a meeting place between society, culture and environment. They were thus motivated to unravel the complexity of the current situation with the aim of being triggers of the change, identifying the protection of subjective rights, land and dignity of the person as the strengths to prevent inequalities and reinforce social cohesion. The theoretical part of the module was carried out by the external professors (Profs. Archts. Renata Bizzotto and Lucia Martincigh). They first addressed the general approach and introductory issues regarding: urban upgrading and sustainable mobility, environmental quality and natural resources. Then, they addressed specific topics regarding the application to the case study, such as: historical reading of the place, urban survey and graphic restitution techniques, methods for the comprehension of the place and in particular of the accessibility, safety/security, environmental comfort and attractiveness is-

sues, techniques for identifying problems and solutions. They also analysed possible technologies and technical measures, appropriate to control and improve urban living conditions. To apply actually the "problem solving approach" and "environmentally conscious design", in addition to the theoretical communications on the various possibilities of involvement, participatory techniques and practice of listening, a structure of "self-learning" was launched. This involved all the actors in an action which, although time-limited, caused the students to become more aware of the value of their creative ability and to acquire relational and environmental responsibilities. The practical workshop sessions were carried out by the teachers and, mainly, by the external and internal tutors (archts. Marina Di Guida and Maria Luisa Assogna), side by side with the theoretical lessons. They were organised both in classroom and in field activities. Observation and survey started first for enriching the students' and teaching staff's knowledge of the case study, highlighting meanings, unusual aspects and problems; these were later collected in a list, located and described on a map. A questionnaire was designed and, for pursuing digitization objectives, as required by the PON calls, administered online, first to the students of the class attending the module and then to the students of the whole section, to their teachers and some members of the school's staff. The data collected by the questionnaire made it possible to draw up a second list of problems, representative of a wider group of school users. The two lists of problems were integrated and polished by the teachers, in order to organise a brainstorming aimed at making students come up with possible solutions to be explored later. Two topics involved students the most: safety and mobility, meant as the freedom of moving on foot or by bicycle. If the Administration has the task of implementing the necessary and possible changes for both, citizens have to change their behaviour (for example, respecting traffic signs or parking spaces), to assume a different mental attitude towards the city problems, according to a collaborative logic aimed at activating a shared project. In particular, citizens are required to be willing to overturn acquired paradigms, guaranteeing the most vulnerable groups, since "mobility" is ordinarily addressed almost exclusively from the driver's viewpoint and rarely from the pedestrian's and less than ever child/teenager's viewpoints (Brandberg et al., 1999). The results of the questionnaires, revealed a specific attention to the accessibility, organization and maintenance of public spaces, that had been designed to have car parking separated from walking and sojourn spaces, but de facto are invaded by cars, abandoned or privatized. This led students to reflect on the management of these spaces, once they are modified according to their wishes. For the noise and air pollution, detected as a consequence of vehicular traffic, students thought of alternative materials both for pavements (sound-absorbing asphalts and tiles) and for facades (green walls). Communication and presentation techniques were part of the lessons; they were applied by students in the workshop to prepare a final, public presentation. Each student contributed with one or more slides, focusing attention on one aspect of his/her choice: theoretical topics, considerations on the current situation and photos, survey re-design, personal photos or photo-references from internet to illustrate the selected sustainable solutions, sketches and other graphic material for the design hypotheses.

## **THE RESULTS OF THE CO-DESIGN**

The teamwork produced various scenarios. After careful consideration and selection two of them, both meeting the detected requirements, were chosen, designed and proposed to the local administration, as first ideas for the upgrading of the stretch of street in front of the school entrance. They were characterised by technical measures (NACTO, 2013), different for importance and cost of intervention. Both the proposals call for two traffic calming devices aimed at: decreasing the speed, realizing a parvis in front of the school, removing parking in the most crowded area opposite the school. Two consecutive chicanes or one speed platform plus one chicane compel drivers to slow down, by causing them to shift their horizontal path or to climb a ramp, and create a curb extension hosting a greater number of users, greenery and urban furniture. In both proposals, accessibility is improved by: painting zebra crossings; adding ramps and route guidance, by natural guiding lines

or tactile paving, in order to make the pedestrian network accessible for all; providing parking for the most vulnerable users and loading bays. The improvement of the street landscape by design, specific paving, colours, light poles and signs makes the street be autoexplicatory. To meet some more requirements expressed in the brainstorm about cycling mobility, the proposal provides for a new branch of bikeway, starting from the existing one in a nearby important street (via Cicerone) and arriving to the school. Then, in Via Cesi, the carriageway width is reduced in order to keep the car parking on both sides and make room for the bike path and reserved parking, separated from the walkway, strictly reserved to pedestrians, by a green hedge. The low budget proposal suggests that the pedestrian curb extension be made by a light wooden structure, at sidewalk height: light interventions, "feasible at once". The medium/high budget proposal provides for a substantial transformation of the street by a raised platform near the school entrance, occupying the whole width of the street, usable also as pedestrian crossing: a widening of the walkway with textured, permeable and sound-absorbent paving, constituting an amenity for students and passers-by.



\_ Figure 1: The design proposals elaborated within the Module "Environmental sustainability and care of spaces and times in social life" (The figure was composed and graphically reworked by the authors).

During an open meeting on June 10, 2019, both proposals were presented to the representatives of Municipality of Rome I Centre. After a short introduction by the academic group, students addressed their topics. Dr. Anna Vincenzoni, Councillor for the Environmental, Mobility and Urban Décor Policies and Flavia De Gregorio, Municipal Advisor, participated to the debate and expressed their interest communicating to the audience their intention to pursue the issue for a possible future implementation. On January 11, 2020, during the show of "Classical Lyceums' National Night" the proposals were again presented.

## CONCLUSIONS

The laboratory and participatory experience offered the students the occasion to discover the importance of the relation society-inhabitants-territory and of the discussion on the choices to be made with the logic of collective benefits. Dreaming of the future city, we hope it will be full of places where citizens' wishes become true by projects returning to urban spaces their role of valuable collective and identity places. In the short term, schools are the first to be considered since they constitute an extensive network, having programs on civic education, widespread lawfulness and environmental safeguards. It is appropriate to remember that, at the beginning of the century, we were already aware of the importance of including the care for the urban environment in educational programs (Abercrombie, 1921). Being able to experiment concretely and directly the possibility to turn an exclusively individual dimension in favour of a collective and constructive one strengthens the trust in the future and in the chance to change things. Understanding that planning is fundamental for collective and effective actions strengthens the ability to perceive the importance of time and to overcome the short-sightedness typical of who clings to the present. Thus, participation produces a great richness in terms of a "toolbox" that, today more than ever, helps the youngsters grow into citizens who have to live in a society in which the structural and economic pressures force towards an individual dimension. Supporting participatory processes means to give the youngsters a training ground for finding their way, individual and collective, being the latter more suitable to today's changing world.

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