

How new technologies can promote an active and healthy city. Digital platform to identify areas of informal sport practice in the city of Malaga

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Abstract

In recent years the urban public space has become the largest casual sports infrastructure in cities and suburbs. WHO establishes a direct relationship between the Active Healthy City, social cohesion of communities and public space. This approach provides a framework for research and work on the design of the city and urban space as support for this sport practice. Moreover, new technologies provide an opportunity to promote the sport in the city.

“Malaga Activa” digital platform project is an initiative that wants to promote the informal sport practice on the urban public space (outside the regulated sports facilities) and healthy living in the neighborhoods of the city of Malaga. This paper presents the results of the first phase of the project identifying the active sport areas -those in which physical and casual sport activities take place-. It also includes a methodology and a performance test of the created digital platform, as well as an assessment of the experience and possible improvements to be incorporated in the successive phases of the project.

1. Introduction

The following research project focuses on "City and sport" and has been developed by the Cathedra of "Emerging Technologies for Citizenship", University of Malaga. It is a field associated with the field of smartcity, citizen participation and new technologies follow a line of correlation between administration and academy branch.

According to the following study, sports activities was divided into two categories, formal and informal sports activities. The formal activities are the practices that are performed in physical spaces where there is a specific design for the realization of a particular sport. The non-regulated sports activity or informal spaces are those in which there appears, for some reason, a specific spontaneous activity.

This research focuses on studying what kind of model of public space favors sports in the city of Malaga, with the aim of creating a platform for consultation and citizen motivation, encouraging the practice of sport, with the goal of creating a healthy and active city.

2. Literature Review

2.1. Regulation of physical activity in Malaga

Since 2010, the OMS urges cities to assess urban planning as part of the essence of public health.

Referring to Congress "Touriscape First International Congress Transversal Tourism and Landscape"¹ Nebot and Lopez (2018) in his study of urban politics and sports, be a promotion of active and healthy city is not displayed. If the Spanish scope mainly stands policies of the universities of Andalusia and Barcelona. On the one hand, in the case of Barcelona, initiatives such as "Urban Planning, Environment and Health" aims to promote urban development in a healthy way.

On the other hand, in Andalusia, there are several laws that reflect on the situation of physical activity or sport demands and needs: Andalusian Sports Act (Law 5/2016)² and the Strategic Plan for Sports in Andalusia (2007-2016)³.

In the case of Malaga, a Local Sports Facilities Plan is developed, it is an inventory of technical specifications and ordinances as a standard for the construction of sports facilities regulated in the urban space of the city (2001)⁴.

2.2. Sports practice and urban public space

The public space is a privileged place for the development of sports in the social aspects and inclusive place as it is a complex, dynamic and constantly changing space (Maza, Antropólogo, & Antropología, 2008).

Public space is defined as places of free access, those that are available for the enjoyment of any citizen. It is noteworthy that there is a difference between public space and collective space (Magrinya & Mayorga, 2008), where the collective space is one that requires an admission, that is, it has some control. It is provided with barriers or fences. In these spaces it is increasingly losing the status of public and begin to have a more controlled and private character.

One of the biggest problems of big cities is the lack of relationship in the public space, where recreational activities are generated in an easy and comprehensive manner, providing a minimum quality equipment and public urban space (Kostrzewska, 2017).

2.3. Sports practice as a means of appropriating public space

Public spaces like parks, squares and streets are places used for recreational activities, where city dwellers can enjoy the city. Each person gives a meaning according to the needs and desires to the free spaces, appropriating and feeling as their own these places, in which perhaps the use for which they have been designed is not given (Fonseca Rodriguez, 2015). Nieto (2007) uses the term "territoriality" in his study on the feeling generated by the appropriation of people over these places. From the point of view of psychology, the concept of ownership is defined as "a basic mechanism of human development, by which the person is "appropriate", generalized human experience" (Vidal Moranta y Pol Urrúntia 2005).

All this ensures that in these places a life rich in experiences in these places, where each citizen feels a space as their own, not as something that does not belong to anyone (Jacobs J 1961).

2.4. Characteristics of the sports public space; regulated and non-regulated activities

In the case of this study rated the sporting public space in two types: non-regulated and regulated. Sports venues regulated are those which are regulated with a control or furniture installed by the admission, such as for example the sports of football and fitness parks. Instead, unregulated sports facilities are considered those that are not designed for a particular sport or established, but because of the character of each place used to do some kind of sport.

Those spaces are not regulated or improvised city are interesting spaces for this research, those citizens choose to carry out their practice. These specific locations are those that meet certain characteristics of suitability for performing physical exercise, becoming active cores relationship.

¹ Touriscape First International Congress Transversal Tourism and Landscape. February 2018. Torremolinos, Malaga. www.touriscape.org

² Law 5/2016, of July 19, of the Sports of Andalusia. www.boe.es

³ Strategic Plan of Sports of Andalusia (2007-2016). Junta de Andalucía. www.juntadeandalucia.es

⁴ Local Plan of Sports Facilities of Malaga (2010). Diputación de Malaga. www.malaga.es

The most interesting is the coexistence of regulated and non-regulated activities in the same space, where the design is based on tolerance rather than the exclusion of unwanted behaviours, for example, the prohibitions of some sports practices in certain parks (Kostrzewska, 2017). In order to achieve an active city, urban design must collect and encourage the appearance of sports practices that are not regulated and sporadic.

(Sánchez & Torné, 2016) state in their research that the waterfronts act as nodes of attraction for sports practices and contributing in turn to a social transformation within the urban environment through processes of appropriation that resinifican its value and participate in the development of society.

2.5. The role of emerging technologies in the sports city

Internet as a tool is a means of transmitting information, which allows to develop projects that educate in values through sport, either as a means of communication as didactic support (Font, Soler, & Calvo, 2004).

The databases of the applications Strava⁵ (2018) y Endomondo⁶ (2018) reveals important information about the sports users of the city. They provide us with data on informal tours within the city by runners, swimmers, cyclists, etc. Being an important source of information where more and more users participating in these web platforms.

These web platforms informal sports come into play two important factors for athletes: motivation and iteration. Digital relationships are established, sharing times and routes, increasing improvement and competitiveness, it is a way to invite citizens to participate in the sport.

All these applications are encompassed in the concept of eHealth or mHeath, popularized by scientist Robert Istepanian (Istepanian & Al-Anzi, 2018) who defined the latter as the use of "emerging technologies in the field of health" issues coming into play healthy habits and sporting activities.

3. Aims and Methodology

The general objectives of this article are the following:

- 1. Identify the current areas of use for outdoor sports, in non-regulated public spaces, taking advantage of emerging technologies as a means of proximación to the inhabitants (Figure 1).
- 2. Create a mapping platform sports to consult the non-regulated sports spaces of the city, with the aim of promoting sports through the use of new technologies.
- 3. To inform the local sporting events report to all citizens of Malaga.
- 4. Propose improvements both sporting public spaces regulated and unregulated, free improve sports infrastructure of the city, through the knowledge of public opinion or work of obesrvación an inventory of findings improvement of these spaces is removed.
- 5. Detect areas of the city where there is a lack of public space used for sport, with the aim of proposing new uses of a sporting nature.
- 6. Create synergies with management to that obtained in research and serve as a useful knowledge of the sporting activity in the city.
- 7. Design a pattern of methodology and objectives that can be extrapolated to research projects in other cities.

It can be summarized as a general objective promote an active lifestyle (active aging) and iteration with free space of the city, creating the same way a larger network of social cohesions among the inhabitants and become aware of the benefits of sport for Health.

To accomplish the objectives described methodology phases is produced by:

⁵ Strava, 2018. Social network based on Internet and GPS, focused on athletes, cyclists and runners.

⁶ Endomondo, 2018 "Your personal pocket trainer". Web platform motivation to sport.

3.1. [1] Phase. Analysis and mapping of recreational sports initiatives in Malaga

3.1.1. Target analysis

A first analysis with the existing documentation in a limited area of Malaga capital is proposed:

- 1. Consultation on existing surveying equipment, public spaces ,parks and natural areas (PGOU Málaga and other planimetric sources)
- 2. Cataloging of regulated and non-regulated urban spaces and sports practices (from information provided by the City Council)
- 3. Interviews with district boards of the city of Malaga (public participation process).
- 4. The research web platforms and applications. It aims to identify the main sports areas of Malaga (in public places) that are more relevant or most used by users of applications and virtual platforms. To build a cartography that reflects what is indicated in the virtual communities of athletes.

It is formed parallel to an experts committee that integrates different administration services. The aim is to integrate various services management to create inter-agency networks.

3.1.2. Phenomenological or experiential analysis

It is proposed to map sports practices from a phenomenological point of view, based on perceptual and even subjective questions:

- 1. Direct observation of urban areas, most interesting spots or sports activity.
- 2. Preparation of maps - time lapse or videos. In the same building mental maps (reference Kevin Lynch) in collaboration with sportive people.
- 3. Creation of an observation sheet of every place where the observer can complete it in an area and take pictures of the different activities in time intervals.
- 4. Survey of users or athletes (citizen participation process), with the intention of verifying the objective analysis as well as obtaining additional information about the condition of the spaces and their improvement.

3.2. [2] Phase. Collecting and sharing data - diagnostic cartography

Data collection and contrast information:

- 1. Gather the information given by the planning.
- 2. Study interviews and data provided by all sport people.
- 3. Conclusion on research of direct observation.
- 4. Contrast of information with the different agents involved in the investigation of results.

3. Discussion and Results

The work to be performed aims to increase somehow the relationship between citizens and sport with the public space of the city. Currently the project is in the development phase lines [1] and [2].

The research line focuses on four main study areas: [1] Litoral Front, [2] Mouth of the Guadalhorce, [3] Montes de Malaga and [4] Channel of the Guadalmedina River (Figure 2).

- 1. A direct observation is made in different hours of the day, where the common basic aspects and other characteristics of the environment are analyzed, together with the taking of photographs of the existing sports activities.
- 2. It is make a direct observation in different slots of the day, where common basics and other characteristics of the environment are analyzed, along with the shooting of existing sports activities.
- 3. It is make a interview to city observation, that is, to people that, for his daily activity, theirs observe the enviroment in a disinterested way.

It can be concluded that the points mentioned as enhancers of unregulated sports activity [1,2,3,4] meet some of the following characteristics:

- 1. Maritime environment: The spaces near the sea are pleasant places for sports.
- 2. Natural environment: they are pleasant areas with high environmental quality.
- 3. Parks large areas: large areas of public space for the city consolidated.
- 4. Linear paths: Some athletes choose a path of linear character to carry out their sporting activity for ease of developing a precise route.
- 5. No-places: They are non-living spaces, where social congregation or urban tribes use this space and they feel it as their own.

To sum up, the sports practice in the public space of the city of Malaga provides benefits for the city in terms of:

- Promote active ageing of citizens.
- Create a network of synergies between the different activities in the public space.
- Generate lived urban spaces.
- Create a feeling of appropriation of urban space by the inhabitants.
- Social cohesion with similar sports interests.
- Educate in healthy habits for the young population.



Figure 1. Main study area within the city of Malaga. Source: self-made. Planimetry from Urban Management of Málaga.

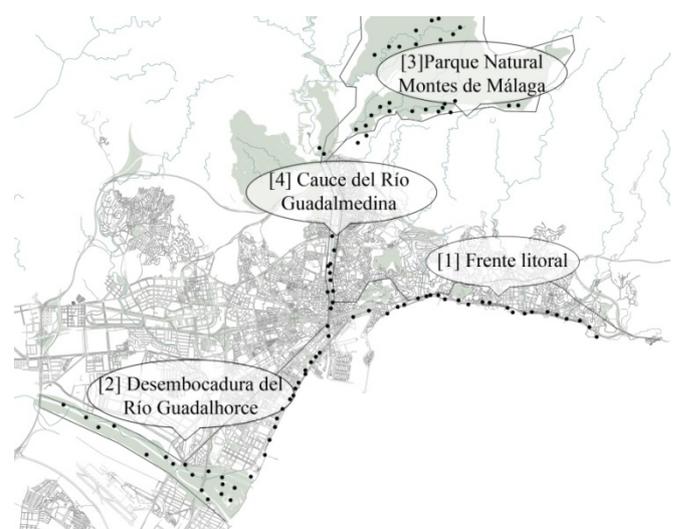


Figure 2. Localized areas of main sports activity not regulated. Source: self-made. Planimetry from Urban Management of Málaga.

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References

1. Fonseca Rodriguez, J. M. (2015). La importancia y la apropiación de los espacios públicos en las ciudades. *Revista de Tecnología y Sociedad*, 4(7), 1–11.
2. Font, R., Soler, S., & Calvo, J. (2004). Educación en valores, deporte y nuevas tecnologías. *Revista Apunts Educació Física i Esports*, 78, 83–90.
3. Istepanian, R. S. H., & Al-Anzi, T. (2018). m-Health 2.0: New perspectives on mobile health, Machine Learning and Big Data Analytics. *Methods*. <https://doi.org/10.1016/j.ymeth.2018.05.015>
4. Kostrzevska, M. (2017). Activating Public Space: How to Promote Physical Activity in Urban Environment. *IOP Conference Series: Materials Science and Engineering*, 245(5). <https://doi.org/10.1088/1757-899X/245/5/052074>
5. Magrinyà, F., & Mayorga, M. Y. (2008). Diseñar la ciudad para el deporte en los espacios públicos. *Apunts. Educación Física y Deportes*, 1(91), 102–113.
6. Maza, G., Antropólogo, G., & Antropología, D. De. (2008). EL ESPACIO PUBLICO COMO LUGAR DE ENCUENTRO Y CONVIVENCIA: EL PAPEL DE LA PRACTICA DEPORTIVA, (1993), 1–6.
7. Sánchez, M. J. M., & Torné, S. M. (2016). Ocio deportivo en los waterfronts de Bilbao y Barcelona. Un estudio comparativo. *Revista de Psicología Del Deporte*, 25(4), 15–20.
8. Nieto C. (2007). Comunicación alternativa para la movilización ciudadana: un parque: mil voces; en FISEC Re- vista académica del foro Iberoamericano sobre estrategias de la comunicación, 3 (6): 3-23.
9. Vidal Moranta, T. y Pol Urrútia, E. (2005). La apropiación del espacio: una propuesta teórica. Barcelona: Univer- sitat de Barcelona.

Regulations and legislations:

10. Sports Law of Andalusia (Law 5/2016). Decree 169/2014, of December 9, by which the procedure of the Evaluation of the Impact on Health of the Autonomous Community of Andalusia is established. Chapter III, Evaluation of the impact on health of urban planning instruments (p.19). <https://www.boe.es/buscar/pdf/2016/BOE-A-2016-7566-consolidado.pdf>
11. Local Plan of Sports Facilities of Malaga. Deputation of Malaga. Retrieved from http://www.malaga.es/deportes/6307/com1_mn-38/
12. WHO. World Health Organization, 2010, Report on World Health. Retrieved from <http://www.who.int/whr/2010/en/>

Figures

13. Figure 1. Main study area within the city of Malaga. Source: self-made. . Planimetry from Urban Management of Málaga. Retrieved from <http://urbanismo.malaga.eu/es/plan-general-de-ordenacion/carto/#.W5fLPugzaUk>
14. Figure 2. Localized areas of main sports activity not regulated. Source: self-made. Planimetry from Urban Management of Málaga. Retrieved from <http://urbanismo.malaga.eu/es/plan-general-de-ordenacion/carto/#.W5fLPugzaUk>