

University and digital transition: the community map as a psycho-educational tool for the care and enhancement of the shared spaces of a university campus

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Abstract

The article examines the development of a community map for the campus of the University of Palermo, carried out by students as part of an educational experiment. Within the framework of community psychology, innovative digital tools (GIS and online mapping) were employed to foster the care of shared spaces. Students developed skills in analysis, collaboration, and active participation. The use of open-access online digital software (Google My Maps and QGIS) made the process engaging, supporting the acquisition of digital competencies and active citizenship. This initiative highlights the potential of digital technologies in practices of caring for shared living spaces, as well as their possible impact on the sense of belonging and civic responsibility within the academic community.

Keywords: Community mapping, academic community, digital technologies, active citizenship, civic responsibility, university campus.

Riassunto. *Università e Transizione digitale: La mappa di comunità come strumento psico-educativo per la cura e la valorizzazione degli spazi condivisi di un campus universitario*

L'articolo analizza la costruzione della mappa di comunità per il campus dell'Università degli Studi di Palermo, svolta durante una sperimentazione didattica dagli studenti. Nel quadro della psicologia di comunità, strumenti digitali innovativi (GIS e mapping online) sono stati impiegati per promuovere la cura degli spazi comuni. Gli studenti hanno sviluppato capacità di analisi, collaborazione e partecipazione attiva. L'uso dei software digitali online open

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access (Google My Maps e QGIS) ha reso il processo coinvolgente, favorendo l'acquisizione di competenze digitali e di cittadinanza attiva. Tale iniziativa mostra le potenzialità delle tecnologie digitali nelle pratiche di cura degli spazi di vita condivisi, e le possibili ricadute su senso di appartenenza e responsabilità civica della comunità accademica.

Parole chiave: Community mapping, comunità accademica, tecnologie digitali, cittadinanza attiva, responsabilità civica, campus universitario.

1. Introduction

In a context where the challenges related to the management and care of shared spaces play an increasingly central role in the dynamics of university life, the University of Palermo promoted an innovative educational experiment aimed at actively involving students in the protection and enhancement of their living and study environment. The educational activity, usually carried out in classrooms, brought students from educational and psychological courses into the natural environment of the campus its open spaces, gardens, and wooded park putting into practice the photovoice methodology (Santiniello & Vieno, 2013). This latter is a strategy of psychoeducation and empowerment (Rappaport, 1987; Zimmermann, 2000) which, through the participatory analysis of self-produced images, gives voice to lesser-known aspects of daily life to develop proposals for intervention to be shared with stakeholders. This methodology involves, after a phase of photographic exploration and group analysis of the main emerging themes, the organization of a collective event to raise community awareness of the needs expressed by participants and to modify the social representation of reality itself.

Since the 2023-2024 academic year, students have been experimenting with the phases of photovoice, from taking photographs to organizing a collective participatory action. On the occasion of the first Community Fair, organized by students in collaboration with the TLC-CIMDU, the themes of sustainability, care of spaces, and inclusion were addressed through open-air workshops held in the green and informal areas of the campus. Faculty and students from psychology and pedagogy, architecture, engineering, and law took part in the initiative, with the conviction that integrating knowledge and insights from different perspectives can lead to more sustainable improvements, mutually beneficial outcomes, and scientifically rigorous actions. The university "citadel" like local communities, has geographical boundaries and environmental resources that serve as settings for active learning, shaping the everyday experiences of all university actors, including the livability of spaces and related services.

Carrying open-air workshops with students and faculty from different disciplinary areas means rediscovering the campus as a place not only of study and training but also of gathering, social interaction, and the blending of people and knowledge. As stated in Line 5 of the Strategic Plan of the University of Palermo, this responds to a specific strategy of promoting students' sense of belonging, considered a priority in higher education environments, given its multiple benefits for academic life (Galioto *et al.*, 2025).

In this context, the experience presented here of the MyCamPus Lab is situated, one of the workshops of the Community Fair, carried out at the proposal of students who, through photovoice, had expressed the need to create a mapping of the campus using methods of active participation. This specific need was addressed by some faculty members of architecture who specialize in urban context mapping and who, for several years, have been conducting similar experiments on the campus.

Using advanced digital tools, particularly Geographic Information Systems (GIS), students took part in the creation of a community map aimed at capturing different perspectives and needs for improving the campus from the entire student body. The adopted methodology, which combined aspects of civic participation, digital skills, and critical analysis of spaces, involved the use of online software such as Google My Maps and QGIS, tools that made the process more dynamic, accessible, and engaging, while fostering the acquisition of transversal skills within a community participation approach (Ceri, 1991; Mannarini, 2004). From this perspective, participation is configured not only as spontaneous but also as “provoked” under the guidance of expert faculty members, who lead participants to experience a social function of collective interest (Meister, 1969). Involving students in the development of a shared map primarily meant making them feel like actors in the desired social change. Indeed, the experiment enabled them to highlight issues such as neglected areas, underutilized or degraded spaces, as well as opportunities for the redevelopment and enhancement of the environment.

The initial idea stems from a reflection on the opportunity to consider the university as a “common good” (Wittel, 2018), an identity-shaping place (Pedler *et al.*, 2021; Signore *et al.*, 2024) where an academic community lives, recognizes itself, and intends to take care of.

On the other hand, with regard to the theme of community, university campuses often reproduce the main functions of a city on a smaller scale and, as in cities, these spaces require an integrated system of decision-making between governance and citizens (Torrisi & Pernagallo, 2022) in order to improve well-being and service delivery, reduce forms of decay and/or misuse, and enhance functions that are significant and potentially beneficial to the entire community.

Within this scenario, in particular, the open public spaces of the university play a significant role not only in students' education but also as areas of socialization, directly contributing to the quality of life of the entire academic community. Life on campus, in fact, is study and work, but also a network of relationships and informal social interactions. In addition to fostering favorable conditions for more effective learning (Wentzel & Wigfield, 1998), the quality of campus spaces substantially contributes to students' personal and relational growth, developing place identity (Proshansky, 1983).

This experience enabled students to develop territorial analysis, collaboration, and active participation skills. The creation of the community map made it possible not only to give voice to students' perspectives on what should be changed in the campus to improve their academic quality of life, but also to engage them as builders of meaning and solutions, as they themselves are actors of change with a renewed sense of belonging. The initial results demonstrate the potential of digital technologies as tools for collective empowerment and the promotion of shared care practices (Peterson & Reid, 2003; Peterson & Zimmerman, 2004), offering valuable insights for future initiatives in civic participation and the sustainable management of university environments.

The article aims to present the initial outcomes of the experiment carried out on the campus of the University of Palermo, focusing in particular on the organizational framework of the community map experience, given the degree of innovation it represents with respect to usual educational structures, and offering a reflection on the opportunities created by this activity.

2. Community mapping: notes for an interdisciplinary focus

In international literature, community maps are conceived as a product-process of participatory practices of identity self-representation and recognition of the values of places, involving the resident communities or, more broadly, those who perceive themselves as an integral part of those places (Altmann, 1975; Brower, 1980; Sack, 1983). The identity component of the community and that of place perception (Proshansky, 1983) constitute the essential elements of this type of cartographic representation, generally in paper form but increasingly digital, which, compared to traditional technical representations, favors informal representation codes and iconographies that allow everyone to immediately grasp the characteristics/values of places (Gatti & Procentese, 2021). From a diachronic perspective, community maps represent the most recent evolution of the so-called "cognitive maps", developed by a local community starting from Kevin Lynch's work in the 1960s.

The fields of application highlight the great versatility and use of this tool even beyond urban planning. References range from those providing an overview of this practice and its applications (Lydon, 2003; Chambers, 2005; Perkins, 2007; Wood, 2010), to those analyzing its transposition into the GIS field (Dunn, 2007; McCall *et al.*, 2015), including more qualitative approaches (Panek & Pashto, 2017; Wridt, 2010), and finally to those examining its social implications (Shkabatur, 2015).

Within participatory practices in planning processes, contributions range from more general ones (King & Clifford, 1985) to those addressing sub-areas of planning in different contexts (Thompson, 2015; Fahy & Ó Cinnéide, 2009; Perkins, 2007; Wood, 2005).

Most of the references cited identify the community map as an interactive, and often incremental, process in which the inhabitants of a place reconstruct the bond between themselves and the spaces in which they live, assuming specific responsibilities not only in recognizing the identity of places but also in the concrete commitment to their preservation and/or transformation (Mannarini, 2004). Within community psychology, empirical analysis of the territory has been equipped with tools such as the community profile (Francescato & Tomai, 2002; Martini & Sequi, 1988), a form of participatory action research that interprets the local community as an integrated system of structural-objective and processual-subjective elements. Exploring the community in all its multiple dimensions broadens the participatory process, giving back the results to the community and establishing an order of priority of the problems that emerged during the mapping phase, as well as the tools for intervention. The process leading to the construction of a map, although not comparable to the full complexity of the community profile method, is essentially participatory and involves all actors, as an exercise in recognizing the values of one's community in relation to the places in which it lives (Summa, 2009; Madau, 2015). By the nature of the process and the actors involved, the context usually taken as a reference constitutes "the smallest arena" in which the social life of a community develops (Clifford, 2006). This was the case in the 1980s with the first experiences of "Parish Maps", initiated by the environmental association Common Ground, founded in West Sussex County in Great Britain, to promote and protect local distinctiveness (Leslie, 2007; Clifford, 2006; King & Clifford, 1985).

In the following years, the Parish Maps methodology was tested in many other countries (Thompson, 2015; Fahy & Ó Cinnéide, 2009; Perkins, 2007; Wood, 2005), including Italy (Esposito, 2017; Madau, 2015; Magnaghi, 2010; Summa, 2009). Here, the British model was introduced in the early 2000s, particularly within the experiences of ecomuseums (including those of IRES in Piedmont, Vernole in Apulia, Orvieto in Umbria, Cervia in Emilia

Romagna, Valle dei Laghi in Trentino-Alto Adige, and Valle di Trompia in Lombardy) to promote the role of the community in the preservation of places. Regarding the main differences between the British and Italian models, Borghi (2016) highlights both the nature of the tool and the modes of representation. In the British experience, the dimension of informality is preferred, concerning both the aims of the practices (the identification of identity and the safeguarding of the territory) and the actors involved. In the case of Italian experiences, the technical dimension of the conservation project prevails, where representation is situated at an intermediate level between artistic production (typical of British Parish Maps) and a technical analysis of a given territorial context. The direct consequence of this difference in approach can be found not only in the profile of participants in the process (ordinary people in the case of British Parish Maps versus ordinary people supported by technical experts and facilitators in the case of Italian experiences), but also in the nature of the representations: sketches, bird's-eye views, aerial perspectives, and non-scaled drawings in the first case; informal representations that are later “translated” into interdisciplinary technical documentation useful to public administration in the second case. This aspect resolves the transition from analysis to action which, for example, in the applications of the community profile method, ends with the project phase of proposals by citizens without addressing the decision-making phase (Verbena & Rochira, 2004).

In Italy, following the guidelines of the European Landscape Convention (Florence, 2000), which defines landscape as “an area, as perceived by people” (art. 1), community maps have been used in participatory practices activated in the drafting of certain regional landscape plans. Among the most significant experiences are the Territorial Landscape Plan (PPT) of Apulia (Magnaghi, 2016) and the ongoing experimentation on the island of Ischia, engaged, after the 2017 earthquake and the landslide events of 2023, in the reconstruction plan that has become an integral part of the Regional Landscape Plan (PPR) of Campania. In these cases, community maps have been used as tools for listening to and directly involving local communities. Through workshops, public meetings, and participatory laboratories, citizens were invited to represent on maps the meaningful places, areas of interest, critical issues, and potentialities of their territory. Generally, community practices in these cases develop through three main phases:

- a) detection of landscape perception, reappropriation and representation of heritage values (this phase involves the creation of the maps);
- b) participation in defining landscape quality objectives and in designing transformation scenarios;
- c) activation of local knowledge for the daily care of the landscape and the

environment, revitalization of traditional crafts and typical products, as well as cultural promotion aimed at enhancing the territory and the landscape, with a view to the future sustainable management of the Regional Territorial Landscape Plan.

These practices have made it possible to collect qualitative and subjective information that often does not emerge through traditional methods of landscape analysis. For this reason, it would be useful to integrate community psychological expertise with urban and architectural expertise to achieve pragmatic goals of change and improvement of the territory.

3. MyCamPus Lab, an interdisciplinary action for campus well-being

The MyCamPus Lab project was born out of a renewed interest within the academic community of the University of Palermo in improving quality of life, which became particularly active after the Covid-19 experience. This concern involves not only the political/technical-administrative level of university governance, committed to enhancing quality assurance processes, but increasingly also the effective interaction between this dimension of governance, the innovative teaching experiences promoted by faculty, and the independent initiatives of students, who are attentive to issues concerning the quality of university spaces.

The experiment was promoted by an interdisciplinary working group:

- for the photovoice aspects, students of Education Sciences and Pedagogical Sciences (Department of SPPEFF) were involved. At the start of the workshop, they presented the photovoice process through which the need for creating the campus map had emerged, as well as its potential, with the aim of fostering dialogue with university governance and proposing a bottom-up contribution to decision-making processes concerning spaces, their use, and enhancement;
- for the technical and digital aspects of designing the activities of MyCamPus Lab, students from the ERC SH7_8 (Land use and regional planning) and PE8_10 (Manufacturing engineering and industrial design) fields were involved. Specifically, the working group consisted of 2 senior researchers, 3 junior researchers, 10 students from the degree program in Urban Design for the City in Transition, and 20 students from the degree program in Industrial Design, all belonging to the Department of Architecture;
- 80 students from other degree programs (in particular Education Sciences, Psychological Sciences, Engineering, and Legal Sciences) then devel-

oped the map by applying in the field what had been prepared by the previous group.

The cross-fertilization and sharing of knowledge and practices from the humanities and sciences leveraged the sense of belonging to the academic community, with reference, in the first phase, to the university campus as a place and to the student community, regarded as a co-producer of innovation, ideas, and the representation of resources. With full awareness of the structural and methodological limits of the case, this was a first experimental phase of a broader and more articulated process that informally sought to initiate dialogue within a “partial” segment of the academic community (the students) and that can certainly be better structured and expanded in the future.

The experiment aimed at the general objective of fostering critical reflection on the need to take care of the socio-physical spaces of the university campus, understood as a “common good”, starting with those who experience them daily. This goal was made operational through the creation of a “community map” that involved students in responding in particular to the following needs:

- a) to contribute to strengthening the sense of belonging to the university, through the reinforcement of the community dimension;
- b) to recognize and identify the quality of the campus open spaces in order to consider them as a “common good”;
- c) to activate possible regeneration practices with particular attention to the quality of green spaces (environmental dimension).

3.1 Tools and method

Although within the limits of an experiment, the interdisciplinary profile of the working group and the different levels of expertise of the participants made it possible to explore the issue broadly and from multiple perspectives, thus facilitating the creation of a process/product that was articulated and consistent with the objectives outlined above. Senior researchers assumed the methodological and organizational coordination of the initiative; junior researchers prepared the operational actions and supported students in analysis and design activities; students from the urban planning area worked on the construction and implementation of the initial support (Google My Maps) and the final support (QGIS) of the map, while design students took care of the graphic layout and the design of the icons to be used in the mapping. Students from other disciplinary areas involved in the field acted as implementers of the community map, once they had received the technical and digital guidelines for carrying out the mapping.

The experimental application took place between March and May 2024, according to the timeline outlined below.

1. March–April 2024: design and planning of actions/activities;
 2. 06/05/23, 10/05/23, 12/05/23: student co-working sessions in the development of operational tools;
 3. 15/05/2024: experimental construction of the “community map” during the collective Community Fair event, through a crowdsourcing system for collecting geo-referenced data and photographs, using digital technologies to support the map (Google My Maps);
 4. late May 2024: construction of the GIS and analysis of the collected data.
- The experiment was structured according to the following phases:

Phase 1. Preliminary design activity. Construction of the Google My Maps base for community mapping and preparation of icons (Fig. 1) to be used for identifying the points to be mapped.

Phase 2. Community event. On May 15, 2024 (from 10:30 to 12:30), during the Community Fair, the academic community involved (around 80 students from different degree programs) took part in the community mapping activity over a period of about 2 hours, accessing the Google My Maps platform via QR code from mobile devices.

Phase 3. Data collection and cataloguing. The mapping activity took place during a “walk” inside the campus, during which students, organized independently into groups of 3 to 5, mapped the spaces they considered significant on the Google My Maps platform. The mapping was carried out as follows:

- a) *identification and selection of the place*: through discussion of the characteristics of the place, the students selected it on the map;
- b) *georeferencing*: each element was linked to its geolocated position within the campus;
- c) *cataloguing*: each element was classified as “positive”, “negative”, or “noteworthy”;
- d) *photographic production*: the students photographed the place, uploading the photo to the map;
- e) *description*: the students added a short descriptive text explaining the choice of the place and, in the case of “negative” elements, suggesting possible improvement actions.

Phase 4. Data Analysis. At the conclusion of the mapping operations, the following actions were carried out:

- the mapped elements were exported from Google My Maps via a KML file;
- the data were uploaded to QGIS, enhancing both the map and the database;
- at the conclusion of the work, a final report was produced with the analyzed data.

Fig. 1. System of icons created for the community map by the students of the Industrial Design degree program



3.2 First results of the project and possible future work perspectives

The community map experiment recorded approximately 1.400 mobile device accesses to the Google My Maps platform within two hours of activity. A total of 200 campus spaces were georeferenced, catalogued, photographed, and described. Of these, 68 were identified as “positive resources”, 121 as “negative elements”, and 11 as elements considered noteworthy by the participating student community. Their distribution, due to logistical reasons and walking times, is concentrated mainly in the central area of the campus (about 100 elements), while the remaining part is distributed in the North-East area (about 60 elements) and the South-West area (about 40 elements), with a generally homogeneous distribution of both “negative” and “positive”

elements. The places considered of significant interest for the whole community are concentrated mainly in the central area.

This first experiment showed how, in a relatively limited time and with the involvement of a modest number of students (80), it was possible to collect a significant amount of data and information, which produced an initial yet detailed mapping of campus areas, also allowing the identification of areas where the lack of basic services is most evident.

The collected data were structured into a report and are available, as a database, so that they can be used for future analyses and the planning of possible improvement interventions.

Fig. 2 – The mapping at the conclusion of the 15.05.2024 experiment

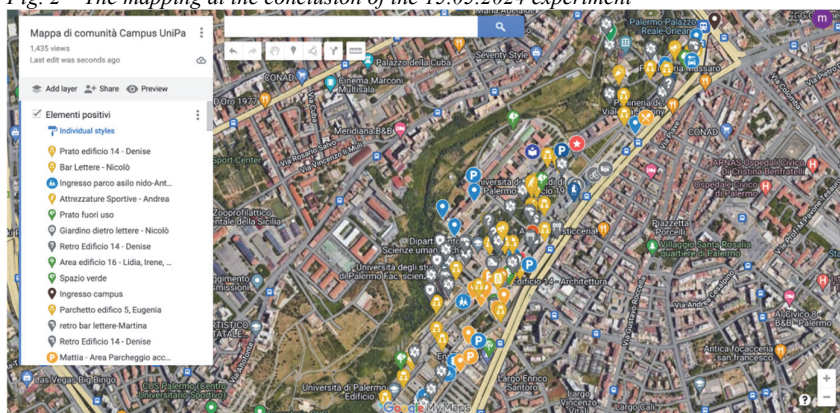


Fig. 3 – Example of a positive element mapped



On the operational level, the experiment made it possible to:

- a) the participatory construction of the community map as a collective event, through a crowdsourcing system for collecting geo-referenced data and photographs, using digital technologies to support the map (Google My Maps);
 - b) the construction of the GIS (QGIS) with the collected and processed data, stabilizing the mapping and defining the contents of the database for further technical and social uses;
 - c) the thematic analysis of the data collected during the mapping;
- the progressive use of the map in a GIS environment (QGIS), not only as a tool for interaction within the academic community, but also as a governance tool for the “participatory” planning of future campus redevelopment interventions.

More generally, the experience carried out contributed significantly, and for the first time, to the collective construction of a shared vision of the university campus by the students. Despite its experimental nature and limited application (in terms of time, places, and participants), the experience demonstrated the full potential of community mapping, both in raising awareness among the student community about caring for shared spaces and in positioning itself as an active interlocutor for possible actions to improve the quality of university life.

Extending this first experiment on a larger scale and with adequate funding could enable the initiative to become a tool for active participation and effective governance, available to the University also for the management and planning of future campus redevelopment interventions, starting from the real needs expressed by the academic community. A possible development of the initiative could involve its inclusion in one or two days per year (one per semester) dedicated to this activity, engaging the entire academic community and allowing for a more detailed and in-depth mapping of campus spaces and needs.

The MyCamPus Lab project represents a first step toward a participatory and innovative management of the university campus of the University of Palermo, with the potential to become a model of reference for other academic institutions.

4. Conclusions

The experience of constructing a community map by students on the university campus of Palermo represents a significant example of how digital technologies can enhance participatory learning, active citizenship, and a

sense of collective responsibility within an academic context. This practice, in fact, was not limited to the simple production of a cartographic representation of the territory, but took shape as a process of direct student involvement in the enhancement and protection of their study and living environment, fostering a sense of belonging and shared care for spaces. As already noted, the impact of these practices on academic effectiveness and on the well-being of all university actors is scientifically proven (Signore *et al.*, 2024; Gatti & Procentese, 2021; Peterson & Zimmerman, 2004; Peterson & Reid, 2003; Wentzel & Wigfield, 1998).

In terms of new digital technologies, the participatory use of tools such as Google My Maps and QGIS represented a key element in the success of this initiative. Google My Maps, with its intuitive interface, allowed students to easily map spaces by adding points of interest, routes, images, and comments, thus fostering a collaborative approach, first within small groups and then within the larger group of Community Fair participants. The platform, in fact, facilitated immediate “construction” and sharing, stimulating dialogue among participants and strengthening the sense of digital community. The ability to view and update information in real time made the experience more dynamic and engaging.

On the other hand, QGIS, with its advanced functionalities for geographic analysis and spatial data management, enabled students to explore more technical and scientific aspects related to territorial representation. This tool fostered a more rigorous and detailed approach in the construction of the community map, stimulating skills of analysis, interpretation, and synthesis of geographic information. The use of QGIS also promoted greater awareness of territorial and environmental dynamics, contributing to the development of a critical and responsible understanding of the campus.

The integration of these digital technologies within a theoretical framework rooted in community psychology had a significant impact on strengthening active citizenship practices within the academic community, which thus acts as a community of practice fostering the growth of individuals and the collective. Through participation in the construction of the map, students were called upon to recognize and enhance campus resources, to identify critical issues, and to propose shared solutions both among themselves and with the governance system. The possibility of integrating geographic data, images, and personal and collective narratives through digital technologies enriched the representation of the campus, making it more vivid, meaningful, and closely connected to students’ daily experiences. The process, as much as the goal, of constructing and sharing the community map thus proves to be a tool of personal, organizational, and community empowerment (Shkabatur, 2014; Maton, 2008; Chambers, 2005; Zimmermann, 2000; Kieffer, 1984),

through which processes of co-decision-making on intervention priorities can be built, making the power system as participatory as possible, both horizontally and vertically, for the well-being of the university community.

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