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The Role of Interviews in the Design Thinking Method in Participatory Adult Education

Abstract: This paper analyses the use of the design thinking method in the project *Cultural Heritage for Sustainable Tourism: Intergenerational Learning*, which aimed to promote intergenerational cooperation and integrate cultural heritage into sustainable tourism. The project was implemented by the Ajdovščina Adult Education Centre, the Faculty of Arts at the University of Ljubljana, as the applicant and lead partner, the Faculty of Tourism Studies at the University of Primorska and a business entity, which developed a thematic trail accessible to people with disabilities. The paper highlights the use of interviews as a key tool in the design thinking method, enabling the development of the thematic trail through all stages of the process with the active participation of older people, students and residents. The interviews were used to verify accessibility and understand the needs of the local community and vulnerable groups, which was crucial for identifying and developing the stations along the thematic trail. They also served to test the thematic trail, allowing adjustments to the trail and changes to the individual stations. The project results confirm that the design thinking method is an effective tool for involving all generations and vulnerable groups in co-creating solutions that respect cultural heritage and enable sustainable development. Based on this, we conclude that a participatory approach involving various stakeholders encourages the development of solutions that are meaningful to the local environment and visitors.

Keywords: design thinking method, participatory adult education, interview

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Uloga intervjuja u metodi dizajnerskog razmišljanja u participativnom obrazovanju odraslih

Apstrakt: U ovom radu se analizira primena metode dizajnerskog razmišljanja u projektu *Kulturno nasleđe za održivi turizam: međugeneracijsko učenje*, čiji je cilj bilo podsticanje međugeneracijske saradnje i integracija kulturnog nasleđa u održivi turizam. Projekat su realizovali Centar za obrazovanje odraslih Ajdovščina, Filozofski fakultet Univerzitetu u Ljubljani, kao podnosilac prijave i vodeći partner, Fakultet za turističke studije Univerzitetu Primorska, kao i jedan privredni subjekt koji je razvio tematsku stazu pristupačnu osobama sa invaliditetom. U radu se ističe upotreba intervjuja kao ključnog alata metode dizajnerskog razmišljanja, koji je omogućio razvoj tematske staze u svim fazama procesa uz aktivno učešće starijih osoba, studenata i lokalnog stanovništva. Intervjui su korišćeni za proveru pristupačnosti i razumevanje potreba lokalne zajednice i ranjivih grupa, što je bilo od presudnog značaja za utvrđivanje i razvoj pojedinačnih stanica duž tematske staze. Takođe su služili za testiranje same staze, omogućavajući njeno prilagođavanje i izmene na pojedinačnim lokacijama. Rezultati projekta potvrđuju da je metoda dizajnerskog razmišljanja delotvoran alat za uključivanje svih generacija i ranjivih grupa u zajedničko osmišljavanje rešenja koja uvažavaju kulturno nasleđe i omogućavaju održivi razvoj. Na osnovu toga zaključuje se da participativni pristup koji uključuje različite aktere podstiče razvoj rešenja koja su smisljena i relevantna kako za lokalnu sredinu, tako i za posetioce.

Ključne reči: metod dizajnerskog mišljenja, participativno obrazovanje odraslih, intervju

Introduction

In modern adult education, there has been a shift from the transmission model of teaching to participatory, dialogical and experiential forms of learning, which are deeply rooted in the tradition of popular education. This shift is not merely didactic, but also reflects broader epistemological and value changes in the understanding of knowledge, learning and the role of education in the community. Participatory adult education assumes that knowledge is created through interaction, dialogue and joint action, and that participants' life experiences are legitimate and indispensable sources of learning (Freire, 2005; Gruden et al., 2025; Ličen et al., 2024; Tett, 2010). In this conceptualisation, the educational process is characterised not by unidirectional content delivery but by collaborative inquiry, reflexive practice and contextually situated action within specific social and cultural contexts.

In seeking methodological approaches that operationalise this understanding of adult education in practice, the design thinking method has gained increasing prominence over the past decade. This human-centred, iterative and collaborative approach to solving complex problems was developed at the intersection of design, engineering and the social sciences and is now gaining ground in education (Brown, 2008; Razzouk & Shute, 2012). Design thinking is not merely a set of techniques, but a way of thinking and acting that focuses on understanding people, their context and the active involvement of various stakeholders in co-creating solutions. This emphasis on people, dialogue and the joint search for meaning creates opportunities for its meaningful use in participatory forms of adult education.

The conceptual similarity between design thinking and participatory adult education is evident at several levels. Both approaches arise from a critique of linear, hierarchical models of knowledge transfer and emphasise process, reflection and learning through action. Both participatory education and design thinking view problems as open, multi-layered and socially conditioned, requiring the inclusion of diverse perspectives and experiences³ (Evans et al., 2022; Manzini, 2015). In both cases, the participant takes an active role, while the expert or educator acts as a facilitator who creates conditions for dialogue, co-creation and collaborative learning. Thus, design thinking can be understood as a methodological framework that provides participatory principles with a structured yet open form of practice.

Interviews play a special role in this process and are most often situated in the so-called empathy phase in the design thinking literature. However, viewing the interview merely as an initial research technique simplifies its full potential in educational and participatory contexts. In qualitative research, the interview has long been recognised as a method that not only collects data but also enables the co-creation of meaning through interaction between researcher and interviewee (Banjac, 2020; Cohen et al., 2018; Kvale, 1996). Similarly, in design thinking, interviews can be seen as a dialogical and reflective practice that is not confined to the initial phase but permeates all stages, from exploring and defining the problem to developing, testing and reflecting on solutions.

In participatory adult education, the interview takes on an additional dimension. It serves not only as a research tool but also as a learning event in

³ While design thinking serves as a methodological framework for the iterative, human-centred resolution of complex problems, literature suggests it can also be understood as an approach that contributes to social change when applied to promote social innovation, participatory community engagement, and sustainable solutions. In these applications, where empathy, collaboration and iteration align with the goals of social justice and sustainability, design thinking transcends methodology and acts as a tool for social transformation (Chan, 2018; Dombrowski & Lohrmann, 2018; Ertas, 2019).

which participants develop listening skills, the ability to articulate their own experiences, critical thinking and an understanding of others' perspectives. At the same time, the interview legitimises the voices of participants and community members and contributes to the democratisation of the learning and development process (Ličen et al., 2024; Tett, 2010). In this sense, interviews in design thinking not only support the understanding of needs, but also actively co-create the learning and social reality in which solutions are formed.

The purpose of this paper is to analyse the use of the design thinking method as a participatory framework in adult education, with particular focus on interviews as a key research and learning tool in this process. We show that interviews are not limited to the initial empathy phase but extend through all phases of the design thinking method, from exploring and defining the problem to developing, testing and reflecting on solutions. In doing so, we demonstrate how interviews contribute to the co-creation of knowledge and the active involvement of participants, which is crucial for the successful implementation of participatory forms of adult education. Using the example of the student project *Heritage Culture for Sustainable Tourism: Intergenerational Learning*, we illustrate how interviews serve as a tool for collecting data, verifying ideas and testing solutions, while also enabling participants to become active co-creators of the solutions. Our findings show that (1) interviews are not just a tool for collecting data but are a key part of co-creating solutions; (2) interviews enable iterative testing of ideas and adaptation of the thematic trail in a real environment; and (3) the use of the design thinking method in participatory adult education encourages intergenerational cooperation, co-creation of solutions and the development of sustainable approaches.

The design thinking method as a participatory framework in adult education

In recent years, the design thinking method has increasingly featured in discussions on adult education as a response to the need for approaches that enable active participant involvement, link learning to real-life situations and develop solutions based on the needs of individuals and communities. Adult education research and lifelong learning shows that the design thinking method is particularly suitable in environments where target groups are heterogeneous, problems are complex and learning is closely linked to practice and the local context (Bogdanova, 2021; Galeotti, 2020; Vallera & Sadat, 2020). Thus, design thinking is

not only a method of innovation but also a process that can support the fundamental principles of participatory adult education.

Participatory adult education is based on an understanding of learning as a social, situated and dialogical process in which knowledge is created through collaboration, exchange of experiences and joint action (Evans et al., 2022; Furlan, 2020, 2021; Ličen et al., 2024; Tett, 2010). The design thinking method aligns with these principles in both content and process, as it focuses on cooperation among various stakeholders, joint identification of problems and iterative development of solutions. Adult education studies confirm that using the design thinking method encourages the active role of participants, strengthens their sense of shared responsibility for the learning process and enables the transfer of learning to specific life and work situations (Sanusi, 2023; Vallera & Sadat, 2020).

The design thinking method is most often presented in the literature as a process of five interrelated phases: (1) empathy, (2) problem definition, (3) ideation, (4) prototyping, and (5) testing (Razzouk & Shute, 2012; Wippermann, 2023). These phases are often illustrated by the double diamond model, which emphasises the alternation of divergent and convergent thinking and a clear distinction between problem exploration and solution development (Design Council, 2019). Such structuring plays an important role in adult education, especially for older adults, as it enables transparency of the process and the participants' gradual involvement in increasingly demanding forms of collaboration.

The empathy phase in participatory adult education goes beyond the initial collection of information about the users. Research on service design in adult education emphasises that, within the design thinking method, empathy functions as a process of recognising and legitimising participants' experiences, as well as their local and experiential knowledge (Bogdanova, 2021; Sanusi, 2023). This phase is particularly important for older adults, as it allows their life experiences and views to be treated as a source of knowledge rather than an obstacle to learning. In this sense, empathy acts as a mechanism of empowerment and inclusion. In the problem definition phase, the participatory potential of design thinking is further strengthened. In the design thinking method, a problem is not understood as a predefined category but as the result of a joint interpretative process. Adult education research indicates that the very possibility of co-creating the problem is key to developing a sense of control over the learning process (Galeotti, 2020; Vallera & Sadat, 2020). In participatory education for older adults, this phase allows participants to articulate what they understand as a challenge in their environment and thus actively influence the direction of further learning and action. Ideation, as the phase of idea generation, is often misunderstood in participatory adult education as a spontaneous creative activity. Studies show

that ideation has the greatest learning potential when it is designed as a structured collective process that enables the exchange of different types of knowledge and experience (Tavares et al., 2018; Terzaroli, 2018). For older adults, ideation also serves as a space for breaking down stereotypes about passivity and lack of creativity, as research confirms that older adults can make an important contribution to the development of innovative yet realistic solutions in such processes (Galeotti, 2020; Victorino et al., 2023). Prototyping and testing enable learning through action and direct experience. Bogdanova (2021) concludes that experiential learning, supported by elements of service and design thinking, strengthens reflection, collaboration and the transfer of learning into practice. In the context of older adult education, prototypes often serve as a tool for gradually introducing change and reducing fear of failure. Thus, testing is not a final phase but a continuation of the learning process that facilitates reflection, adaptation and joint evaluation of solutions (Wippermann, 2023).

The double diamond model further highlights the importance of alternating between the broadening and the narrowing focus within the learning and co-creation process. Adult education research indicates that this model supports participatory processes, as it first enables a wide expression of experiences and perspectives, which is followed by gradual joint coordination and decision-making (Beligatamulla et al., 2019). For older adults, this structure is also important for psychological safety, as it facilitates their gradual inclusion and clear orientation throughout the process.

Power relations remain a central issue in the use of the design thinking method in participatory adult education. Participatory approaches require a shift of power from the expert to the participants, meaning that participants are not only involved in implementing activities but also have real influence over content and process decisions (Evans et al., 2022; Tett, 2010). The design thinking method has the potential to support such a shift, as it is based on co-creation and collective decision-making. However, empirical studies caution that the design thinking method is often applied in educational settings in a technicist manner, where participants are only superficially involved (Beligatamulla et al., 2019). The risk of so-called “false participation” is particularly pronounced in environments where the target groups are older adults. If the process is too directive or if the key decisions are made outside the group, the participatory potential of the method is quickly lost. Research warns that such use of the design thinking method can lead to the participants’ frustration and reinforce feelings of exclusion (Galeotti, 2020; Vallera & Sadat, 2020). Therefore, when using design thinking in adult education, it is essential to reflect on the facilitator’s role and consciously create conditions for equal participation. The instrumentalisation of

the design thinking method as a universal solution to complex social problems poses an additional risk. Authors point out that the design thinking method cannot address structural inequalities or systemic constraints on its own and may even obscure them if used without critical judgement (Aithal et al., 2024; Taimur et al., 2022). In participatory adult education, this means that working within the design thinking framework only makes sense as part of a broader andragogical and social context that considers the power dynamics and responsibilities of all actors involved.

Despite these limitations, researchers confirm that the design thinking method, when used reflectively and participatorily, can contribute significantly to the development of quality learning practices in adult education. It enables the integration of learning with community action, strengthens the participants' social and cognitive abilities and supports the co-creation of solutions that are meaningful and sustainable (Bogdanova, 2021; Vallera & Sadat, 2020; Victorino et al., 2023). It is in this process-oriented, dialogical and critical dimension that the design thinking method is establishing itself as a relevant participatory framework for contemporary adult education.

Interviewing as a research and learning practice in the phases of design thinking

In adult education, particularly in participatory contexts, an interview should not be regarded merely as a research technique for data collection, but as a relational and epistemological practice in which knowledge is co-created through dialogue. This perspective is well established in the tradition of qualitative and participatory research, where the interview is understood as a process of jointly exploring meanings, experiences and interpretations (Banjac, 2020; Cohen et al., 2018; Kvale, 1996). Here, knowledge is not something the researcher or educator "extracts" from the interlocutor, but something that emerges through interaction, negotiation and reflection.

Participatory research, as conceptualised by contemporary theories of adult education (Cornish et al., 2023; Evans et al., 2022; Kastner & Motschilnig, 2022; Santos et al., 2025) assumes that participants possess legitimate knowledge about their own life circumstances and communities. Tett (2010) highlights that dialogue is central to participatory learning, as it enables the recognition and valuing of experiential knowledge and contributes to redistributing power within the learning process. Evans et al. (2022) further note that participatory research approaches in community education aim not only to understand reality, but also

to transform it collaboratively. In this context, the interview becomes a space where research, learning and action are intertwined.

The design thinking method aligns conceptually with this understanding of the interview, as it presupposes the participation of users or participants as co-creators of solutions. In practice, however, interviews in the design thinking method are often limited to the empathy phase, where their main purpose is to gather information about user needs. Research in the field of design thinking in adult education indicates that such instrumental use of interviews limits the participatory potential of the method (Bogdanova, 2021; Vallera & Sadat, 2020). If the interview is viewed solely as an initial research activity, participants remain informants rather than active co-creators of knowledge. In a participatory context, however, the interview assumes a different role. It becomes a process in which the participants, together with the practitioners, explore their environment, experiences and challenges and develop a shared understanding of reality through dialogue. Such an interview serves as both a research method and a learning event. By participating in interviews, individuals learn to observe, ask questions, listen and reflect, which fosters the development of critical thinking and research skills. In this sense, interviews in the design thinking method are not only a means of data collection, but also a tool for empowering participants and enhancing their active role in the learning and co-creation process.

An analysis of the use of interviews in the design thinking method shows that their value is not confined to a specific phase but lies in their multi-layered and iterative application throughout the entire process. Interviews in the design thinking method facilitate exploration, reflection and validation at various stages, thereby supporting the participatory nature of adult education.

In the initial stages, interviews allow for the exploration of the participants' experiences and perceptions, as well as the local environment in which the education occurs. Through interviews, participants investigate their community, its spaces, stories and needs. This exploration goes beyond the individual and becomes a collective process of understanding the environment. Research on service design within adult education confirms that interviews exploring the local context foster greater community engagement and deepen the participants' understanding of the complexity of social issues (Bogdanova, 2021; Sanusi, 2023). As the process progresses, interviews support the joint formulation of the problem. Rather than defining the problem externally, dialogue is used to develop an understanding of what is truly important and worth addressing for the participants. In this context, interviews function as a tool for negotiating meanings, where different perspectives are confronted, complemented and transformed. This process is crucial for participatory adult education, as it allows participants to share

responsibility for the direction and goals of the educational process (Evans et al., 2022; Tett, 2010).

In the creative phases, interviews do not lose their role but are transformed. They serve as reflective prompts, enabling in-depth consideration of possible solutions, their consequences and their suitability within a specific context. Research of adult education and entrepreneurial learning indicates that such reflective use of interviews prevents superficial idea generation and encourages the development of thoughtful, contextually grounded solutions (Galeotti, 2020; Victorino et al., 2023). At this stage, interviews allow creativity to be combined with critical judgement. In the later stages of the design thinking process, interviews facilitate ongoing verification and validation of developing solutions. Through interviews, participants reflect on prototypes, assess their usefulness and consider possible improvements. This use of interviews reinforces the iterative nature of the design thinking method and supports learning through action. In these phases, interviews should extend beyond evaluating outcomes to include reflection on the learning process, collaboration, and changes in the participants' understanding. (Bogdanova, 2021; Taimur et al., 2022).

The design thinking method most often employs various forms of qualitative interviews that support the phases of empathy, problem definition, idea generation and solution testing, with particular emphasis on empathy interviews, reflective interviews, stakeholder interviews and contextual interviews. Literature understands these forms as a spectrum of interview practices rather than as strictly distinct "types", as they often overlap and combine depending on the phase of the process.

We will first describe the semi-structured interview in more detail. It differs most from the unstructured⁴ interview in that the researcher prepares a few key open-ended questions in advance and asks the interviewee additional questions during the interview based on their responses. It combines elements of both structured and unstructured approaches to data collection. This method

⁴ The most common way to classify interviews is by their degree of standardisation, as this indicates how much the interview is standardised in terms of questions, procedure, circumstances, quality and execution. Based on this, we distinguish between non-standardised (unstructured) and standardised (structured) interviews. Unstructured interviews are more free-flowing and do not have predetermined questions. This approach facilitates the discovery of unexpected topics and in-depth exploration, but it requires a highly skilled interviewer (Choosing an Interview Type for Qualitative Research, n.d.). There are several types, such as non-directive, focused, semi-structured, in-depth and group interviews. Structured interviews have predetermined questions that are asked in a specific order. This approach enables a high degree of comparability between the responses of different participants, but it is less flexible. "This type of interview is characterised by the fact that the process of obtaining data (information) is standardised for all respondents, which means that everyone answers the same questions, the instructions or explanations regarding the questions and answering them are the same for everyone, and the procedure for recording answers is also the same for all interviews" (Vogrinc, 2008, p. 105).

allows researchers to obtain in-depth information on the topic under study while maintaining a degree of flexibility and adaptability during the interview (Banjac, 2020). Generally, the interviewee has much more space to tell their story in their own way and to express their opinion and perspective on the topic, but the specific structure of the interview allows for a degree of standardisation⁵, enabling some comparison between individual interviews (Edwards & Holland, 2013). The key questions are the same for all interviewees, but the additional questions vary depending on each interviewee's opinion, perspective, role in a given situation and level of talkativeness, allowing questions to be adapted to individual interviewees. This is a major advantage of this type of interview: obtaining answers to the same questions – which facilitates comparison, and to different questions – which enables in-depth exploration of the topic, yielding rich and detailed data and flexibility in exploring new topics that arise during the interview. However, the use of semi-structured interviews also entails several limitations, including increased analytical demands arising from response variability, the potential omission of relevant topics due to their flexible structure, and diminished comparability across interviewees (Banjac, 2020).

There are also contextual, reflective, stakeholder and empathic interviews, which, alongside unstructured interviews, represent complementary research approaches in participatory adult education. Each has its own specific role: the first reveals actual practices and the learning environment, the second deepens personal reflection, the third connects the broader environment into an ecosystem and the fourth connects, understands and explores.

A contextual interview is a qualitative technique in which the researcher accompanies the interviewee in their natural environment, such as their workplace or learning setting, while they carry out their actual work or daily activities. It is an interview “in context” that focuses on what people do, how they do it and why, rather than simply asking for abstract descriptions or opinions (Mortensen, 2020; Stange et al., 2024). It is recognised as one of the key generative research approaches because it provides deep insight into the goals, needs, constraints and informal practices of users, which are often overlooked in traditional interviews. What makes it distinctive is that the researcher does not wait for a retrospective explanation but includes ongoing clarification of decisions and problems as they arise during actual work (*User Experience Methods Catalogue*, n.d.). It is particularly suitable in an andragogical context because it provides insight into the actual

⁵ Interviews are classified according to various criteria. There are several types of research interviews, which differ in their degree of structure or standardisation, method of data collection and number of respondents (Vogrinc, 2008).

learning processes, habits and adaptations that adults incorporate into their daily work and learning (*Design Thinking*, n.d.).

Reflective interviewing involves an active partnership between the interviewer and the interviewee, with the latter becoming a co-author in understanding their own experiences. In adult education, reflective interviews encourage critical thinking and self-reflection, both of which are essential for transformative learning (Pessoa et al., 2019). The interviewer and interviewee jointly clarify the meaning of events in conversation, with reflection reducing the researcher's subjective interpretations (Trundle et al., 2025). A key feature of reflective interviews is their focus on experience and perception: questions guide the interviewee to describe specific situations, their thoughts and feelings and how they understand them in retrospect (Jordan, 2023; Kordeš & Smrdu, 2015). The interview is not just a collection of data, but also a space where the participant learns about themselves, their practice and their decisions, as self-reflection is built into the process as a central element (Jordan, 2023; Kordeš & Smrdu, 2015). Reflexivity is expected not only from the interviewee but also from the interviewer, who constantly checks their own assumptions, position of power and influence on the course of the interview (Jordan, 2023).

Stakeholder interviews involve various actors, such as participants, lecturers, financiers and the community, with the interviewer exploring their needs, expectations and concerns (*Stakeholder Engagement Methods*, 2025). The focus is on understanding the goals, expectations, concerns and limitations of stakeholders, rather than the user experience itself. Another important aim is to build alliances and support for the project, as interviews help stakeholders feel included and heard at an early stage of the process (Gibbons, 2022; *Internal Stakeholder Interviews for User Research*, 2025).

An empathy interview is an in-depth, open-ended interview used in the empathy phase of design thinking, where the main aim is to understand people's experiences, emotions, motives and hidden needs, rather than to test pre-designed solutions. The emphasis is on listening to the participants' stories and contexts and exploring their experiences, not merely collecting facts or opinions (Lucas, 2024). This type of interview attempts to "see the world through the eyes" of the interviewee, so the researcher asks about specific situations, examples and emotions that accompany experiences (e.g., learning a new technology, visiting the doctor, looking for a job). The interviewer should temporarily suspend their own assumptions and focus on the interviewee's perspective, a core principle of the empathy phase in the design thinking process (Mortensen, 2020). In adult education, these interviews contribute to the inclusive design of programmes because

they consider different perspectives, improve the sense of inclusion and highlight important interests, which strengthens motivation and, consequently, the success of education (*Stakeholder Engagement Methods*, 2025). They also enable the alignment of educational programme objectives with stakeholder interests and the elimination of risks early in the process.

The comprehensive use of interviews in the design thinking process enables participants to be not only sources of information but also active researchers of their own environment and co-creators of solutions. The interview becomes a means of connecting participants with the local environment, as it encourages them to explore, engage in dialogue with other community members and reflect on social relationships. In this way, the interview contributes to achieving the fundamental goals of participatory adult education.

Student project *Cultural Heritage for Sustainable Tourism: Intergenerational Learning*

The project *Cultural Heritage for Sustainable Tourism: Intergenerational Learning*⁶ was an interdisciplinary initiative aimed at developing an inclusive thematic trail focused on cultural heritage, sustainable tourism and intergenerational learning. It took place during the 2024/2025 academic year. The project brought together various educational institutions and economic entities. Ten students from various fields participated: three students of andragogy, three of ethnology and cultural anthropology, one of geography and three of tourism. The pedagogical mentors were from the Faculty of Arts at the University of Ljubljana and the Faculty of Tourism Studies at the University of Primorska. The work mentors came from the Ajdovščina Adult Education Centre and the business sector – specifically, the Deci s.p. winery. In addition to the students, older participants from the Ajdovščina Adult Education Centre and retired experts also contributed to the development of the thematic trail: one expert in tourism, one in education and one in working with people with disabilities. Students and older participants participated in all project phases, from field research to testing the final solutions for the thematic trail.

The main objective was to develop the *Discover Vipava through Time, Culture and Nature* thematic trail, which connects the cultural heritage of the Vipava Valley, sustainable tourism and the inclusion of different generations.

⁶ The project was co-financed by the European Union from the European Social Fund Plus and by the Ministry of Higher Education, Science and Innovation of Slovenia.

The trail was designed as an inclusive digital trail, accessible to all generations, especially people with disabilities and older people. It included six thematic stations related to local cultural heritage, winemaking, musical heritage and natural attractions of the Upper Vipava Valley⁷. The thematic trail is available in the ActionBound app in Slovenian. The app allows dynamic adaptation of the activities without altering the physical space, enabling repeated updates and enhancements to the content of the stations based on findings from interviews and field analysis.

The digital thematic trail is 2 km long and includes the following stations: (1) Lanthieri Park, (2) Main Square, (3) Podfarovž, (4) Lanthieri Mansion, (5) Tabor and (6) By the River. Each station contains a description of the place, landmark or natural phenomenon, along with activities for visitors. The activities vary by location. In Lanthieri Park, visitors participate in a mindfulness exercise, listening to a guided session on the app, which they perform in the park. On the main square, they learn about the architect Jože Plečnik and the Slovenian national anthem *Zdravljica*. There are two activities: first, the visitors reflect on monuments and their significance and, second, they fill in the missing words of the Slovenian national anthem. At Podfarovž, they learn about the sources of the Vipava River and upload a photo to the app. At Lanthieri Mansion, they learn about the Lanthieri family and the story of the Gloglo glass, followed by a quiz. At the fifth station, they learn about the Neuhaus family coat of arms, answer related questions and design their own coat of arms. The final station focuses on the Vipava River and song. Visitors listen to the Slovenian folk song *Kje so tiste rožce moje* (Where are my roses) and use the river as a source of relaxation and meditation.

All content was developed by students and older participants on the basis of field analysis, interviews, and discussions with local residents and stakeholders, as well as learning about cultural heritage and local history, and conducting a needs analysis from both tourism and accessibility perspectives. After developing the trail, they also jointly designed a promotional plan, trail logo, brochure and promotional materials. The following section outlines the development of the thematic trail *Discover Vipava through Time, Culture and Nature*, with particular attention to the application of the design thinking method and interview techniques.

In the project, we used the design thinking method, described in detail in the first part of the paper. Interviews were the key technique for collecting data, testing ideas, developing solutions and evaluating the trail in all the stages. They enabled the participants to be active co-creators of the thematic trail, since

⁷ The Upper Vipava Valley, located in Slovenia's Littoral region, extends from the village of Podnanos in the east to the town of Ajdovščina in the west, with Vipava as its central town.

they were involved in designing the stations along the trail, collecting stories and checking the accessibility of the trail. Before conducting the interviews, we held a training session on interviewing techniques, where students and older people who participated in data collection acquired the necessary skills and knowledge to conduct high-quality interviews. The training covered preparing questionnaires, methods for asking open-ended questions and ethical principles for conducting interviews with different aims, such as exploring the local environment, collecting stories, identifying user needs and testing ideas and solutions.

The first phase involved conducting interviews with the residents and the experts. These interviews focused on understanding the needs, expectations and perspectives of various stakeholders, including people with disabilities and older participants. The aim was to explore how to ensure that the thematic trail is accessible, inclusive and connected to the local cultural heritage.

Table 1. Interviewees and interview objectives in the first phase

Interviewees	Interview objectives	Number of interviews
Residents	To learn about opinions on cultural heritage, which local characteristics residents would include in the thematic trail and their views on the thematic trail	4
Musical artist	To learn about the characteristics of the musical cultural heritage of the Upper Vipava Valley and prepare a selection of songs to be included in the thematic trail	1
Music teacher	To learn about the use of musical heritage in teaching (transfer in public spaces), with an emphasis on groups with disabilities	1
Expert at a retirement home (social worker)	To learn about the needs of older people in order to adapt the thematic trail to them.	1
Expert at a retirement home (occupational therapist)	To identify obstacles, especially mobility obstacles	1
Elderly citizens	We spoke to random passers-by and asked for their opinion on the thematic trail.	2
Tourism expert (TRG Vipava Tourism Institute)	To learn about the characteristics of tourism and opinions on the characteristics and impacts of thematic trails	1
Wine expert	To learn which elements of cultural heritage can be connected to winemaking and how a thematic trail can be linked to winemaking.	1
Person with a disability (Multiple Sclerosis Society of Slovenia)	To learn how people with disabilities experience accessible tourism, inclusion and barriers	1
Total		13

Based on the interviews and their analysis, we identified key cultural characteristics and the needs of vulnerable groups, such as trail accessibility and the inclusion of significant historical sites. We relied on these findings when we began developing a concept for a thematic trail that would address the needs identified in the interviews and be accessible to various target groups, particularly older people and people with disabilities.

In the second phase, we began developing solutions. Through further interviews, we verified whether our proposed stations along the trail were meaningful, accessible and suitable for fulfilling various objectives, such as accessibility for vulnerable groups, the educational goals of the trail, involvement of the local community and the promotion of sustainable tourism. At this stage, the interviews allowed us to gather feedback on how the visitors and participants perceived our design and which adjustments we had to make.

Table 2. Interviewees and interview objectives in the second phase

Interviewees	Interview objectives	Number of interviews
Residents	To evaluate the suitability of the sequence of the stations (1) and the use of smartphones (2); and to conduct the first trail testing (3)	3
Social worker at a retirement home	To evaluate the suitability of the thematic trail for wheelchair users and group use (questions, photos, activities)	1
Multiple Sclerosis Association of Slovenia, Goriška branch	To evaluate the suitability of the trail for adults with disabilities.	1
Hiking group	To evaluate the suitability of the stations and activities (1); perform the second test (2)	25
Expert in non-formal education	To check the suitability of the activities on the thematic trail.	1
Total		31

Based on the interviews and findings, we adjusted the sequence of the stations and activities to make them accessible to all users. We also improved the interactive activities, facilitating the inclusion of different groups, such as older people and people with disabilities.

After completing the testing of the thematic trail, we conducted the first and second trail tests and interviewed the users to further explore the accessibility of the developed thematic trail. The aim of the research was to obtain feedback on the accessibility of the trail and users' experiences.

Table 3. Interviewees and interview objectives after testing the thematic trail

Interviewees	Interview objectives	Number of interviews
Trail users	To evaluate user experience and trail accessibility, and to formulate recommendations for improvement	5
Tourism accessibility expert	The assess trail accessibility for people with disabilities	1
Project team members	To collect feedback on prior testing and adjustments	5
Hikers	To undertake further testing of individual trail stations and activities	25
Total		36

The post-testing interviews provided us with feedback on the most visited stations, what the visitors appreciated most and which activities were too difficult or not interesting enough. The interviews informed the adaptation of the activities and content to enhance inclusivity and accessibility across generations, while safeguarding the cultural value of the trail. They also provided a realistic appraisal of the trail's accessibility and guided subsequent modifications aimed at its improvement.

The texts created within the project – terrain analysis, characteristics of the Upper Vipava Valley, learning in public open spaces, intergenerational learning, sustainable, accessible and regenerative tourism, and experiences and findings from the use of the design thinking method and the development of a digital thematic trail – were compiled in the professional monograph *Thematic Trail as a Strategy for Lifelong Learning*⁸, published by the Ajdovščina Adult Education Centre.

Conclusion

The analysis and application of the design thinking method in the student project *Heritage Culture for Sustainable Tourism: Intergenerational Learning* suggest that interviews play a crucial role in the effective implementation of design thinking in participatory adult education. In this context, interviews function not only as a tool for data collection, but also as a means of co-creating meaning and actively

⁸ Building on our experience in the student project *Culture of Heritage for Sustainable Tourism: Intergenerational Learning*, we further developed thematic trails within the project *BEroots – Between Rivers and Lagoons: Artistic Routes*. As part of this work, we published the professional monograph Furlan (2024) (Ed.), *Thematic Trail as a Strategy for Lifelong Learning*, produced within the BEroots project. The project is co-funded by the European Union under the Interreg VI-A Italy–Slovenia Programme. Further information is available at: <https://www.ita-slo.eu/en/news-and-events/news/professional-monograph-thematic-route-strategy-lifelong-learning>

involving participants in the development of solutions. Through this process, a thematic trail was developed that responds to local needs and experiences, while fostering intergenerational cooperation and the inclusion of vulnerable groups. Interviews also supported reflection and collaboration among stakeholders, which proved important for developing sustainable solutions that are meaningful and useful for diverse user groups. The findings further suggest that the design thinking method is well suited to participatory educational contexts, enabling both older and younger participants to engage actively, co-create solutions and work within their local environment. By encouraging active participation, all actors – from experts to local residents – became co-authors of the thematic trail. This process resulted in an inclusive thematic trail that is not only a tourist offering, but also a learning process through which participants explore, share and contribute to the preservation of cultural heritage.

However, the use of the design thinking method is not without limitations. One challenge lies in the time and organisational complexity associated with involving multiple stakeholders, which can prolong decision-making processes and undermine project efficiency. In addition, measuring the impact of participatory approaches can be difficult, as outcomes often rely on the participants' subjective perspectives, thereby limiting the generalisability of the findings. Despite these constraints, the design thinking method offers significant potential for the development of participatory education, as it fosters active co-creation and reflection, contributing to sustainable learning and innovation.

The application of design thinking principles facilitates innovative participatory learning methods in adult education, particularly in the fields of sustainable tourism and cultural heritage conservation. Global sustainable tourism trends increasingly include local communities and cultural heritage as key factors in developing tourism that enriches rather than degrades the environment. In this context, the design thinking method enables the creation of solutions based on the needs of the local community and visitors, promoting the development of sustainable tourism practices. Integration of cultural heritage into tourist trails is not only a matter of preserving history, but also of promoting the communities' identity and social cohesion. The design thinking method facilitates the development of solutions ensuring long-term sustainability and innovative approaches to preserving cultural heritage. Moreover, its application enables the active involvement of diverse actors—from students to older participants—in co-creation processes, thereby fostering intergenerational cooperation and knowledge exchange. Participatory education and intergenerational collaboration are key components in the development of sustainable communities, as they engage both younger and

older participants in the joint creation of solutions. This approach aligns with the objectives of European education policies and the broader global agenda for sustainable development. In this way, the design thinking method enables not only the development of innovative solutions for sustainable tourism, but also the co-creation of knowledge through the active involvement of all participants in a process that fosters reflection, learning and innovation. The student project *Heritage Culture for Sustainable Tourism: Intergenerational Learning* illustrates how the use of the design thinking method in adult education can achieve sustainable solutions for local communities and visitors, while generating educational content that is relevant, inclusive and supportive of cultural heritage preservation and sustainable development.

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