Promoting Active Living and Sports as a Node for Wellbeing

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Abstract
Physical inactivity is associated with various chronic diseases and early death. The pandemic and the economic crisis worsened mental disorders and the inability to cope with stress in healthy ways. People with disabilities may represent a barometer to quantify and assess equal access to sports. A multilevel strategy for the development of both social and physical environments must overcome the 'medical' meaning of health, dealing increasingly with a broader disability culture design. The promotion of an active lifestyle for all is a thread common to design products and services, with several national and international proposals to enable both a physical and service-based accessibility to wellness opportunities. A short field research conducted during the pandemic, starting from a visual campaign for athletes with Down syndrome, suggested a wide-ranging reflection on sports as amusement, on inclusive language and on equal participation in sports opportunities.
Active Living and Sports for Resilient Citizens

Active lifestyles for people has been one of the main topics in recent years, due to the restrictions of the pandemic, and should be a key point for the future if we analyse the international data on the impact of worsening mental (Banks et al., 2021) and physical health care on both people's lifestyle and on the economic costs of health (EPRS, 2021).

Before the pandemic, physical inactivity was already associated with various chronic diseases and early death. These factors, together with the ageing population, are placing extreme pressure on the costs of healthcare with a conservative estimated cost of physical inactivity on healthcare systems globally of (INT$) 54 billion in 2013 (Ding et al., 2016).

A recent survey by the American Psychological Association revealed that inactivity due to forced isolation quickly became a real “inability to cope in healthy ways with the stresses of the pandemic” (APA, 2021) reporting undesired amounts of weight gain, alcohol abuse and sleep disorders, in parallel with a 47% rate of delayed or cancelled health care services and a 53% loss of physical activity.

At the end of 2021, the World Health Organization pointed to multiple stress factors and gaps in care, with a 25% increase in mental disorders (WHO, 2021). People who were already experiencing different types of frailty, such as mental or physical disabilities, as well as prior social isolation, lost all chances of help from an overburdened public service and in many cases lost all contact with friends, neighbours or possible care support. The isolation became a state of mind and not just a physical matter.

The 2006 UN Convention on the Rights of Persons with Disabilities was a key policy reference but the EU only ratified it in 2020, and there is no centralised data collection on the participation of people with disabilities in sports at the EU level (EPTT, 2021). However, statistics about the participation of disabled people in sports depend on the background of each Country, in terms of accessibility and social participation. Only 20/25% of people with special needs attend a sport-related activity at least once a week, with a much greater decrease as a result of ageing, compared to other people; disabled adults are almost twice as likely as non-disabled adults to be physically inactive.

The data highlights the need for a multilevel strategy to improve people’s resilience and wellbeing, developing both social and physical environments, reaching beyond the ‘medical’ meaning of health, dealing with other disciplines (Frascara, 2002) and working more on the Social Determinants of Health, which include age and the conditions in which people are born, grow, live and work (US ODPHP, 2022). Indeed, this is a typical intersectional focus, because healthcare is often affected by other policies inherent to education, housing, business, transportation, etc. (UN Habitat, 2021).

In March 2021 the European Commission adopted the Strategy for the Rights of Persons with Disabilities 2021-2030, in parallel with other existing EU initiatives such as Sport Erasmus+, improving the mobility of sports personnel for educational purposes (i.e. FORTHE project), or AGE Platform Europe, to frame actions within a solidarity-between-generations approach.
Inclusion/cohesion and healthcare are also two of the NextGenerationEU main Missions, as well as the CONI (Italian National Olympic Committee) loans to subsidise the creation and redevelopment of sports facilities, in particular the Sport and Periphery Fund (Legislative Decree 185/2015), the Sport Bonus tax credit, the Mortgage Guarantee Fund for private individuals, and the Sport Common Mission 2022.

The Olympic and Paralympic games may be a great way to interest people in sports, but other strategies must be employed to persuade citizens to lead a healthier and more active life.

The literature traditionally stresses the importance of shaping the built environment to guarantee an active lifestyle, increasingly involving architects, urbanists, sociologists and anthropologists to create an urban system in which structures, routes and services cooperate to enhance the health of people (Dorato, 2020). But it is not just a matter of breaking down physical barriers (probably the easiest to overcome). It is also important to provide services and information, designed taking into account the people they are intended for, and to understand, working together with people with specific needs, what kind of environment, activity and management they are looking for (Jaarsma, 2014). People may have physical access to sport facilities but without available teams, services and specific expertise, they do not have the same opportunities to exploit them; the problems are more significant for activities involving people with mental disorders that require specific collaboration (Dickinson, 2020).

The Third Sector is largely innovative in terms of services and ideas, because it generally complements the offer of wide-ranging services (sometimes the lack of services...) by the public administration. The person-centred services, traditionally seen as volunteer or poorly paid jobs, are now seeking real recognition and therefore require new ways to be positioned on the market and of communicating. Some of these experiences slowly reach beyond the national arena to become international models, as was the case with KEEN (Kids Enjoy Exercise Now), established in the USA in 1984 to promote programs of physical activity and fun to empower young people with disabilities coached by volunteers.

Design to Foster Elite Disability Sports Together with Disabled People

Sporting events for people with disabilities date back to 1924, when the first Silent Games (now Deaflympics) took place in Paris. They later evolved in many other events from a recreational, to a rehabilitative and then a competitive approach; the Paralympic Games are the most important, though they are not open to every type of disability (Peers, 2012).

The more skilled and involved people with disabilities become, the greater the demand for support equipment during physical activity, not necessarily using a prosthetic approach. Throughout the pandemic, the WHO promoted specific campaigns to help people manage the confinement, with the slogan #HealthyAtHome. This contributed to the development of new sports-related trends and
applications with remote interactions, which people suffering from chronic diseases, struggling to leave home, have appreciated (and would like to strengthen) because they are functional and support socialisation. Sporting activities not unavoidably take place outdoors or in sports facilities, even for people with special demands who do not require technological tools but a rearrangement of services or the introduction of new ones.

The role of design is fundamental to explore value-driven solutions that identify hidden demands, encouraging a participatory and interdisciplinary approach (Margolin, 2002); however, stakeholders must be involved during the strategic planning and not just to provide products or services when decisions have been already made (Noel, 2017).

Healthy policies don’t exclude innovation in technology and services (digital systems, equipment, etc.) but they recommend a holistic assessment and measurement of the capacity of services and systems to deliver integrated care at the community level. The growth of technological potential towards more-than-human futures (Maffei, 2022) makes it physically perceivable that everything is connected, but without a social perspective and a widespread appropriation of technologies (Ehn, 2014), these opportunities can be viewed with suspicion as being elitist, and cause increased marginalisation and social conflict. The PLEINAIR project recently investigated this domain, arranging methodologies and tools focused on a network of free and inclusive parks for intergenerational recreational and physical activities. Co-funded by the Emilia-Romagna region within the industrial research field, through the EU POR FESR 2014-2020, PLENAIR exploited OSO (Outdoor Smart Objects) to foster active lifestyles in inclusive open-air spaces (Mincolelli, 2021). Fig. 1

![Fig. 1](https://www.pleinairpark.it)
The growth of a new paradigm based on celebrating the difference rather than encouraging people to conform to norms defined as ableist, helped to consolidate a unitary claim of those who want to see their diversity recognized, talking about intersectionality (Crenshaw, 1989), as a way to boost community-based resilience capabilities.

The work done by groups and associations of disabled people to ensure compliance with legal requirements, fought against the erroneous perspective of accessibility intended as a concession of one group to people of another. The international movement supporting disability culture design is a reaction against proposals focused on enabling normal and productive behaviours (in a medical, functional, and assistive sense), claiming to be bearers of design skills, for which functionality is experiential and aesthetic, and not just a tool to conform to the norm (Hamraie, 2022), provocatively adopting the term Crip (derogatory of cripple) to define themselves (Shew, 2023). Within this movement, many disabled designers and disabled communities refuse the prevalent culture of design thinking because they believe it carries forward negative stereotypes and cliché, even when the message seems to support disabled people. One key discussion is about prosthetic design, in the past a mere imitation of a body part, now increasingly rejected if intended to complete a body (on the contrary body differences are now regarded as biodiversity) or redesigned in shapes, colours and functions that better represent the specific person, or made as temporary and interchangeable, according to daily needs. Prosthetics for sports have been the first to achieve a high level of design and technology, and have come a long way from the carbon fibre blades used by Oscar Pistorius.

We can therefore talk about disabled communities, such as #CriticalAxis, which design their own experience in life settings, using their ability to solve everyday problems, creating new tools, new services and adapting the opportunities offered by AI to focus on their specific way of perceiving space and relations, which are often different and puzzling for the nondisabled. Coming from a bottom-up innovation of networks of individuals and communities, the process is now shifting to the design for microworlds, improving self-referential services and 3D prototypes.

Active living and sports design offers several opportunities for collaboration between disabled people and communities, designers and companies.

Research studies based in Design, Architecture or Engineering Schools usually speculate on specific tools or materials, having in mind an inclusive design approach or designing for people with specific needs. As an example, the E4Sport Interdepartmental Laboratory at the Politecnico di Milano, focused on sporting activities in a broader sense (athlete performance, tools, sports environment and management). E4Sport benefits from the design skills of the TEDH Lab (Technology and Design for Healthcare), whose more recent results include NESTORE, developing technological solutions for the elderly to help them retain a healthy lifestyle, and Pegaso, to promote healthy behaviour in teenagers using a smartphone technology platform.

Initiatives may also stand on networking activities, to promote more direct communication between people and companies/designers, mainly with a bottom-up view, supporting special projects and events to explore new product/service opportunities and to sustain...
inner policies of corporate social responsibility and design-driven innovation (Verganti, 2009). Mention should be made of the work done by Hackability, a non-profit association based in Turin, bringing the desires and creativity of people with special needs together with the skills of designers, makers and digital artisans, using a co-design method and exploiting the opportunities of digital manufacturing. In the corporate field, Nike’s commitment to involve people with disabilities in the design of footwear Fig. 2 probes their specific needs to then shift to unexpressed requirements on a larger scale (kids, athletes, etc.), overlooking however the related controversies about the retail price of shoes, definitely not for all...

![FlyEase shoes](www.nike.com/flyease) are part of a wider set of footwear accessories designed by Nike with people with disabilities, exploring their needs and self-made tricks to propose easy-to-wear shoes for all.

The consolidation of knowledge about design for special needs and Universal Design enabled the birth of many associations, such as EIDD (Design for All Europe) in 1993, then Dfa in Italy, as well as structured professional organisations (such as the Institute for Human Centered Design), offering inclusive design consultancy services as well as groups of expert users ready-to-go (i.e. able to be involved in the processes without preparation on participatory design methods), supporting designers in the analysis of their prototypes. From an industrial point of view, a market has flourished for products
that allow a personal approach to active life and sports, without forgetting design and functionality (see backrests for wheelchairs made by Tarta, in Udine).

In the educational area, in spite of the difficulty of ensuring continuity, there are several interesting international examples such as the Sports Product Design master’s program at the UO School of Art + Design in Portland (Oregon), the multidisciplinary conceptual approach of the Nakamura (or “RadMad”) Disability Lab at UC Berkeley (mainly supported by the initiative of students and researchers with disabilities) and the British collaboration project itDf (improving technologies for Disability futures), funded by a trust. In 2024, based at the Università Roma Tre, the first edition will be held of the inter-university higher education course in Environmental Accessibility, organised by STtDA (Italian Society of Architectural Technology).

A Field Study Focused on a Sports Event for Down Syndrome Athletes

In 2021, in the middle of the pandemic, Ferrara hosted the international event SUDS Open Euro Trigames, involving athletes with Down syndrome. For the School of Design, it was an opportunity to exploit its wide knowledge of Design for All and human factors for health, introducing students to the topic of social interaction and healthy sporting practices, having had direct experience of physical pandemic confinement. The other pivotal issues they explored included the analysis of bias towards people with disabilities (little knowledge about mental illnesses, the image of disability as a category and people with disabilities not seen as athletes), the assessment of service and management boundaries when promoting these kinds of events, and the proposal of a visual design system.

The workshop included 40 hours of class activities, supported by specialists in many different fields (visual design, inclusive communication, corporate identity, universal design, tourism, etc.), and over 40 hours of team-working activities. The 25 students came from both the Degree and the Master School of Design and four of them were graduate students; the workshop was based on the principle of design thinking, using the complete Double-Diamond process including all four stages of discover, define, develop and deliver.

The Discovery stage encompassed the systematic review, classification and selection of examples and case studies, as well as seminars with experts. Using different brainstorming techniques, students collected key words and phrases, listed for the following stages. A basic investigation of the Paralympic games and adaptive sports was conducted, which included a broader overview of the design of sports brands and corporate identities in the last century. After further exploration of the evolution of the modern Olympic games and the impact of visual design, students thought about how to foster understanding across language gaps and cultural, physical and mental divides.

Because it was not possible to deal with international athletes before the competitions, due to the pandemic restrictions, the focus group interview was conducted with sport trainers (both disabled and non-disabled), care-givers and organisers of sporting

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1 www.itdfproject.org
2 Trigames is organised under the umbrella of the international Sports Union for Athletes with Down Syndrome and of the Italian Paralympic Sports Federation of the Intelective Relational (FISDIR), delegated by the Italian Paralympic Committee (CIP); 400 athletes from 18 Countries compete in 8 sports disciplines (www.eurotrigames2021.eu).
3 The workshop was sponsored among others by AIAP (Italian Association for the development of visual communication), the Municipality of Ferrara, CERPA Italia onlus (European Centre for Research and Promotion of Accessibility), SU-DS and FISDIR.
events. Their knowledge concerned strategies for dealing with the barriers encountered every day to support athletes, to work with Public Administrations, to manage sports activities and events.

Within the Define step, students were asked to outline a broad set of concept design proposals, focusing on two main features: the visual system and the dissemination of the event at different scales (between athletes, at the local level, internationally, etc.). Each topic represented an exercise, both done in separate sessions, dividing the main group into two different ones. Having collected the examples, the group moved from a more generalised approach to the communication of great sporting events, to the recognisability of disabled persons as athletes, who practise sports in a different way, without losing the heroic tone associated with sporting feats. Here, a specific set of lessons, reviews and site inspections was dedicated to visual identity in space, visualising and organising the different environmental scales (from local, to municipal, to the scale of the building) in a broader wayfinding experience.

Each stage included a divergent phase, with students working in a collaborative way (in person and online) and a convergent phase with tutors (experts and teachers). A set of final triangular sessions with stakeholders, students and visual design experts, allowed an expansion of the design perspective. Stakeholders’ comments were addressed: not disguising but showing athletes with Down syndrome; specialising and dividing the information between what is needed by the athlete, the teams (before their departure), the local population and the media; designing a modular system ready to be used, even partially, in future events.

Experts on universal design and disabled people from associations suggested taking a broader outlook about how information is passed to anyone, avoiding the risk of a tunnel view on physical and mental specificities related to Down syndrome, without taking into account that people attending to the event are anyone.

As soon as the directions were established (this takes up two thirds of the process), in the Development process the reunited group turned the conceptual prototypes into graphic proposals and plans, including some new issues regarding logistics and management (this in parallel with the event staging). The visual design stage needed a more in-depth analysis of the point of view of international trends regarding disability culture design (improving the Discover stage) to better take into account unexpressed needs, given the absence of athletes within the group of experts. This included the work done by several radical disabled communities, in particular...
in the visual design field (i.e. the work of Jen White-Johnson, against ableist culture, using a joyful and colourful style to focus on neurodivergence and anti-racism) and certain guerrilla design activist projects, such as Accessible Icon, arising from the street art project of Sara Hendren and Brian Glenney in 2009 (Glenney, 2024).

In spite of a strong preliminary view totally oriented on including the

Trigames within the atmosphere of the Paralympic games, the final key-words (and related pictures) underlined the importance of Joy, Amusement and Community (together with Hugs!), giving form to the visual system as finally realized. This outcome was found to be supported by a number of authors (Foster et al., 2005; Robertson, 2010), suggesting that the promotion of sporting activities, the systemic approach to its management, promotion and communication, given that most people are far from becoming Olympians, may be better oriented towards fun as a keyword and not health, recalling more a prescriptive medical approach.

Within the Delivery stage, the final concept has been applied to the design to all products as requested (posters, signage, video clip, maps, athlete t-shirt, gadget and medals), selecting prototypes into items of readability, economic feasibility, sustainability, and aesthetics. This phase ended with the refinement of each product, including instructions for manufacturers and the participation of the students to production tests.

Fig. 4
Posters included both the event promotion as a whole and single pictures of the eight sports activities, to be used as a system or individually.

Fig. 5
The final results included maps and totems for international teams and visitors, framed within a broad analysis of the wayfinding system.
Beyond the operational results of the Workshop Communicate the Social, desired and largely achieved but not indispensable for the success of the training objectives, this was a starting point for a path aimed at supporting new ways to promote actions with frailties, not asking for any physical tools but rather for equal access to services and social opportunities. Mainly due to the needs of media and companies to propose final products that are easy recognizable as creative or flashy, there is a strong risk of objectifying the different, considered as a freak, as brave or as inspirational for the benefit of nondisabled people, an attitude Stella Young well summarised as inspirational porn (Young, 2012).

The Workshop experienced several research limitations, mainly due to pandemic restrictions, to be overcome in future developments, in particular: the impossibility to interact with athletes and their families (be they national or international); the lack of feasible data to frame the starting point, to inform the plan of action and to finally measure the results; the missed opportunity of an interdisciplinary group of participants, to better simulate the decision making processes.

The main barriers highlighted through the research development were a significant lack of information about sport opportunities for people with disabilities, a poor welcoming attitude at existing events (mainly towards athletes whose body or attitude is not recognized as fitting) and scarce support for all the services that may relieve care-givers from having to be present at all times.

Several key points emerged from the debriefing stage, suggesting the development of further networking initiatives: to support small teams and associations as well as large sports organisations; to analyse the strategic role of mobility issues (pathways, parks, safety, etc.) for connecting people and for socialisation; to help identify and overcome bias and barriers, promoting the importance of equal access to sports activities.

Endorsing sports events and championships for people with disabilities is undoubtedly an important opportunity to give them visibility. However, to guarantee sports activities and an active life for everyone, a stronger commitment to provide services is needed. Too many people give up, and not just the disabled, because they are forced to choose not according to their needs, interests and enjoyment, but from what is available.

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