

Developing a Thematic Trail as a Space for Informal Learning

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POVZETEK – Tematske poti lahko spodbujajo priložnostno učenje v odprtem prostoru. Namen raziskave je bil razviti tematsko pot, ki lahko vključuje tudi ljudi z oviranostmi. Raziskavo so uokvirjali koncepti: informalno učenje, teorija akter-mreža in etika skrbi, s katerimi avtorice interpretirajo tematsko pot kot infrastrukturo, ki povezuje, spodbuja participacijo in učenje. Raziskovalni pristop je participativna akcijska raziskava, ki je potekala kot del prakse v projektu za razvoj trajnostnega turizma in kulturnega sodelovanja. Za soustvarjanje, testiranje in izboljševanje tematske poti je bila uporabljena metoda oblikovalskega razmišljanja. Model je bil testiran v Vipavski dolini. Rezultati kažejo, da je za razvoj modela vključujoče tematske poti pomembno, da je vzpostavljena podpora lokalnega okolja ter sodelovanje lokalnih akterjev na različnih ravneh, kar omogoča vzajemno odgovornost in zavzetost akterjev. Ker je tematska pot zasnovana kot strategija za priložnostno učenje, vključuje različne doživljajske naloge, ki implicirajo izkustveno učenje.

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ABSTRACT – Thematic trails can encourage informal learning in open spaces. The aim of the study was to develop a thematic trail that includes people with disabilities. The research was framed by the concepts of informal learning, actor-network theory, and the ethics of care, through which the authors interpret the thematic trail as an infrastructure that connects, encourages participation, and fosters learning. The research approach was participatory action research, which was conducted as part of practice in a project to develop sustainable tourism and cultural cooperation. The design thinking method was used to co-create, test, and improve the thematic trail. The model was tested in the Vipava Valley, Slovenia. Results show that for the development of an inclusive thematic trail model, it is important to establish support from the local community and the cooperation of local stakeholders at various levels, which enables mutual responsibility and commitment. Since the thematic trail is designed as a strategy for informal learning, it includes various experiential tasks that involve experiential learning.

1 Introduction

Thematic trails have been studied in the fields of tourism studies (Beltramo et al., 2025; Iakovaki et al., 2023; Widawski & Oleśniewicz, 2019; Zou et al., 2025), the preservation of natural and cultural heritage (Caloggero, 2025), and within formal education as educational trails (Nevrelová & Ružičková, 2019), but less as a source of informal learning in open spaces, although research on education and learning in open spaces emphasizes that parks, urban trails, and other spaces are important factors of informal learning (Furlan, 2024; Salih et al., 2024), which takes place spontaneously (Falk & Dierking, 2018). This article presents part of a participatory action research study through which, by means of interdisciplinary collaboration, an inclusive thematic trail was developed in the Vipava Valley. In Slovenia, many thematic trails have been

developed, but they do not sufficiently take into account the principle of accessibility for people with disabilities; therefore, the aim of the study was to analyse the complexity of the co-creation process of inclusive trails through the cooperation of researchers and the local community. We were interested in identifying the key factors for developing an inclusive thematic trail as a strategy for informal learning through the lens of actor-network theory.

Thematic trails connect natural and cultural elements of space into a structure that enables experience and learning. They consist of a sequence of points or stations that provide visitors with information, stories, and tasks through which they deepen their knowledge of a specific area (Atalay, 2015). The impact of thematic trails may go beyond informing, since experiential learning contributes to reflection, the formation of feelings (e.g., a sense of belonging in the local environment), and evaluation. Many trails, however, remain limited to the transfer of information from the source to visitors and do not take into account the possibility of dialogue that could direct visitors' attention to specific challenges.

Thematic trails have been studied from the perspective of didactics, which has identified their educational potential (Nevrelová & Ružicková, 2019; Stolare et al., 2021), and researchers have also identified their potential for connecting communities (Martin et al., 2022; Beltramo et al., 2025) and for linking memories and cultural heritage (McClain & Zimmermann, 2020; Gallou, 2022).

Trails are mostly prepared for people without disabilities, which is contrary to the aspiration toward inclusivity. In our review of research and various projects (e.g., the inclusive trail for people with autism, The Letchworth State Park Autism Nature Trail; inclusive trails with descriptions in Braille; and tactile maps in Massachusetts Audubon's Accessible Trails Project), we did not encounter studies on the creation of an inclusive thematic trail that would combine three aspects: consideration of post-anthropocentric approaches to sustainable development, the use of digital additions, and the inclusion of people with disabilities.

This triple gap — the absence of a model that simultaneously addresses post-anthropocentric approaches, digital solutions, and inclusivity — defines the research problem of this article: to develop and analyse a model for the co-creation of an inclusive thematic trail that explicitly integrates these three dimensions. Post-anthropocentric views of sustainable development and learning emphasize an epistemological shift. To achieve sustainable development, it is necessary to develop a new way of thinking about problems and new pathways for the co-creation of knowledge embedded in life and connected with an ethical component.

Particularly prominent here is the ethics of care, as developed by Puig de la Bellacasa (2017), which emerged from actor-network theory. In planning the trail, we adopt a connection of rational, emotional, and ethical components in the construction of knowledge, leading to participation, transdisciplinarity, and dialogue among different kinds of knowledge. To understand learning in open spaces, we used research on space as a learning environment (Carina, 2025; Furlan, 2024; Lange, 2024), which is part of knowledge networks that we interpret through actor-network theory.

According to actor-network theory (ANT), the human being is not at the centre but is one of the actors in a network that also includes non-human actors. We summarised the key characteristics of ANT relevant to our study on the basis of Fenwick & Edwards (2012), Fenwick et al. (2011), and Rubin et al. (2021). The emergence of a thematic trail takes place within a network in which actors are connected. The network is not static but an emergent structure. Connections and transitions are constantly being formed. Each actor is what it is because of the relations in which it operates. The network is heterogeneous; actors possess different kinds of power, resources, interests, and constraints that influence learning. In developing a thematic trail, it is important to understand the differences and diversity of actors (e.g., a person with a disability, a researcher, a student). The theory emphasizes that material elements - in our case the river, trails, and spaces - are important actors, not merely passive props. In the study, we paid particular attention to artefacts that can represent barriers. Public spaces are not automatically accessible to everyone; disability is not merely an individual characteristic but results from the interaction between the individual and an environment that does not know how, or does not wish, to provide adaptation (Ravnikar & Krajncan, 2025). Physical barriers, language differences, or social stigma can reduce opportunities for learning (Noël et al., 2021); therefore, when designing thematic trails, it is important to identify diverse needs already in the initial phase and to include the local community in the process.

Within the network, constant negotiation and testing take place, during which conflicts emerge. Processes in the network extend over time, during which actors and relations change. Learning also takes place in this context. In our study, we focused on informal learning in open spaces. Research shows that the effectiveness of informal learning depends on the design of learning environments (Salih et al., 2024). A well-designed space can foster curiosity, reflection, and critical thinking, whereas a poorly designed space can function in an exclusionary way or even discourage learning and promote knowledge resistance (Glüer & Wikforss, 2022). People have different motives for visiting open spaces. Falk & Dierking (2018) highlight that experiential learning is most effective when elements in a space address several motives at the same time.

2 Methods

Research problem and research questions

After reviewing the literature, we assumed that the thematic trail, as a micro-infrastructure, has learning potential that can be realised through an appropriate arrangement of tasks/experiences that take into account that all actors (organisations, associations, schools, nursing homes, etc.) co-produce knowledge, preserve heritage, and strengthen local identity. Because the thematic trail enables experiential microlearning, we were interested in identifying the key factors for the development of an inclusive thematic trail as a strategy for informal learning. We found that thematic trails place too little emphasis on interactivity (dialogue) among different forms of knowledge and between the source of knowledge (tasks) and visitors; therefore, we were interested in how to incorporate knowledge networking, interdisciplinary collaboration, and cooperation with

the local community into the design of a thematic trail. We formulated two research questions:

- RQ1: What are the characteristics of planning and designing an inclusive trail that promotes informal learning?
- RQ2: How do knowledge networking, interdisciplinary collaboration, and dialogue with the environment unfold in the context of an emergent practice?

Research instrument

Participatory action research (PAR) (Wood, 2020) was used, with its empirical background formed by two projects that stimulated the development of thematic trails: the international project BeRoots - Between Rivers and Lagoons: Artistic Routes (2024-2026) and the local project Cultural Heritage for Sustainable Tourism: Intergenerational Learning (2024-2025). We chose PAR because it connects research with social action and follows the principle of emancipation. Within PAR, we used the design thinking method (DTM), which enables iterative co-creation with actors (Katoppo & Sudradjat, 2015).

Following the DTM, we divided the process into four phases: mapping needs, defining the problem and the trail objectives, searching for solutions and prototyping (drawing the trail), and testing, implementation, and adaptation. Data were collected from October 2024 to May 2025 using three methods: document analysis, participant observation, and semi-structured interviews.

Document analysis included a review of the municipality's strategic and development documents, local initiatives, and reports of organisations operating in the field of education and the inclusion of older adults. These were obtained in cooperation with the adult education centre, the local development agency, and the tourism association. Participant observation was conducted during the design process (joint meetings) and the testing of the thematic trail. Observation notes were produced and taken into account as part of the material for thematic analysis. Semi-structured interviews were conducted with selected local residents and experts in two phases of the DTM, namely during the definition of the problem and during the development of the solution. The interviews lasted from 15 to 45 minutes. With the consent of the participants, they were recorded and subsequently transcribed. In the group of older adults (25 people) who tested the trail, we conducted short contextual interviews during the walk, which we wrote down after the activity. The interviews were carried out by members of the research group.

Data analysis

The collected data were analysed, without the use of AI tools, followed the six-phase procedure of Braun and Clarke (2006): (1) repeated reading and noting initial ideas; (2) systematic coding — each meaningful segment of the data was assigned a descriptive code (e.g., physical barrier, intergenerational dialogue, non-knowledge as a starting point); (3) searching for themes — related codes were grouped into broader categories; (4) reviewing and refining themes against the data set and the analysis as a whole; (5) defining and naming themes; (6) writing the report. Coding was conducted manually; each transcript and field note was reviewed independently by two members of the research team, who then compared their codes and resolved discrepancies thro-

ugh discussion. The two deductively constructed themes (in line with RQ1 and RQ2) were: (1) Planning and designing the trail and (2) Networking of knowledge and actors; within these, categories and sub-themes emerged inductively from the data.

Participants in the study

The participants in the study included members of the research group: researchers (3), students (9), senior students of the Faculty of Active Wisdom [Modra fakulteta] (3), and local residents. In the first phase of the study (mapping needs), we conducted interviews with local residents and experts from fields related to the thematic trail. Interviewees were selected from diverse areas in order to help us define the problem and the trail objectives. A total of 18 people were included in the interviews: local residents (7), experts (9) (a musician, a specialist in teaching persons with disabilities, a social worker, an occupational therapist, and experts in tourism, viticulture, and cultural heritage), and persons with disabilities (2).

In the second part of the development of the idea (Phase 3: searching for solutions and Phase 4: testing and implementation), we conducted additional conversations because we wanted to verify the suitability of the selected stations on the thematic trail. A total of 32 people were included in the interviews: local residents, people familiar with the micro-location and users of smartphones (4), a volunteer who works with older adults with mobility impairments (1), a person with a mobility impairment (1), an expert in the preparation of learning materials (1), and a group of older adults who tested the trail (25).

Research ethics were ensured through process transparency, voluntary participation, the informed consent of all participants, and the possibility of shared use of the research results. Anonymity was guaranteed to everyone.

3 Results

The results are presented through two themes composed of subthemes that emerged from the thematic analysis of the material.

Theme 1: Planning and design of the trail

Subthemes: trail layout, accessibility/inclusivity, intergenerational cooperation, older adults, motivation, gamification, dialogue, didactic design of tasks.

In the first phase, we analysed needs related to accessibility with the help of interviews. The local environment includes a nursing home and the Vipava Centre for Education, Rehabilitation and Training. After analysing inclusive thematic trails abroad and interviewing representatives of organisations (a social worker, a teacher, an occupational therapist) as well as older adults, the trail was planned without physical barriers so that it would be suitable for wheelchair users. During the testing of the trail, we also involved the local multiple sclerosis association and a group of older adults. We designed a trail that is inclusive (barrier-free) and sustainable (it does not intervene in the environment because it uses a mobile application) and that enables informal learning for different target groups: visitors/tourists, local residents, pupils, youth and older adult

groups, and people with disabilities. The thematic trail runs through Vipava, has six stations, is 2 km long, and is circular, although an individual or group can move freely and learn in the midst of the open space. Public spaces (the park, town square, and riverside trail) on the thematic trail are places of learning. Visitors gain knowledge that is freely accessible through the application, where tasks guide experiential learning. The trail map changed several times because we took into account all obstacles that would be unfriendly to people with mobility impairments. We also considered the views of people familiar with the micro-environment regarding which route was most organically integrated into the space. The tasks at the individual stations also changed several times, as they were repeatedly tested in written form and then in the field. The instructions were adapted so that the information was brief and relevant, and the language respectful of diversity. At this stage, the trail is not inclusive for all groups, for example for autistic, blind, or deaf users; the greatest attention was devoted to the target group of older adults and people with mobility impairments.

According to the principle of accessibility, the tasks are designed to engage several senses, and the instructions are cognitively accessible to people with different educational backgrounds. The tasks were prepared in intergenerational groups and tested in the field. They include stories (the story of the Glo-Glo glass), music (a folk song), and relaxation activities. In designing the tasks, we followed trends in heritage interpretation that emphasise learning with all the senses; accordingly, texts, sound, and touch are included. The tasks are interactive, and the Actionbound application was used to enable gamification, which contributes to motivation for learning on the trail. One of the participants in the trail testing said: "We laughed a lot, and that encouraged us to solve the tasks quickly."

The tasks are situated in the local setting and promote place-based learning as part of informal learning in the square, by the river, and in the park. Places selected for the stations were sites that are important for cultural and natural heritage, through which residents identify with the environment. Because the thematic trail includes knowledge about cultural heritage, history, and nature along the route, it was named Discover Vipava through Time, Culture and Nature. The tasks were prepared as an instrument for directing attention and experiential learning in open spaces. If an older person in a wheelchair walks the trail, the accompanying person can read the tasks and the older person can "solve" them.

Theme 2: Networking of knowledge and actors

Subthemes: types of knowledge and connectivity, dialogue among knowledges, interdisciplinarity, participation.

Knowledge emerged through reflective participation in various actor connections: different groups (special attention was devoted to older adults and people with mobility impairments) as well as human and non-human carriers of the cultural heritage of the local environment. Knowledge was generated in relations among different professional fields: education, tourism, social work, and cultural heritage. The route of the trail and the tasks (the result) are the consequence of numerous relations that could not be controlled and were at times conflictual (relations among individual members of the research group) or unresponsive (relations with actors in the local environment).

According to the plan, meetings of the project team, testing of the trail with local actors, and conversations with local residents were organised; however, practice during the project involved even more encounters among people, knowledge, and also lack of knowledge. In their relations, the interdisciplinary group of experts and holders of local knowledge recognised non-knowledge, for example unfamiliarity with the terminology of other disciplines or with the local environment. The networking of knowledge (and non-knowledge) was an epistemological challenge that at times led to the absence of individual group members. When dialogue was established among different forms of knowledge (e.g., scientific knowledge, cultural practices, tacit knowledge, narrative knowledge) and actors were in a relationship of mutual respect, a network emerged that led to the search for new solutions. Examples include the redesign of tasks, changes to the trail route, the selection of colours and preparation of promotional materials, and the design of the logo.

Solutions did not "break apart" along the borders of individual disciplines; we did not think about the problem solely through the discourse of tourism, education, cultural heritage, or narrative knowledge, but rather at their intersection. Environmental changes (water, air), health (movement), disabilities, and social inequalities were analysed through the concept of networks, which connected the fields. According to the participants, interdisciplinary collaboration is demanding, but it is also a valuable intellectual and emotional practice. Participants needed inclusion, adaptability, and connectedness, which led to a deeper view of the problem (the thematic trail as an inclusive learning practice). Knowledge networking functioned as a way of discovering connections between supposedly separate worlds, such as scientific knowledge and local narrative knowledge. Narrative knowledge was incorporated into individual tasks.

The project group was intergenerational and included younger participants (students) and older ones (senior students and local residents), which brought additional challenges to collaboration. In the intergenerational group, different views emerged (e.g., regarding the selection of musical tasks on the thematic trail and the use of digital tools). Experience is not created by only one person (e.g., a researcher, students, or older adults); rather, it is created by the whole group in dialogue (or in conflict). For all participants, generational views, narrative knowledge, scientific knowledge, the material elements of space, and changes over time had to be coordinated. In intergenerational learning, the competences of all participants develop, while the inclusion of older adults in educational work positively correlates with the professional development of younger participants. The trail was not a static structure while it was being created, nor is it static afterwards. Over time (seasons, new periods), it adapts to the needs of users and to new contexts in the local community. In this process, local ambassadors who connect actors and update tasks in the web application are important.

4 Discussion

The results, organised into two thematic groups, answer both research questions. With regard to RQ1, we find that the combination of participatory planning, iterative testing, and adaptation of didactic tasks to target groups is decisive for an inclusive thematic trail. With regard to RQ2, we find that the networking of knowledge and actors in

an interdisciplinary group is a condition for the emergence of innovative solutions, but at the same time a source of epistemological tension and procedural challenges.

In shaping and placing the thematic trail in the local space, different actors (human, non-human, discursive) were important. In the study, we found that meanings and roles emerge through relations in the network. As Callon (1986) and Fenwick et al. (2011) note, the meaning of actors is not predetermined but constantly emerging. The planning and preparation of the trail was an emergent practice in which actors acquired their significance. A tree in the park that creates unique shade for a mindfulness exercise, or a bench placed in the square, become key actors in shaping the visitor's experience, especially for a visitor with limited mobility. The structure of tasks on the thematic trail forms a narrative that is a networked narration. The elements of the trail are intertwined and enable possibilities for open interpretation, which follows the concept of a multilayered heritage landscape (Wylie, 2007), in which interpretation is not universal but situational (examples include water-contact exercises and mindfulness exercises). The trail route is circular, but the trail allows multiple starting points. Both the trail creators and the trail visitors are co-creators - especially through the enabled use of digital elements - of meanings that, through their experiences and interactions, reconfigure the network of actors (Latour, 2005) and the ecology of learning, knowledge, and experiences that foster informal learning. Our findings confirm and extend the results of Nevrelová & Ružicková (2019), who found that thematic trails realise their educational potential only when tasks are designed with a didactic purpose, not merely as information transfer. Our contribution is to extend this finding to the context of inclusivity: the quality of tasks is a necessary but not sufficient condition - the trail must also be physically, cognitively, and linguistically accessible for people with disabilities.

The thematic trail creates a series of micro-learning events (stations, tasks, stories) that foster curiosity and learning. Because participatory planning included people with disabilities, older adults, and local experts, tasks were developed that correspond to the needs of people with disabilities. A participatory approach increases the likelihood that the content will be relevant and accessible to different groups, thereby increasing inclusion and the meaningfulness of learning and meaning-making, which is also confirmed by research on inclusive education (Vamberger et al., 2025; Hmelak & Krajnc, 2024; Drljić & Kiswarday, 2021).

The thematic trail is conceived as an open project (with changing tasks) into which new actors will enter (e.g., new tasks will be prepared by local experts), leading to the expansion of the network in the creation of knowledge. It is intended for socialising among local residents, so there will not be only one set of tasks aimed at tourists. It develops together with the community and is established as a living infrastructure (including human and non-human elements) that can support inclusive practices in the long term, which is consistent with the ethics of care as developed by Puig de la Bellacasa (2017). The ethics of care (Puig de la Bellacasa, 2017) was reflected in the project at two levels. At the level of trail planning, we operationalised it by including groups that are often marginalised in tourism-interpretive products (people with mobility impairments, older adults). At the level of the co-creation process, the ethics of care meant a commitment to respectful dialogue among different forms of knowledge, which required time and readiness to accept "non-knowledge" as a starting point for the joint search for

solutions. This is in line with Barad (2007), who emphasises that care for the 'material configurations' of the world requires responsibility not only for results but also for the very process of becoming. From the perspective of informal learning strategies, monitoring and updating are necessary in order to maintain motivating tasks in the community. In planning the trail, the principle of accessibility was crucial, with inclusivity being part of the learning assemblage or learning ecology that becomes an emergent effect of sociomaterial action in accordance with ANT (Fenwick & Edwards, 2012).

With the use of PAR and DTM, different groups are included in the design process, so the trail does not merely reflect professional discourse, but becomes a space of multiple voices and possibilities for local interpretations. As Katoppo (2015) observes, the combination of both approaches enables communities to co-create solutions and to think critically about their cultural heritage. This contributes to the thematic trail not being merely informative, but suitable for different abilities, languages, and cultural backgrounds of users, and to providing an experience that motivates and fosters experiential learning. In tourism and heritage studies, there is a growing trend, described by Beck et al. (2018) and Caloggero (2025), of a shift from information to experience, which also applies to informal learning, where experience is central. To foster informal learning, it is important to prepare experiences that are accessible and enable interpretation for different groups. In this study, accessibility was limited to taking into account the group with mobility impairments. If other disabilities had also been considered, it would have been necessary to prepare appropriate tasks and workshops in forms adapted to the specific disability.

The thematic trail connected knowledge from tourism, education, and cultural heritage with local stories, thereby co-creating heritage. Our findings are consistent with studies of thematic trails from the perspective of cultural heritage (Brudin Borg, 2022). The challenge is to balance the authenticity of the experience with the methods available for interpretation. We must avoid trivialising heritage; therefore, we included heritage experts and local bearers of heritage knowledge in the planning process (Fakin Bajec, 2024; Poljak Istenič and Fakin Bajec, 2021), which enabled the networking of different forms of knowledge. The process took place in dialogue among researchers, practitioners, and the environment, which enabled the networking of actors (Vaughn et al., 2018). Knowledge and actor networking as movement across professional knowledge (transdisciplinarity) is demanding, as Fenwick (2014, p. 276) had already established, which is why we planned for this specifically in interdisciplinary collaboration. It is not merely a matter of improving communication among experts, but of conducting sociomaterial analyses of different networks and then intervening for better cooperation. The intergenerational and interdisciplinary composition of the project group was both an epistemological challenge and a source of innovativeness. Partalo et al. (2022, p. 46) find that the inclusion of older adults in educational work positively correlates with the development of competences in younger professionals. Our experience confirms this: generational views on music, digital tools, and heritage initially seemed like obstacles, but in dialogue they became a source of diverse ideas for tasks on the trail. The creation and functioning of the inclusive thematic trail are the result of dynamic interaction among people, materials, space, and practices - that is, among the human and the non-human, or the more-than-human. These ANT perspectives are expanded by the ethics of

care (Puig de la Bellacasa, 2017), which emphasises inclusion, adaptability, processuality, and co-participation, all of which we took into account in preparing the trail.

The three theoretical frameworks - ANT, the ethics of care, and informal learning - are not merely parallel in this study, but mutually conditioning: ANT provides the analytical framework for understanding complex interactions among actors; the ethics of care provides normative guidance for the inclusion of vulnerable groups; and the concept of informal learning defines the kinds of knowledge and experiences that are the aim of these interactions. Together, they form a framework for designing learning environments that are simultaneously accessible, meaningful, and transformative.

We can conclude that sociomaterial networks (such as the thematic trail) do not strive for stability, but for plurality, openness, and dynamism (Fenwick & Edwards, 2013). Such a perspective is important in designing inclusive interpretation, as it directs attention to diverse ways of understanding learning as a rearticulation of the network. The thematic trail, as planned through PAR, remains an open system that develops, is co-created, and enables learning through transformative practices.

5 Conclusion

The central thesis of the study was that an inclusive thematic trail is not merely a tourism or interpretive product, but a strategy for fostering informal learning in public space and for the co-creation of meanings. In this context, we understand the thematic trail as a sociomaterial learning infrastructure that enables informal learning, where meaning emerges from a network of interactions among people, materials, technologies, stories, and environmental processes. The trail is established as a living and constantly reconstituted network that enables an inclusive learning experience. The model for trail design is based on a combination of PAR (participatory action research) and DTM (design thinking method) through the analytical lenses of ANT (actor-network theory), so the trail is not merely a route in space with interpretive points, but a dynamic network of relationships.

The study makes an original contribution at three levels. At the theoretical level, it expands the application of ANT and the ethics of care (Puig de la Bellacasa, 2017) to the field of inclusive informal learning in public space, where these frameworks have not yet been used systematically. At the methodological level, it demonstrates the feasibility and added value of combining PAR and DTM in the development of inclusive learning infrastructures in local communities - a combination proposed by Katoppo & Sudradjat (2015) in the architectural context, but still rarely tested in the educational context. At the applied level, it offers a transferable model for the development of inclusive thematic trails that takes into account both physical accessibility and the didactic quality of tasks, as well as the sustainable role of the local community in maintaining the trail.

The combination of PAR and DTM proved to be an appropriate methodological framework, but a time-consuming one. The findings are limited, as the selected case does not allow the generalisation of the insights. To continue the research, it would be necessary to include several similar cases and analyse them through other analytical frameworks as well.

For the continuation and deepening of this line of research, we propose three concrete directions. The first is a comparative analysis across different local contexts: to include at least three to five similar cases of the development of inclusive thematic trails in different geographical and institutional environments, in order to identify which factors are generally transferable and which are contextually conditioned. The second direction is the development of measurement instruments for the effects of informal learning: the existing tool of thematic analysis does not enable longitudinal measurement of changes in visitors' knowledge, attitudes, or behaviour; future studies should develop evaluation tools suitable for informal learning situations in public space (Salih et al., 2024). The third direction is to extend inclusivity to additional target groups: at this stage, the trail was designed primarily for older adults and people with mobility impairments; the development of tasks and accessibility solutions for blind, visually impaired, deaf, and autistic persons requires specialised knowledge and partnership with relevant organisations, which would significantly increase the reach of the model.

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Razvoj tematske poti kot prostora priložnostnega učenja

Tematske poti so v zadnjem desetletju postale priljubljena oblika turistične in izobraževalne infrastrukture. V obstoječih raziskavah so obravnavane pretežno z vidika turizma, ohranjanja naravne in kulturne dediščine ter interpretacije prostora, bistveno manj pozornosti pa je namenjeno njihovem potencialu za priložnostno učenje v odprtem prostoru. Prav ta vidik je bilo izhodišče pričujoče participativne akcijske raziskave, ki je bila izvedena v Vipavski dolini v Sloveniji. V Sloveniji je razvitih veliko tematskih poti, a večinoma ne upoštevajo dovolj načela dostopnosti za osebe z oviranostmi. Namen raziskave je bil analizirati kompleksnost procesa soustvarjanja inkluzivne tematske poti ob medsebojnem sodelovanju raziskovalcev in lokalne skupnosti ter odgovoriti na vprašanje, kateri so ključni dejavniki za razvoj take poti kot strategije za priložnostno učenje. Pregled literature je pokazal, da sicer obstajajo posamični primeri inkluzivnih poti (npr. The Letchworth State Park Autism Nature Trail, poti z opisi v brajici, taktilne karte Massachusetts Audubon), a noben obstoječi model ne združuje treh vidikov hkrati: upoštevanja postantropocentričnih pristopov k trajnostnemu razvoju, vključevanja digitalnih dodatkov in vključevanja oseb z oviranostmi. Identifikacija te vrzeli je vodila k opredelitvi raziskovalnega problema in postavljanju dveh osrednjih raziskovalnih vprašanj: (1) Katere so značilnosti načrtovanja in oblikovanja inkluzivne poti, ki spodbuja priložnostno učenje? (2) Kako poteka mreženje znanja, interdisciplinarno povezovanje in dialog z okoljem v kontekstu porajajoče se prakse?

Raziskava je teoretično zasidrana v treh medsebojno dopolnjujočih se konceptualnih okvirih: teoriji akter-mreža (ANT), etiki skrbi in konceptu priložnostnega učenja v odprtem prostoru.

Teorija akter-mreža (ANT), ki so jo razvili med drugimi Callon (1986), Latour (2005) ter Fenwick in Edwards (2012), razume socialne pojave kot porajajoče se mreže, v katerih imajo enakovredno vlogo tako človeški kot nečloveški akterji. V kontekstu tematske poti to pomeni, da drevo v parku, klop ob reki, digitalna aplikacija in zgodovinska stavba niso le pasivni elementi prostora, temveč aktivni soustvarjalci izkušnje učenja. Mreža ni statična, temveč se nenehno preoblikuje z vstopanjem in izstopanjem akterjev, s pogajanjem, konflikti in zavezništvi. Ta perspektiva je bila ključna za razumevanje kompleksnosti procesa soustvarjanja inkluzivne tematske poti.

Etika skrbi, kot jo razvija Puig de la Bellacasa (2017), poudarja pomen medsebojne odvisnosti, ranljivosti in odgovornosti v odnosih med akterji. V projektu je etika skrbi delovala kot normativno vodilo pri oblikovanju dostopnosti nalog, pri spoštljivem in vključujočem jeziku ter pri načrtnem vključevanju skupin, ki so pogosto marginalizirane v turistično-izobraževalnih produktih. Epistemološki premik, ki ga zahteva postantropocentrični pogled, naloži načrtovalcem tematskih poti, da razvijejo nov način razmišljanja o problemih ter nove poti za soustvarjanje znanja, ki je vpeto v vsakdanje življenje in etično odgovornost.

Priložnostno učenje v odprtem prostoru je tretje ključno izhodišče. Falk in Dierking (2018) poudarjata, da je izkustveno učenje najbolj učinkovito, kadar elementi v prostoru nagovarjajo več motivov hkrati. Salih idr. (2024) ugotavljajo, da je učinkovitost priložnostnega učenja v veliki meri odvisna od kakovosti oblikovanja učnih okolij; dobro zasnovan prostor spodbuja radovednost, refleksijo in kritično mišljenje. Tematska pot je bila razumljena kot sociomaterialna učna infrastruktura, ki omogoča priložnostno mikroučenje – niz kratkih, situacijskih učnih izkušenj, ki se odvijajo spontano v stiku z naravnim in kulturnim prostorom.

Metodološki okvir je participativna akcijska raziskava (PAR), ki jo je vodilo načelo emancipatornosti in demokratičnega vključevanja skupnosti (Wood, 2020). Empirično ozadje tvorita dva projekta: mednarodni projekt BeRoots – Between Rivers and Lagoons: Artistic Routes (2024–2026) in lokalni projekt Kulturna dediščina za trajnostni turizem: večgeneracijsko učenje (2024–2025). V PAR smo uporabili metodo oblikovalskega razmišljanja (DTM), ki je omogočila iterativno soustvarjanje z akterji (Katoppo in Sudradjat, 2015). Kombinacija PAR in DTM skupnosti ne vključuje zgolj kot vir podatkov, temveč kot aktivne soustvarjalce rešitev, ki kritično mislijo svojo kulturno dediščino.

Proces je potekal v štirih fazah od oktobra 2024 do maja 2025: (1) mapiranje potreb, (2) opredelitev problema in ciljev poti, (3) iskanje rešitev in prototipiranje, (4) testiranje, implementacija in prilagoditev. Podatki so bili zbrani z analizo dokumentov (strateški in razvojni dokumenti občine, poročila organizacij), opazovanjem z udeležbo (skupni sestanki, testiranje poti) in polstrukturiranimi intervjuji. V prvi fazi je bilo intervjuvanih 18 oseb: lokalni prebivalci (7), strokovnjaki (9) in osebe z oviranostjo (2). V drugi fazi je bilo intervjuvanih 32 oseb, med njimi skupina 25 starejših, ki je pot testirala. Podatki so bili analizirani s tematsko analizo po Braun in Clarke (2006), pri čemer je bila kodirna shema oblikovana deduktivno skladno z dvema temama, ki izhajata iz raziskovalnih vprašanj.

Rezultati so organizirani v dve tematski skupini.

Prva tema: Načrtovanje in oblikovanje poti. V lokalnem okolju delujeta dom starejših občanov in Center za izobraževanje, rehabilitacijo in usposabljanje Vipava (CIRIUS), kar je bistveno vplivalo na zasnovano poti. Po analizi inkluzivnih tematskih poti v tujini in intervjujih s strokovnjaki je bila pot načrtovana brez fizičnih ovir in je primerna za gibanje z vozički. Tematska pot v Vipavi nosi ime Odkrivaj Vipavo skozi čas, kulturo in naravo, ima 6 postaj, je dolga 2 km in zasnovana krožno, a z možnostjo prostega gibanja. Pot je vključujoča (brez fizičnih ovir) in trajnostna (ne posega v okolje, ker uporablja mobilno aplikacijo), primerna za različne ciljne skupine.

Za izvedbo nalog je bila izbrana aplikacija Actionbound, ki omogoča igrifikacijo in s tem večjo motivacijo. Naloge vključujejo elemente večmodalnosti (besedilo, zvok, dotik), place-based learning ter izkustveno učenje. Didaktična zasnova upošteva različne ravni pismenosti in kognitivnih sposobnosti ter spoštljiv, vključujoč jezik. Naloge so bile pripravljene v medgeneracijskih skupinah in večkrat testirane na terenu. V tej fazi pot ni inkluzivna za vse skupine (npr. za avtiste, slepe, gluhe); največ pozornosti je bilo namenjene starejšim in gibalno oviranim. Zemljevid poti se je večkrat spremenil, saj so bile upošteevane vse ovire, ki bi bile neprijazne za gibalno ovirane.

Druga tema: Mreženje znanja in akterjev. Znanje je nastajalo z reflektivno participacijo v različnih skupinah in disciplinah: izobraževanje, turizem, socialno delo, kulturna dediščina. Interdisciplinarno mreženje je bilo epistemološki izziv: prepoznavanje neznanja (npr. nepoznavanje terminologije druge stroke ali lokalnega okolja) je bilo pogoj za vzpostavitev produktivnega dialoga. Ko so akterji stopili v odnos spoštovanja med različnimi vrstami znanja (znanstveno, kulturno, tiho, narativno), je nastala mreža, ki je vodila v inovativne rešitve. Medgeneracijska sestava projektne skupine (mladi študenti, starejši in lokalni prebivalci) je prinašala dodatne izzive, a hkrati obogatila rezultate.

Nastajanje poti je bila porajajoča se praksa, v kateri so akterji dobili svoj pomen skozi relacije, ne vnaprej. Elementi prostora (drevo, klop, reka) so postali aktivni soustvarjalci izkušnje, kar potrjuje analitični okvir ANT. Struktura nalog na tematski poti tvori mrežno pripoved (naracijo); interpretacija ni univerzalna, ampak situacijska, kar sledi konceptu večplastne dediščinske krajine (Wylie, 2007). S participativnim pristopom se poveča verjetnost, da bodo vsebine relevantne in dostopne različnim skupinam, kar potrjujejo tudi raziskave o inkluzivnem pouku (Vamberger idr., 2025; Drljić in Kiswarday, 2021). Etika skrbi (Puig de la Bellacasa, 2017) je zagotavljala normativno vodilo za vključevanje ranljivih skupin.

Kombinacija PAR in DTM se je izkazala za primeren, a časovno zahteven metodološki okvir. Tematska pot je zasnovana kot živa infrastruktura, ki se bo razvijala skupaj s skupnostjo, jo bodo dopolnjevali lokalni ambasadorji in novi akterji. Ne gre za statičen turistični produkt, temveč za odprt sistem priložnostnega učenja, ki soustvarja lokalno identiteto in kulturno dediščino ter spodbuja socialne stike med generacijami.

Ugotovitve so omejene, saj en primer ne omogoča posploševanja. Za prihodnje raziskave bi bilo potrebno vključiti več primerov iz različnih kontekstov ter razviti na-

tančnejše instrumente za merjenje učinkov priložnostnega učenja na tematskih poteh. Prav tako bi bilo dragoceno razširiti inkluzivnost poti na druge oviranosti (slabovidnost, gluhoti, motnje avtističnega spektra) in razviti ustrezen didaktični instrumentarij.

Data Availability Statement

This article is based on research data deposited in the authors' personal archives and that are not publicly available; however, they may be obtained from the author upon reasonable request.

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