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Application of Urban Theories in Developing Participatory Planning Tools

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Keywords	Abstract
	For successful and efficient participatory planning, continuous improvement and assessment of its tools is needed. The aim of this research is to summarize the methodologies, process, and results of the participatory workshops carried out within the framework of the Genius Loci project implemented in the Šančiai neighbourhood (Kaunas, Lithuania), and to draw conclusions and insights on the effectiveness, advantages, and possibilities of using urban theories and approaches, such as mental mapping, sociotope methodology, and pattern language in participatory planning tools. The possibilities of application of the design thinking approach in facilitating the process and improving user experience are also discussed. The article includes a brief introduction to the activities of the Genius Loci project with the following focus on workshops, their methodologies, processes, and outcomes from the point of view of urban theories applied. The main outcome is the summary table demonstrating features of participatory tools (workshop sessions), elements of urban theories applied, and their evaluation followed by conclusions.

Introduction

Relevance of research. Globalization, mobile investment capital, resulting inter-city competition, and urban entrepreneurialism have engendered neo-liberal urban policies aimed at creating conditions for capital accumulation within the boundaries of cities [1]. According to T. Sager, this means shifting the emphasis of city politics from regulation and welfare issues to re-imaging and marketing the city, creating employment opportunities, and acting as entrepreneurs in implementing large-scale urban development plans [1]. This urban politics re-orientation with a one-dimensional concentration on efficiency and economy often causes such problems as weakening the inhabitants in their capacity as well-informed citizens and indifference of urban governance to concerns for unequal treatment, exclusion, segregation, and distributional questions [1]. Simultaneously, in recent years, thinking about space has changed dramatically, from a flat cartographic concept of space as a stage for human activity or as merely the physical dimensions of a fixed form, to an active force shaping human life. Consequently, a new focus on urban spatial causality has emerged to investigate the generative impact of urban environments not only on everyday behaviour but also on processes such as technological innovation, artistic creation, economic development, social change, as well as environmental degradation, social polarisation, growing income disparities, and the production of justice and injustice [2]. Thus, urban researchers began to use the term spatial justice, which is gaining increased importance in the context of neo-liberal urban policies [1]. According to urbanist E. Soja, spatial justice is the right to the city and its spatial resources, the benefits of the city, and the right not only to use the city but also to create and shape it. Participatory planning has become an important part of

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urban planning, an integral component of spatial justice, an opportunity for citizens to express their expectations and to shape space according to the needs of local users. According to the researchers, the interests of several groups collide in the city: residents whose goal is an attractive space for living, working and relaxing; businesses aimed at investments and their growth; visitors who are looking for cultural and recreational facilities to spend their free time, etc. [1]. Moreover, the researchers [3], [4], [5] note that post-socialist countries may face specific issues related to urban planning and participatory processes in particular. For example, Z. Nedović-Budić has pointed out that planning methods similar to those used by the urban planners in Western European countries and the United States did not work well in the post-socialist countries because they were created in substantially different societal contexts and legal and institutional environments. She distinguished the need for more public participation in all aspects and phases of the planning process as one of the major planning issues in Central and Eastern Europe as well [3]. S. Poljak Istenič and J. Kozina also conclude that participatory planning remains a great challenge in a post-socialist urban context and underline that it is important to work with both citizens and public officials [4]. According to J. Kotus et al., it is relevant to pay attention to post-socialist realities of urban space in place-making studies [5]. Considering this, it is important to note that in order for participatory planning to be efficient and successful, and to reflect the needs of society, community and other participants, special participatory planning tools based on the knowledge of social sciences, urbanism, and local context are needed. Tools are identified as specific techniques/solutions for implementing participatory methods and approaches in this research. Consequently, the design, testing and evaluation of participatory planning tools play a significant role both in the improvement of citizens' participation experience [6] and in obtaining a more reliable and wider set of data useful for decision-making in planning.

The aim of the research is to evaluate the methodologies of the participatory workshops carried out within the framework of the Genius Loci project implemented in the Šančiai neighbourhood (Kaunas, Lithuania), and to draw conclusions and insights on the effectiveness, advantages, and possibilities of using mental mapping, sociotope, and pattern language urban theories and approaches in participatory planning tools in the context of Lithuanian cities and communities and in general.

The structure of the research. The paper includes a brief introduction to the activities of the Genius Loci project and the Šančiai community with the following focus on workshops, their methodologies, processes, and outcomes from the point of view of urban theories and approaches applied. The possibilities of application of the design thinking approach in facilitating the process of workshops and improving users' experience are also discussed.

The main outcome is the summary table demonstrating features of participatory tools, elements of urban theories applied, and their evaluation followed by conclusions. The methods of research include literature review, analysis, comparison, evaluation, and systematization of information collected and experience obtained during the implementation of the Genius Loci project. The focus of the research encompasses the participatory workshop methodologies created and tested during the project, the experience of the implementation process of the workshops and the outcomes of the workshops from the points of view of data obtained and the impact on the community.

I. Social and Spatial Context and Development of Participatory Planning Tools

History and community of Šančiai. The history of the Šančiai neighbourhood dates back to the 17th–18th centuries, when historical documents for the first time mentioned the villages located near Kaunas city, on the bank of the Nemunas River. At the end of the 19th century, Šančiai gradually became a suburb of the growing city of Kaunas. Historically, the area has always been linked in one way or another to military infrastructure. The growth of industry also played an important role in Šančiai history. The urban structure of Šančiai can be characterised by narrow streets, a semi-regular layout, and connections to the Nemunas River. The wooden residential architecture is well preserved, as well as the buildings of the historic military town built during the rule of the Russian Empire [7]. The rich history of the place, linked to industry, nature, and military activities, has shaped a diverse and active community. The development and activities of Šančiai residents have particularly intensified since 2011 with the involvement of the artists, who had stimulated the cohesion of the community and brought valuable characteristics of the district into a wider context through international projects and organizations. Artists and residents of Šančiai V. Geluniene and E. Carroll gathered a group of people interested in urban research with the aim to find out how people feel in places where the wooden houses of former factory workers and restored 19th-century military buildings have been transformed into modern private dwellings, and to observe the links between the old inhabitants and the new settlers. During these activities, the Žemieji Šančiai Community was officially formed with the declared aims of striving for ecological balance and a good and fair life for all. The objectives of the community are the following: promote self-governance in the district; participate in decision-making and implementation, shaping the environment of the district; connect and represent the people of the district; promote equality; develop a sense of belonging to one's environment;

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implement cultural rights; increase knowledge in the fields of culture and science; and promote small businesses in the district [8].

Genius Loci project and development of participatory tools. In 2019, neo-liberal urban policies [1] of Kaunas City Municipality clashed with the interests of the active Žemieji Šančiai Community. Kaunas City Municipality has raised the need for a two-lane street along the Nemunas River with one lane for parking and a pedestrian walkway. This project was viewed negatively by the inhabitants of Šančiai as an attempt to urbanise the natural environment and the natural banks of the Nemunas and to create a barrier between the inhabitants and the recreational area. Active Šančiai residents were in favour of the natural riverside and of the area being accessible to pedestrians rather than cars. As the result of debates with the municipality and facing the need to educate the community about urbanism, the project 'Genius Loci: Urbanization and Civil Community' was prepared and received financial support from the European Economic Area and Norwegian Financial Mechanisms. Understanding the tensions and

contradictions between market solutions in urbanization and local empowerment [1], the project aimed to involve the community members in the territory planning processes, to provide them with some functional tools to become active creators of the territory, to share the knowledge about urbanism and heritage, thus strengthening neighbourhood identity and the responsibility for the place-making [8]. Thus, the disagreement between the Šančiai community and Kaunas Municipality became a starting point for developing and implementing a series of approaches and methodologies within the framework of the Genius Loci project in the period 2020–2023 for the involvement of the community in place-making including three participatory planning tools – Memory Map workshops, Present Map workshops, Urban Vision workshops – presented in this paper.

During the project, the workshops with children, youth, adults, and people with special needs were carried out in the Šančiai neighbourhood, during which data about Šančiai heritage, public spaces, nature, and other aspects was collected, and the participants of the workshops
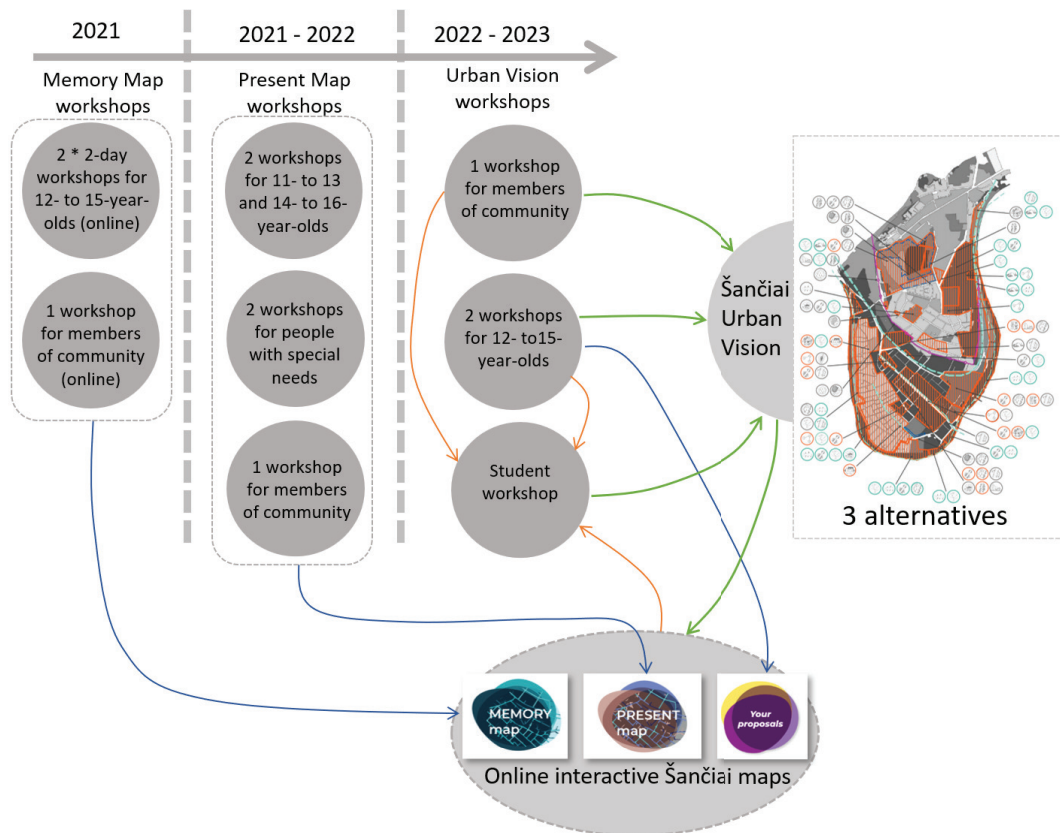

Fig. 1. Timeline of implementation of participatory workshop sessions within the framework of the Genius Loci project [8] and data integration and utilization paths. Children, youth, and adult community members entered data by describing their memories, experiences, and ideas in the online interactive maps of Šančiai. Additional data was added to the maps by the researchers of the project after the analysis of the outcomes of the workshops – drawings, collages, mental maps, etc. The data from the online interactive maps was used for quantitative and qualitative analysis and, together with the outcomes of the vision, workshops became the basis for 3 alternatives to the Šančiai urban vision [Scheme created by the authors].

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were provided with relevant knowledge, skills, and tools for place-making (Fig. 1). 338 adults, 697 children and youth, and 20 people with special needs participated in the workshops. The total number of participants was 1055 people. During the workshops, the participants used various means and methods to express their memories and views on the existing environment in Šančiai and to propose visions for its improvement. The use of artistic expression and visualisations made it easier to integrate subjective observations and thoughts into a coherent picture that reflects the needs of the wider community. Workshops resulted in the collection of visual material, drawings, and maps reflecting the attitudes, values and needs of the participants in the study area, as well as the gathering of important summary information, which was integrated into the final digital analysis calculations and the development of urban vision maps for the Šančiai neighbourhood. Workshop activities also included the dissemination of information about the project and the newly developed inclusive participation tools (digital interactive online maps of memory, present and vision of Šančiai (Fig. 1)), accessible to all. The workshops designed, organized and implemented by the authors of this publication in collaboration with Žemieji Šančiai Community can be subdivided into three categories according to their methodological features and aims: Memory Map workshops, Present Map workshops, and Urban Vision workshops. Workshop methodologies were grounded by three urban theories and related approaches: psychogeography and the practice of mental mapping [9], sociotope methodology [10], and pattern language by C. Alexander [11]. The design thinking method [12] was selected as a participatory and creative process facilitation technique. The Present Map workshop methodology was presented in detail in previous publications by the authors [13], [14]. This paper presents a brief description of each workshop's implementation methodology and sequence before evaluating them in detail from the point of view of urban theory application. Figure 1 represents the timeline of implementation of all workshop sessions and paths, how collected data was integrated into 3 alternatives of Šančiai urban vision [8] created as the final result of the project.

Memory Map workshops. The Memory Map workshop methodology was designed and tested as creative workshop sessions for 12- to 15-year-old schoolchildren from the Kaunas University of Technology Vaižgantas Progymnasium in the spring of 2021. Each creative workshop was organized for two days. The workshops were organized remotely using a variety of online creative platforms due to the strict quarantine of COVID-19 announced in the spring of 2021 in Lithuania. However, the methodology and structure of activities are suitable for the physical workshops as well. The Memory Map workshop methodology was aimed both at empowering the community in the field of heritage as well as collecting and

sharing memories and stories of workshop participants related to the past of Šančiai. The methodology of workshops is based on the approaches of mental mapping (psychogeography) and design thinking and has the elements of citizen science [15] as workshop participants collected stories and memories about the past of Šančiai from their relatives and acquaintances. The process of the workshops was based on group work supervised by moderators complemented by lectures, presentations, sharing of information and views, discussions, and collective drawing for all the participants. The aim of the first day of the workshop was to find out what participants know about the cultural heritage of Šančiai and whether they can identify it in the environment around them. The sequence and the contents of the first day of the workshop included such main elements as collective drawings of the objects, places and events related to the past that workshop participants have seen in the locality or have heard about, locating these objects on the geographical map of the locality. The homework task for the participants before the second day of the workshop was collecting stories, memories, and other information about the locality from other people. The aim of the second day of the workshop was story-telling – sharing the stories that participants have collected, systematizing all the collected information (memories of the participants and the contents of collected stories) and filling the online interactive Memory Map [16]. The workshop for the adult members of the community was organized as an online meeting of several hours and had such elements as a lecture, sharing of information about heritage and views, discussion, story-telling, locating identified objects related to the past of Šančiai on the geographical map of the locality, and filling the online interactive Memory Map.

Present Map Workshops. The Present Map methodology was designed and tested in five one-day creative mapping workshops involving different age and social groups in the period 2021–2022 (Fig. 2, a, b and c). Two workshops were organized for schoolchildren studying in Šančiai: for 11- to 13-year-olds and for 14- to 16-year- old youth from the Vytautas Magnus University Classic Education School. Three workshops were organized for adult members of the community, two of which were implemented with people with special needs and their helpers. The Present Map workshop methodology is focused on the connections with, communication, and knowledge about the present-day urban landscape of Šančiai, especially public spaces and related recent experiences, in contrast to the Memory Map workshop, which is past-oriented. The elements of mental mapping, sociotope methodology and design thinking were integrated into the workshop methodology; it has the elements of citizen science [15] as well as workshop participants' gathered data about the features and use of public spaces during the fieldwork. The workshops for the schoolchildren were organized in the following sequence. At

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the first workshop, participants working in groups made a collective drawing of the locality from memory; the collective drawing was followed by the fieldwork in the locality – the working groups went for an exploration walk in the locality with the aim of identifying public spaces and tracing people, activities or signs of activities in them. Later, participants working in groups identified places in the geographical map of the locality both from their collective drawing and from the fieldwork and added comments about the features of the places and objects. This activity was followed by identifying the activities and users in the distinguished places in the geographical map of the locality. The participants identified in the map the activities and users that they remember or have spotted during the fieldwork in the public spaces. The typology of activities adapted from sociotype methodology [10], [17] and the classification of users used in the previous research [17] were applied to facilitate the work and to structure the provided information more easily. The workshops were finalized with the sharing of information and experiences, comparison of results between the groups of participants, where each group presented their work to other participants, general discussion and filling the online interactive Present Map [13], [14]. The workshops with people with special needs constituted the same steps; however, in this case, the information about the use and experiences in public spaces was entered in the online interactive Present Map by the researchers of the project after the sociological observation of the process and the analysis of the outcomes of the workshops. In the workshop with members of the Šančiai community, the fieldwork in the locality was not included due to substantial prior knowledge of Šančiai by the participants.

Urban Vision workshops. Urban Vision workshops were aimed at creating design and activities proposals for public spaces in the Šančiai neighbourhood and were developed and tested in four one-day creative events for Šančiai community members, schoolchildren, and undergraduate architecture students organized in the period 2022–2023. The methodology applied in the workshops with community members and schoolchildren (12- to 15-year-old schoolchildren from the Kaunas University of Technology Vaižgantas Progymnasium) differed substantially from the methodology created and used for the workshop with students. In the first case, the methodology used the elements of mental mapping, sociotope methodology and design thinking. In the second case, the core of the methodology was pattern language by C. Alexander [8]; moreover, the students in this workshop used data from the previous workshops and the entries in the online interactive maps of Šančiai. The core elements of the workshop with the members of the community included working in groups identifying locations by drawing on the geographical map of Šančiai that are important for future development and need transformations and envisioning users and functions typology of selected localities in a structured way. The typology of activities adapted from the sociotype methodology [10], [17] and classification of users used in the previous research [17] were applied in this case as well to facilitate the work of the participants and to structure the provided information more easily in the analytical stage of the research. These activities were followed by creating the vision collage focusing on people, activities and environment. Workshop participants used newspaper and journal clippings and created visual representations of
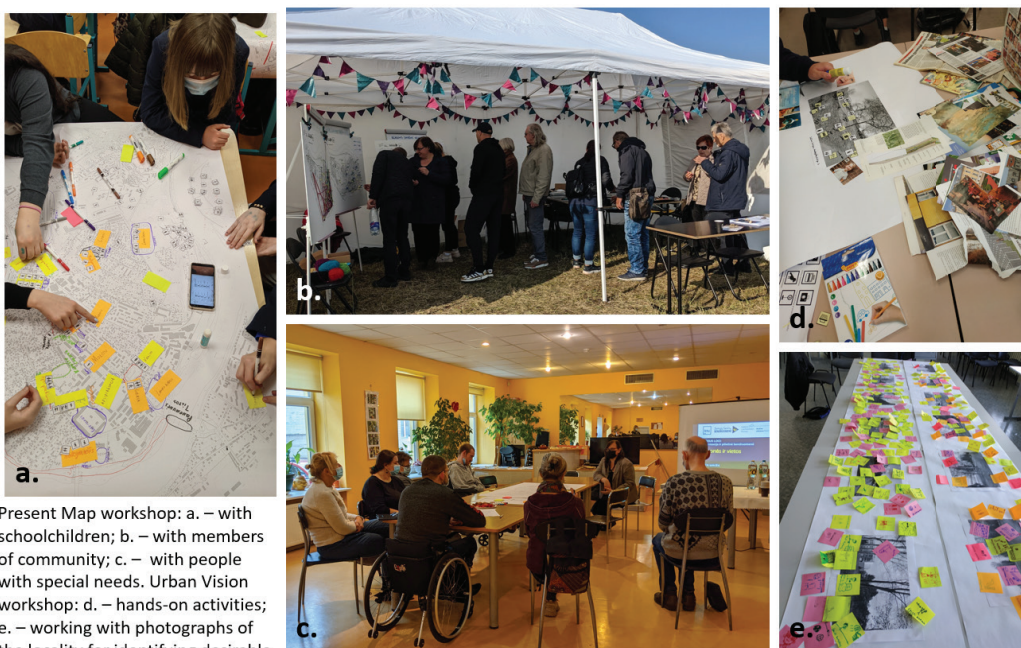
Present Map workshop: a. – with schoolchildren; b. – with members of community; c. – with people with special needs. Urban Vision workshop: d. – hands-on activities; e. – working with photographs of the locality for identifying desirable activities in public spaces

Fig. 2. The process of workshops involving different social groups and hands-on activities [Photographs by the authors].

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Workshop with students: a. – group work; b., c. – hands-on approach working with patterns using symbolic icons specifically designed for this task; d – presentation of workshop results to the representatives of Šančiai community
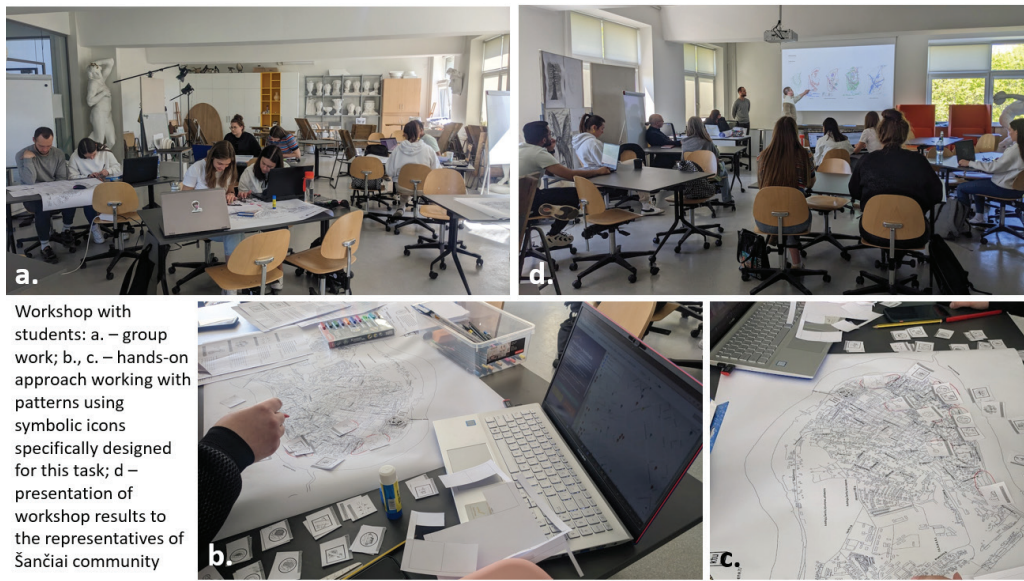
Fig. 3. Workshop 'Urban Architectural Vision of the Šančiai District' with fourth-year students of architecture based on pattern language by C. Alexander [8] [Photographs by the authors].

their ideas for the transformation of the selected locality of Šančiai. In the workshops with schoolchildren, the printed photographs of selected locations of Šančiai, which currently require transformations, were used instead of the geographical map of the locality due to the limited knowledge of Šančiai by the workshop participants (Fig. 2, d and e). Schoolchildren had identified potential users of activities that can occur in these specific locations and then were invited to draw and create collages on the basis of provided photographs in order to demonstrate possible and desirable design solutions for these public spaces. Schoolchildren were invited to enter their ideas and visions in the online interactive Vision Map of Šančiai (Fig. 1).

The student workshop entitled 'Urban Architectural Vision of the Šančiai District' was aimed at students of the Faculty of Civil Engineering and Architecture of Kaunas University of Technology. Ten fourth-year architecture students participated and presented group proposals for the urban vision of Šančiai (Fig. 3). Visions were created using C. Alexander's [8] pattern language method.

Students analysed the site as part of a study module dedicated to sustainable urbanism. Throughout the semester, students carried out an analysis of the current state and developed design proposals for the Šančiai district based on the principles of sustainable urbanism, and this workshop became an important and organic part of the design process. Putting the principles of sustainable urbanism into practice was one of the highlights of this workshop, which had multiple benefits. The students not only learned more about the pattern language methodology but also had the opportunity to apply it in a real-life setting by analysing the data and proposals provided in the interactive online maps of Šančiai by the real users (Fig. 1). On the other hand, the pattern analysis performed by the students allowed the researchers to look at the collected material in a new way.

The workshop consisted of a few main stages:

- Workshop preparation. This included time to get to know the theoretical material and applications of the pattern language methodology in more detail, as well as the proposals from the online Vision map of Šančiai provided by the community members and visitors (the assignments were given as homework tasks). The aim of the preparation was to familiarise oneself with the tools of the workshop and their possible applications. Students worked in small groups of 2–4 people that had been set up earlier in the module.

- The first stage of the workshop was dedicated to finding, recognising and discussing patterns in the Šančiai vision map. Identification of patterns was carried out by checking and analysing the material provided by the community members and visitors on the interactive online maps. The workshop was based on the hands-on approach and used a collage technique to create the pattern maps. Each discovered pattern was represented by a characteristic icon and localised on a paper map. The hands-on approach allowed the workshop to create a more relaxed and creative atmosphere and to feel a special connection with the territory.

- The second stage involved analysing the hierarchy of patterns structure. The students were offered recommendations for a basic hierarchy structure of patterns, based on the priorities of local residents' proposals, which were determined during the previous workshops of the Genius Loci project. Students could also argue and suggest their own improvements to this structure. Three hierarchical groups of patterns (the fundamental patterns, second-order developing patterns and third-order complementary patterns) were distinguished, which were marked in different colours on the map.

- The third stage included an analysis of relations of patterns in the Šančiai vision map. Students tried to identify the most important and recurring patterns of the territory and to find their mutual connections. The types and reasons for connections were determined individually by students and became the subject of a general discussion.
- The workshop concluded with a summary and discussion about the obtained systematic pattern model of the Šančiai territory and its possible use for making future urban decisions. The emerging conflict between the currently changing situation and the real needs of the population, which were expressed in the material collected during the Genius Loci project, was discussed.

This workshop was very important in preparing the final conclusions of the project and proposals for the urban development visions of the Šančiai territory. It was also one of the validation tools of the research conducted during the project, which confirmed the researchers' conclusions and justified the visions.

II. Evaluation of Participatory Planning Tools

The above-presented methodologies of the participatory workshops created within the framework of the Genius Loci project – Memory Map workshop, Present Map workshop, and Urban Vision workshop – were intended as practical tools for participatory planning; they applied well-known urban theories and approaches – mental mapping, sociotope methodology, and pattern language – in order to structure the process and produce scientifically valid and useful results. A positive impact on strengthening and empowering the community of Šančiai was one of the intended effects of the workshops. Thus, the workshop process used the design thinking approach, which helped integrate these theories in an inclusive way into the process of workshops and brought them closer to the members of society. In order to understand better the impact of the workshops and the efficiency of designed methodologies, as well as the suitability of selected urban theories and approaches in the context of participatory planning tools, the evaluation of the experience of the implementation process of the workshops and the outcomes of the workshops was carried out. Numerous researchers underline the importance of valuing the efficiency of participatory planning processes and tools [18], [19] in order to avoid wasting the resources of planners, decision-makers, participants, etc. [19]. In this case the application potential of selected urban theories in participatory workshops was evaluated as well. The evaluation in this research consists of a descriptive analysis of effectiveness, benefits, and the potential related to the urban theories and approaches applied and the summary table demonstrating the features of the methodologies through the prism of urban theories and approaches applied and their evaluation (Table I).

Table I

The Features of the Workshop Methodologies Viewed Through the Prism of Urban Theories and Approaches Applied and Their Evaluation [developed by authors]

	Workshops	Urban theory/approach			Design Thinking	Process	Result
		Mental mapping	Sociotope methodology	Pattern language			
Memory Map Workshop	2 × 2-day workshops for 12- to15-year-olds (online)	Collective drawing of objects and places; identifying them in the map	-	-	Hands-on approach – drawing; empathy-oriented task – story-telling	Employment of creative imagination and artistic expression; creating group-work atmosphere; community engagement; social cohesion	Extracted information about memories, meanings, and experiences; uncovering hidden and overlooked aspects of local heritage; empowerment of community; raising public awareness
	1 workshop for members of the community (online)	Identifying objects and places on the map	-	-	Empathy-oriented task – story-telling	Creating group-work atmosphere; community engagement; social cohesion	Extracted information about memories, meanings, and experiences; uncovering hidden and overlooked aspects of local heritage; empowerment of the community; raising public awareness

Workshops		Urban theory/approach			Design Thinking	Process	Result
		Mental mapping	Sociotope methodology	Pattern language			
Present Map Workshop	2 workshops for 11–13 and 14- to16-year-olds	Collective drawing of the map of the locality; identifying objects in the map	Fieldwork-observation – identifying users and activities in public spaces	-	Hands-on approach – drawing, cutting and glueing symbols, using sticky notes	Employment of creative imagination and artistic expression; attractive, simple, and engaging activities; creating group-work atmosphere; community engagement; social cohesion	Capturing and structuring experiences and expectations of the community related to public spaces; insights into community needs; identifying 'blank spots'; promoting inclusivity; empowerment of the community; raising public awareness
	2 workshops for people with special needs	Collective drawing of the map of the locality; identifying objects in the map	Fieldwork-observation – identifying users and activities in public spaces	-	Hands-on approach – drawing, cutting and glueing symbols, using sticky notes	Employment of creative imagination and artistic expression; attractive, simple, and engaging activities; creating group-work atmosphere; community engagement; social cohesion	Capturing and structuring experiences and expectations of the community related to public spaces; insights into community needs; identifying 'blank spots'; promoting inclusivity; empowerment of the community; raising public awareness
	1 workshop for members of the community	Collective drawing of the map of the locality; identifying objects in the map	Working with the typology of users and activities	-	Hands-on approach – drawing, cutting and glueing symbols, using sticky notes	Employment of creative imagination and artistic expression; attractive, simple, and engaging activities; creating group-work atmosphere; community engagement; social cohesion	Capturing and structuring experiences and expectations of the community related to public spaces; insights into community needs; identifying 'blank spots'; promoting inclusivity; empowerment of the community; raising public awareness
Vision Workshop	1 workshop for members of the community	Collective drawing on the map of the locality; identifying locations in the map	Working with the typology of users and activities	-	Hands-on approach – drawing, cutting and glueing symbols, using sticky notes, collage	Employment of creative imagination and artistic expression; attractive, simple, and engaging activities; creating group-work atmosphere; community engagement; social cohesion	Capturing and structuring expectations, preferences, and visions of the community related to public spaces; empowerment of community
	2 workshops for 12- to15-year-olds	Collective drawing on the photographs of the locality	Working with the typology of users and activities	-	Hands-on approach – drawing, cutting and glueing symbols, using sticky notes, collage	Employment of creative imagination and artistic expression; attractive, simple, and engaging activities; creating group-work atmosphere; community engagement; social cohesion	Capturing and structuring expectations, preferences, and visions of the community related to public spaces; empowerment of community
	Student workshop	-	-	Identifying patterns; determining their hierarchy and relationships	Hands-on approach – drawing, cutting and glueing symbols, using sticky notes, collage	Common vocabulary for workshop participants; encouragement of holistic thinking; suitability of pattern language for creating sustainable, resilient, and culturally sensitive solutions	Synthesizing data from previous workshops; transforming data into easily understandable and flexible design proposals

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Mental mapping. Currently drawing urban environments from memory and mental mapping (sketching, drawing maps, adding to, and labelling already existing maps) originating from K. Lynch's [6] work 'The Image of the City', are widely applied tools for extracting information related to memories, knowledge, experiences, meanings, preferences, and desires attached by people to places and objects. According to the researchers, the mental mapping method allows the study of the ways how people perceive and experience space and the dynamics of human-environment relations and physical and emotional interactions, avoiding the limitations of questionnaire-based surveys [15], [16]. Moreover, as mental mapping activities include sketching and drawing and other hands-on activities, this approach is very suitable for employing the creative imagination and creating a group-work atmosphere for workshop participants and for integration with the principles of design thinking creating workshop methodology. Bearing in mind these potential benefits for the development of participatory tools, mental mapping became the basis for all three methodologies: workshop participants were creating collective drawings of places and heritage objects, drawing maps of the location from memory, drawing, and sketching on the existing maps and on printed photographs. After reflection on the workshop process experience and analysis of the obtained results, it is possible to distinguish several benefits of the application of mental mapping in this type of participatory activity. Social and community benefits include community engagement in the mapping process and a sense of identification with and ownership of the maps they create, empowerment of the community by providing the platform to express their perspectives and preferences, raising public awareness about heritage, public spaces, and potential of the place and at the same time joined activities with maps can foster social cohesion between participating community members. Benefits related to planning and decision-making include uncovering hidden and overlooked aspects of the locality (for example, potential heritage objects that could be listed afterwards), including intangible heritage, collecting information and potentially informing design and management decisions of public spaces. It is necessary to note that the territory identified as Cabbage Field was noted as important both for history and the present-day community of Šančiai in the course of the Genius Loci project activities and included in the register of protected cultural properties afterwards. Mental mapping activities allow us to reveal and explore the subjective dimension of locality through subjective experiences and emotions of individuals, their personal connections to the place and their perception of spatial relationships. The experience of Genius Loci mapping activities has demonstrated that artistic expression can become an integral part of community engagement (Fig. 4) – visually engaging and evocative maps created during the workshops were later presented in the participatory mapping artefacts exhibition in the gallery of Kaunas subdivision of Lithuanian Union of Artists.

Sociotope methodology. The sociotope methodology developed by Swedish scientists around 2000 [7] is based on the analysis of the content of public spaces by identifying three components of public space – physical space, types of users, and activities – and monitoring of their real-life manifestations [17]. The sociotope method
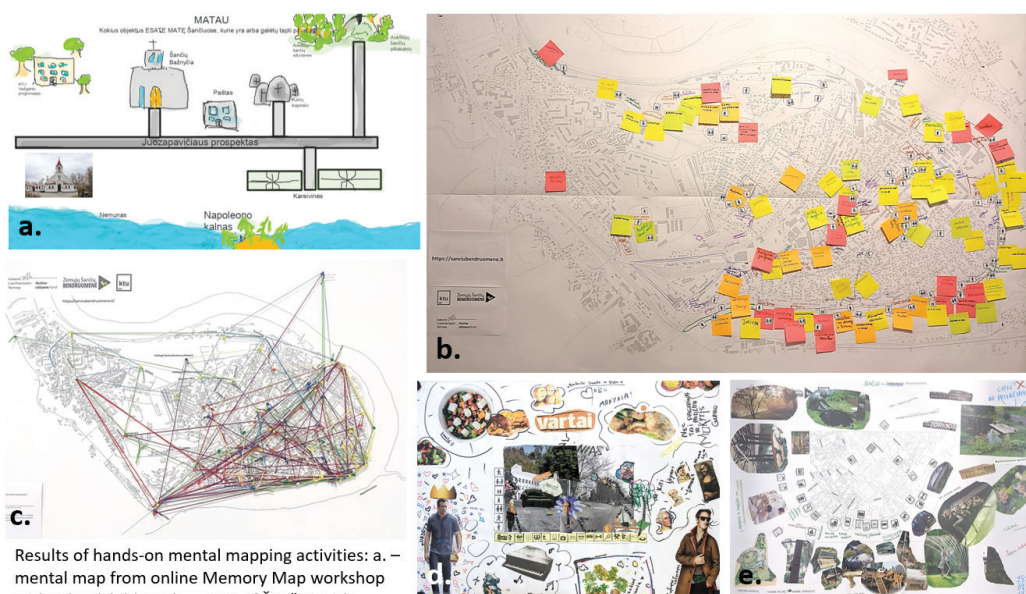
Results of hands-on mental mapping activities: a. – mental map from online Memory Map workshop with schoolchildren; b. – map of Šančiai with symbolic icons and notes representing users and activities in public spaces from Present Map workshop with schoolchildren; c. – map with pins and threads representing movement routes in Šančiai created in the Present Map workshop with community members; d. – collage on the photograph of location in Šančiai from Vision workshop with schoolchildren; e. – collage on the map of Šančiai from Vision workshop with community members

Fig. 4. Diverse visual expression and implementation techniques of mental maps created by the participants of the workshops [Photographs by the authors].

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was chosen and adapted for Present Map and Urban Vision workshop methodologies for capturing and structuring the experiences and expectations of a living community related to public spaces. The elements of sociotope methodology, such as the typology of activities and users (expressed in symbolic pictograms for the convenience of workshop participants) and fieldwork filling forms, helped to plan and diversify the activities of the workshops and to clearly structure the expected results [10]. Working with the typology of users and activities was transformed into attractive and simple, engaging tasks of cutting and glueing symbolic pictograms and sticky notes on the maps or photographs of the locality. The experience of the process of workshops has demonstrated that the elements of sociotope methodology are very well compatible with mental mapping activities, as data and insights about the users and activities can be easily located on the mental maps in the form of pictograms and notes. Cutting and glueing pictograms and sticky notes are hands-on activities that can be seen as integral to design thinking. After reflection on the workshop process experience and analysis of the obtained results, it is possible to distinguish several benefits of the application of elements of sociotope methodology in this type of participatory activity. Besides social benefits, which are similar to the ones identified in the previous sub-section about mental mapping, specific benefits related to data collection and analysis and potential use in decision-making and planning can be identified. For example, classifications of users, activities and typology of public spaces used in the workshop activities provided a structured framework for organizing and categorizing obtained data in the analytical stage and make it easier to communicate the research findings not only to the scientific community but to various stakeholders and the general population as well. The benefits related to planning and decision-making, such as insights into community needs (for example, identifying, which activities are thriving, and which may need more attention), identifying so-called 'blank spots' – the spaces which are underutilized, promoting inclusivity (whether public spaces are inclusive and accessible to a diverse range of community members) can be mentioned.

Pattern language. C. Alexander's [8] pattern language method, applied in the workshop with architectural students, is a time-tested design and analysis meth odology that involves identifying and applying recurring design patterns. A design pattern is a reusable form of problem-solving that uses architectural tools to create built environments that are responsive to human needs and values. C. Alexander [8] identified 253 patterns and M. W. Mehaffy et al. [18] added a dozen more. The patterns are divided into those applicable at the level of the urban fabric, individual buildings and building interiors. According to C. Alexander [8], the patterns are interconnected in a 'fractal way' – a larger pattern is made up of smaller patterns so

that designers can easily 'construct' their entire network by choosing the first pattern. This methodology, which has proven to be successful in various contexts, was selected as a tool for synthesizing the data obtained from Memory Map, Present Map, and Urban Vision workshops including knowledge about public spaces, heritage, users, and activities, community members preferences, visions related to activities and design solutions and 'translating' it into design solutions, that would be easily comprehensible for designers and planners but remain flexible at the same time. Working with design patterns would be an overly complicated task for the community members, although fourth-year architectural students can handle it well. After reflection on the workshop process experience and analysis of the obtained results, it is possible to distinguish several benefits of the application of pattern language in this type of workshop: patterns definitely provided a common vocabulary for students (part of whom were international students) to work with, encouraged and facilitated holistic thinking by considering the interconnections between spaces, users, activities, and potential design elements. The use of patterns in creating and expressing the urban vision of Šančiai confirmed the adaptability and flexibility of the pattern language as well as its suitability for creating sustainable and resilient (focus on green spaces, connections with water, pedestrian movement) and culturally sensitive solutions (possibility to integrate unique cultural and historical elements of the place and local community into the urban vision).

Design thinking. Design thinking is a problem-solving methodology that is highly focused on observing and empathizing with the environmental context [19]. This methodology has proven to be very effective in identifying problematic and sharp situations, investigating and understanding their causes and developing possible solutions. This methodology is identified as human-centred and user-centred and it proves to be helpful for understanding the needs, preferences, and experiences of the users. Moreover, the design thinking methodology, based on a practical hands-on principle, allows participants to use their bodily senses (sight, hearing, touch) and fine motor skills in the activities of the workshop (drawing, cutting, glueing, collage elements), as it facilitates the thinking process, helps to release personal memories, subjective observations and thoughts and at the same time helps participants to relax, to connect to a certain flow of consciousness and thinking, detached from self-interests and exaggerated rationality, and to uncover truly authentic and relevant personal experiences [10]. Creative problem-solving potential, encouragement of empathy, user-centredness, and hands-on approach were the main motivations for selecting this approach for workshop design. Moreover, the experience of the workshop process and obtained results revealed that design thinking is very compatible with selected urban theories and approaches –

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mental mapping, sociotope methodology, and pattern language – it helped to bind and integrate the elements of these theories and approaches into a creative flow of activities. Moreover, design thinking helped to enhance the quality, artistic expression, visual communication, and relevance of created mental maps (Fig. 3) at the same time promoting collaboration, creativity, and community engagement throughout the process of the workshops.

Conclusions

This research has focused on the evaluation of the process and outcomes of three interconnected participatory workshop methodologies – Memory Map workshop, Present Map workshop, and Urban Vision workshop – developed within the framework of the Genius Loci project with the community of Šančiai neighbourhood. The assessment of the workshop process has demonstrated that the integration of mental mapping, sociotope methodology, and design thinking allowed the employment of creative imagination and artistic expression through attractive, simple, and engaging activities, creating a group-work atmosphere, community engagement, and social cohesion. The assessment of workshop outcomes has demonstrated that the use of mental mapping, sociotope methodology, and design thinking allowed extracting information about subjective memories, meanings, and experiences, uncovering hidden and overlooked aspects of local heritage, capturing and structuring experiences and expectations of community related to public spaces, provided insights into community needs, allowed identifying 'blank spots' at the same time promoting inclusivity, empowerment of the community, and raising public awareness. It can be concluded that

mental mapping, sociotope methodology, and design thinking are highly compatible and complementary in the workshop process allowing to achieve creative flow of hands-on activities and structured scientifically valuable results with certain artistic expression. As was mentioned in the description of the process of the workshops, workshop sessions were conducted for diverse social groups' participants – children, youth, adults, and people with special needs. Due to different knowledge about Šančiai, different cognitive and physical abilities, as well as the necessity to use online platforms during the quarantine of COVID-19, the workshop methodologies were adapted and modified in each case according to the needs of participants. These modifications caused some challenges in the generalization and systematization of obtained results and data by the researchers of the project, however the use of the same methodological approaches and typologies in all the sessions allowed to solve these challenges and to find scientifically grounded and creative ways to systematize and present the results. The use of pattern language in the student workshop, in its own turn, allowed synthesizing data from previous workshops transforming it into easily understandable and flexible design proposals with sustainability, resilience, and cultural sensitivity in mind.

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