Intergenerational Cooperation in the Development of a Systems Thinking Digital Platform

Anej Virtnik
University of Maribor
Faculty of Economics and Business
Razlagova14, 2000 Maribor, SLOVENIA

Jaka Zorman
University of Maribor
Faculty of Electrical Engineering and Computer Science
Razlagova14, 2000 Maribor, SLOVENIA

Maj Donko
University of Maribor
Faculty of Electrical Engineering and Computer Science
Razlagova14, 2000 Maribor, SLOVENIA

Sara Hlebič
University of Maribor
Faculty of Economics and Business
Razlagova14, 2000 Maribor, SLOVENIA

Aleksander Tomić
University of Maribor
Faculty of Economics and Business
Razlagova14, 2000 Maribor, SLOVENIA

Urška Murko
University of Maribor
Faculty of Economics and Business
Razlagova14, 2000 Maribor, SLOVENIA

Tadeja Jere Jakulin, Full Professor
University of Primorska
Faculty of Tourism Studies - TURISTICA
Obala 11a, Koper, SLOVENIA
tadejajerejakulin@upr.si

Igor Perko, Professor, PhD
University of Maribor
Faculty of Economics and Business
Razlagova14, 2000 Maribor, SLOVENIA
igor. perko@um.si

Abstract

This paper examines intergenerational cooperation in the Systems Thinking and Society website development project, an initiative aimed at creating a digital platform for collaboration, dissemination, and knowledge exchange in the field of systems thinking in Slovenia and beyond. The platform is designed to connect stakeholders from education, public administration, civil society, and business, while supporting the visibility of good practices, research, and collaborative initiatives.

The study focuses on a project team composed of two senior members over the age of 50, including the coordinator and project owner, and six students aged between 20 and 24. It explores how generational differences influence communication patterns, role distribution, decision making, evaluation, and mutual learning during the development process.

Methodologically, the study applies a qualitative approach based on structured group discussions. Team members discussed and assessed the work of other groups, and these discussions were recorded, transcribed, and analysed thematically. This phase was followed by a joint discussion aimed at identifying recurring tensions, strengthening synergies, and proposing ways to overcome emerging issues.

The findings indicate that intergenerational diversity created both coordination challenges and important learning opportunities. Differences in expectations, pace of work, and communication style occasionally produced misunderstandings, yet they also enabled the combination of strategic oversight, contextual experience, digital fluency, and creative problem solving. The paper suggests that structured reflection, reciprocal feedback, and facilitated dialogue can improve collaboration across age groups. The study contributes practical implications for the design and management of collaborative digital projects that rely on mixed-age teams.

Keywords: Intergenerational collaboration; systems thinking; collaborative digital development; qualitative thematic analysis; reflective group discussion;

1 Introduction

The development of a digital platform for the Slovenian Society for Systems Research can be understood as both a technical task and a collaborative social process. The platform is intended to support collaboration, dissemination, knowledge exchange, and the visibility of systems thinking initiatives, good practices, and research activities in Slovenia and beyond. In this context, the development process itself becomes relevant: the team functions as a small social system composed of distinct roles, expectations, competencies, communication patterns, and feedback processes. This framing carries a methodological consequence that should be stated explicitly at the outset. If the team is treated as a system rather than as a collection of individuals, then its behaviour cannot be read off from the attributes of its members; it emerges from the relations between them. The unit of analysis is therefore not the senior or the student, but the coupling between them: the loops of request, response, correction, and re-interpretation through which the platform gradually takes form. Consistent with the Object–Subject–Model perspective, what the team is able to perceive, decide, and build also depends on the position from which it observes itself: the same project looks different to a coordinator concerned with continuity and to a developer concerned with the next prototype, and both readings are part of the system, not noise to be removed from it. Accordingly, this study addresses the following research questions:

RQ1: How do senior and student participants perceive and experience intergenerational collaboration during the development of a systems-thinking digital platform?

RQ2: What tensions, synergies, and opportunities for mutual learning emerge from this intergenerational collaboration, and how can they inform the organisation of similar collaborative digital projects?

2 Backgrounds

From a systems-thinking perspective, the project team can be understood as a social system in which outcomes depend on interactions, communication, coordination, feedback, and learning (Beer, 1985; Von Bertalanffy, 1968). Cybernetic concepts provide a language for analysing how roles, control, autonomy, and feedback operate in collaborative form, requisite variety (Ashby, 1956; Forrester, 1971). Read through the law of requisite variety, the intergenerational team is itself a variety regulator: the disturbances it must absorb, shifting stakeholder needs, evolving technology, ambiguous content, and its own internal misunderstandings can only be matched by an equivalent variety of responses. Neither generation alone commands sufficient variety. The senior members supply conceptual and contextual variety, the students supply technical and creative variety, and the regulatory capacity of the team is a function of how effectively these two repertoires are coupled rather than of either one in isolation. From this standpoint, the practical question of the project is not which generation is “right”, but whether the team has organised enough requisite variety, and enough feedback to deploy it, to keep the developing platform under control.

Research on generational differences cautions against treating age groups as fixed categories with predictable characteristics. Reviews and meta-analyses show that empirical evidence for broad generational differences in work values and attitudes is limited, mixed, or strongly dependent on context (Costanza et al., 2012; Parry & Urwin, 2011; Ravid et al., 2025). They argue that the differences between senior and student participants should be examined in

relation to role, responsibility, experience, digital competence, communication, and project context. Nevertheless, the authors are more interested in elaborating the particular traits and not the effects of collaboration,

Intergenerational learning, knowledge transfer, and age-diverse collaboration is examined by Ropes (2013), who conceptualises intergenerational learning as a process through which different age groups learn from one another in organisational settings. Fasbender and Gerpott (2022) argue that knowledge transfer between younger and older employees can support organisational continuity and performance, but also note that such transfer depends on relational and motivational conditions. Knowledge sharing may be hindered by status concerns, identity concerns, fear of losing face, or age-based social categorisation.

Intergenerational collaboration is therefore not only a question of task division, but also of reciprocal recognition. Burmeister et al. (2020)show that knowledge transfer may provide different motivational benefits for older and younger workers: receiving knowledge may support younger workers' development goals, while having one's knowledge received may support older workers' generativity-related goals.

Reverse mentoring literature further supports this reciprocal perspective. Chaudhuri and Ghosh (2012) describe reverse mentoring as a social exchange process in which younger employees share knowledge and perspectives with senior colleagues. (Marcinkus Murphy, 2012) similarly presents reverse mentoring as a mechanism for cross-generational learning and leadership development. In the observed collaboration, this may elaborate the exchange of digital, design, and development-related knowledge and strategic orientation, contextual understanding, and project coordination on the other side.

On the professional side, OECD (2024) identifies mentoring, reverse mentoring, intergenerational team pairing, digital documentation, communities of practice, and structured knowledge-transfer plans as mechanisms that can support collaboration across age groups. Such mechanisms may strengthen continuity, learning, innovation, and stereotype reduction.

The literature also identifies risks. Age diversity can support collaboration, but it can also produce subgrouping, conflict, and stereotyping when age becomes a salient boundary. Valls et al. (2021) show that age-based faultlines may negatively affect team performance through task conflict, reduced reflexivity, and negative team mood. This is important for the present study because the empirical design compares two age-defined discussion groups. The comparison should therefore identify differences in perception without reinforcing age-based stereotypes.

To assess the intergenerational collaboration, the literature derived questions, proposed for a discussions are:

1. How do you perceive cooperation between the senior and student participants during the development of the digital platform?
2. Which communication practices supported collaboration, and which created misunderstandings or tensions?
3. How were tasks, responsibilities, decisions, and the pace of work coordinated between the two groups?

4. What knowledge, experience, or competencies did your group contribute, and what did you learn from the other group?
5. Where did intergenerational work create synergies, meaning benefits that emerged from working together across age groups?
6. What risks, tensions, or missed opportunities appeared in the collaboration, and how could they be reduced in similar projects?

3 Methodology

This study applies a qualitative exploratory research design to examine intergenerational collaboration in the development of a digital platform for the Slovenian society for Systems thinking. The platform is intended to support collaboration, dissemination, knowledge exchange, and the visibility of systems thinking initiatives, good practices, and research activities in Slovenia and beyond. The study focuses on how different generations perceive cooperation, communication, task coordination, knowledge exchange, and joint work in the context of developing such a platform.

The research was organised in two main phases. The first phase consisted of a literature analysis on intergenerational collaboration. The purpose of this phase was to identify the most commonly reported issues, tensions, synergies, opportunities, and risks associated with cooperation between different age groups. In this context, synergies refer to reported or observed benefits of working together in intergenerational teams, especially those arising from the combination of different experiences, perspectives, competencies, knowledge bases, and working styles.

The literature analysis provided the conceptual basis for the empirical part of the study. Its outcomes were used to structure the discussion topics for the participating groups. This allowed the study to compare literature-based expectations with the perceptions and experiences of case study participants involved in developing the digital platform.

The second phase consisted of semi-structured group online discussions with two generational groups. The first group included two representatives aged 50-60, who represented the senior perspective. The second group included six students aged between 20 and 25 and represented the younger perspective. Both groups worked on the same project, but in different roles. In the initial project arrangement, the senior group handled coordination and project management, while the younger participants handled research, design, and development. By working together, participants were expected to learn from one another.

Both groups discussed a similar set of topics derived from the literature analysis. The discussions focused on reported issues, tensions, synergies, opportunities, and risks of intergenerational collaboration. Particular attention was given to communication patterns, expectations regarding responsibility and the pace of work, role distribution, decision-making, feedback practices, the use of digital tools, knowledge transfer, mutual learning, and potential sources of misunderstanding. Using a similar discussion framework for both groups enabled comparison between the senior and student perspectives.

The group discussions were recorded, transcribed, and prepared for qualitative thematic analysis. The analysis was conducted in several stages with the support of a large language model tool (ChatGPT). First, the two transcripts were examined separately to identify

recurring statements, patterns, and preliminary thematic categories related to intergenerational issues, tensions, synergies, opportunities, and risks. Second, the preliminary themes identified in the two groups were compared in order to determine areas of convergence and divergence between the senior and student perspectives. Third, these themes were compared with the issues identified in the preceding literature analysis.

ChatGPT was used as an analytical support tool for organising textual material, identifying recurring patterns, grouping related statements, and assisting in the comparison of themes across the two transcripts. The purpose of using the tool was to support systematic examination of the qualitative material rather than to replace researcher interpretation. The resulting thematic structures were subsequently used as the basis for interpreting similarities and differences between the two generational groups and for developing the proposed structures for strengthening intergenerational collaboration.

In the discussion we used the analysis results to propose forming structures and proposing a development path in order to augment synergies between the groups, focusing on the learning path of both groups, not only the direct project results.

Ethical considerations were addressed by informing participants about the study's purpose and the use of discussion data for research. Since the study involved a small number of participants, findings are presented at the group level rather than as individual assessments. The original data of the study is considered personal and will therefore not be published.

4 Results

The results are presented according to the six questions used in the semi-structured group discussions. The senior-side findings are based on the transcript of the discussion between the two senior participants. The student-side findings are based on the thematic analysis of the discussion among the six younger project members. For each question, the findings identify the main overlaps and distinctions between the two perspectives.

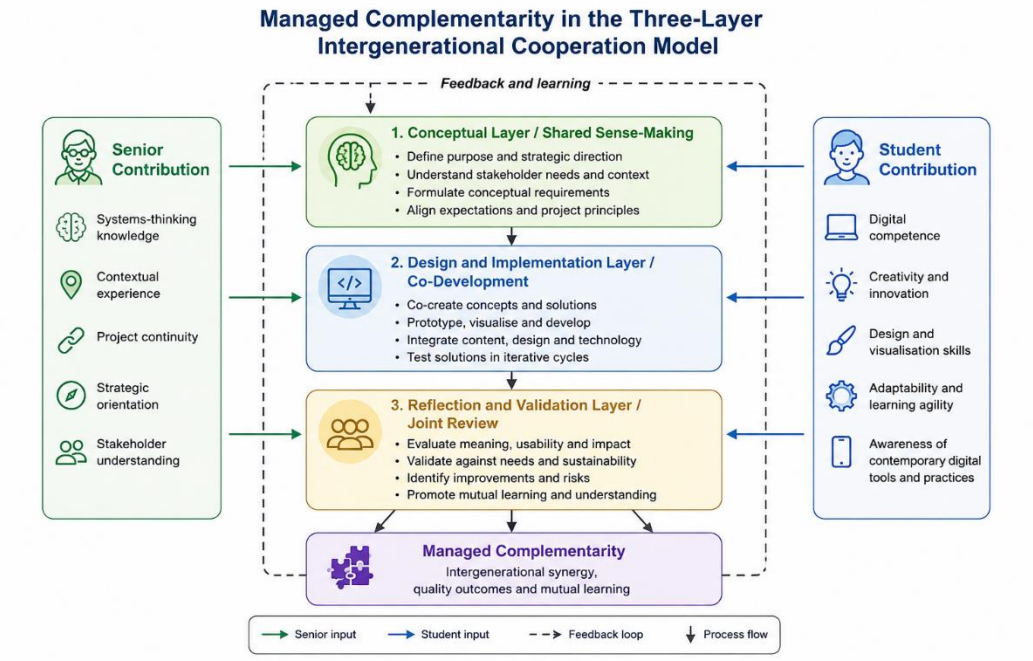

Figure 1. *Managed Complementarity in the Three-Layer Intergenerational Cooperation Model*

4.1 Perception of cooperation between senior and student participants

Both groups perceived intergenerational cooperation as useful and productive, although they described it from different positions. The senior participants understood cooperation as a gradual process of mutual discovery. At the beginning of the project, expectations were not fully clear. From the senior perspective, students entered the project with different strengths: some were more technically oriented, while others were stronger in design and visualisation. However, systems thinking as the core content of the platform was new to most students. This created an initial gap between technical ability and conceptual understanding.

The young-members analysis also presents cooperation positively. Students associated senior participants with experience, reliability, responsibility, patience, mentorship, professional habits, and practical problem-solving. Senior participants were seen as people who had already encountered similar project situations and could therefore help younger members find direction more quickly.

The main overlap is that both perspectives describe cooperation as complementary: senior participants framed cooperation as co-development of a platform requiring both conceptual and technical contributions, while students framed it more through the value of senior guidance, experience, and mentoring.

4.2 Communication practices that supported collaboration or created tensions

Communication was identified by both groups as a central condition of cooperation. From the senior perspective, collaboration was supported by face-to-face meetings, plain-language explanations, low-fidelity visual prototypes, repeated clarification of decisions, and real-time discussion. Communication became more difficult when technical jargon was used, when hybrid meeting conditions reduced the quality of interaction, or when feedback was given too late in the design cycle. The senior discussion also noted that overly directive feedback could lead students to comply without further discussion, which reduced visible conflict but could also reduce initiative.

The student-side analysis placed stronger emphasis on clarity, speed, and predictability. Younger participants identified unclear communication, frequent changes of plans, inconsistent instructions, late rescheduling of meetings, and indirect answers as sources of frustration. They valued direct communication, fast responses, clear instructions, and predictable organisation.

The overlap is that both groups saw communication as decisive for collaboration. The distinction lies in the type of communication problem emphasised. Senior participants focused more on inclusion, accessibility, jargon, facilitation, and the risk of passive compliance, while students focused more on unclear instructions, shifting expectations, and lack of directness.

4.3 Coordination of tasks, responsibilities, decisions, and pace of work

Senior participants contributed systems-thinking content, contextual judgement, project coordination, validation, and assessment of long-term usability. Decisions were perceived as most effective when they were coordinated: this goes for general technical decisions, content and usability, while strategic decisions were taken by seniors.

The student-side analysis reflected a similar complementarity more indirectly. It presented older participants as providers of experience, coaching, and systems thinking, while younger participants contributed creativity, innovation, digital competence, some adaptability, and knowledge of current trends. Students valued senior guidance, but they also stressed the need for enough freedom to develop and contribute their own ideas.

Pace of work appeared as an important difference. Senior participants valued the students' speed and ability to produce visual and technical outputs quickly, but they also saw a risk that fast production could remain insufficiently connected to the analytical and conceptual phases of the project. They noted that some early analysis appeared superficial and that students did not always understand why stakeholder and content analysis were needed before platform development. A related coordination issue concerned the use of AI. Senior participants noted that AI accelerated some tasks, but they also questioned whether this supported students' deeper understanding of the content.

Students described coordination problems more through the experience of changed plans, unclear instructions, and unpredictable organisation. The overlap is that both groups recognised the need to coordinate different contributions. The distinction is that seniors focused on the relation between speed of research and depth, of understanding, while students focused on the relation between guidance, autonomy, and predictability.

4.4 Knowledge, experience, and competencies contributed by each group

Both groups described the collaboration as an exchange of different forms of knowledge. Senior participants identified their contribution as systems-thinking knowledge, awareness of intended outcomes, contextual experience, and judgement about which project decisions required strictness and which allowed flexibility. They also emphasised long-term usability, especially the need for the platform to remain manageable after the student development team leaves the project.

The student-side analysis described senior contributions in terms of rich knowledge, practical problem-solving experience, professional habits, and coaching. Senior participants were therefore valued not only for content knowledge, but also for aligning students when following improper research patterns.

Both perspectives also recognised the contribution of younger participants. Senior participants described students as technically skilled, design-oriented, fast in producing ideas, and capable of visualising solutions quickly.

The overlap is strong: both perspectives saw senior experience and student digital competence as complementary. The distinction is that seniors emphasised conceptual depth, systems-thinking content, project continuity, and long-term usability, while students emphasised innovation, technology, current trends, creativity, and multitasking.

4.5 Synergies created by intergenerational work

Both perspectives identified benefits that emerged from combining different generational contributions. Senior participants described synergy as the connection between conceptual knowledge and practical implementation. They noted that discussions among systems thinkers often remain conceptual, while this project required a practical digital outcome.

Cooperation with students therefore helped connect systems-thinking content with concrete design and platform development.

Although the student-side analysis did not use the same systems-oriented language of synergy, it described successful cooperation as the combination of senior experience and youth innovation. Students saw the best results as emerging when senior participants contributed knowledge, structure, guidance, and experience, while younger participants contributed digital skills, new ideas, creativity, and awareness of contemporary trends.

4.6 Risks, tensions, missed opportunities, and possible reduction measures

Both groups identified risks and tensions, but they emphasised different types of risk. Senior participants identified the risk of digital exclusion if communication tools were not accessible to all participants. Another risk was that students might comply with senior feedback without real engagement, especially if feedback became too directive. A further risk concerned AI-supported task completion without equivalent conceptual learning.

The student-side analysis identified risks more directly connected to everyday project organisation. Younger participants mentioned unclear communication, inconsistent instructions, changing expectations, late changes to meetings, indirect communication, and the possibility of excessive control by mentors. They did not reject guidance, but they wanted mentoring to be balanced with autonomy and space for their own contribution.

Both groups proposed similar general improvements: clearer communication, more explicit expectations, mutual respect, openness to feedback, and better coordination. Senior participants additionally emphasised accessible and redundant communication channels, structured reflection, facilitation, and attention to post-project continuity. Students emphasised direct communication, faster feedback, clearer instructions, more stable planning, and a better balance between mentoring and freedom.

The overlap is that both groups saw collaboration risks as manageable rather than unavoidable.

5 Discussion

The findings show that intergenerational cooperation in the development of the digital platform should not be understood as a simple contrast between older and younger participants. The more relevant distinction concerns the different roles, responsibilities, knowledge bases, communication expectations, and time horizons that participants brought into the project. Senior participants contributed systems-thinking knowledge, project-level orientation, contextual judgement, and concern for long-term usability. Student participants contributed technical fluency, design capacity, creativity, adaptability, and familiarity with contemporary digital tools and trends. The main challenge was therefore not the existence of generational difference itself, but the need to coordinate these differences so that they produced synergies rather than misunderstandings.

The results support the argument that intergenerational collaboration becomes productive when complementarity is actively designed into the work process. In the observed project, synergies appeared where conceptual knowledge was connected with practical implementation, where senior experience supported student experimentation, and where

student technical competence made abstract systems-thinking ideas more visible and usable. At the same time, the same differences also created risks. Senior participants were concerned with superficial analysis, passive compliance, digital exclusion, and long-term sustainability. Students were more concerned with unclear communication, changing instructions, delayed responses, indirectness, and insufficient autonomy. These risks are not contradictory. They reveal two sides of the same coordination problem: the project needs enough structure to ensure conceptual depth and continuity, but enough autonomy to preserve student initiative and creativity.

5.1 From complementarity to managed synergy

We assess that intergenerational synergy does not arise automatically from placing senior and student participants in the same project. It requires a managed process in which each group knows where its contribution is expected, how decisions are made, and how disagreements are handled. The project therefore needs a shift from informal complementarity to managed complementarity.

Managed complementarity means that senior expertise and student expertise are not only acknowledged, but operationalised through concrete project routines. Senior participants should not only be consulted after technical work has already been done, because this places them in the role of evaluators rather than co-creators. Student participants should not only receive instructions from seniors, because this risks turning them into executors rather than contributors. Instead, the work process should create repeated moments where both groups jointly define the problem, test possible solutions, clarify assumptions, and decide what should be changed.

The three layers in Table 1 can be read as a triad of object, subject, and model rather than as a simple sequence of project phases. In the conceptual layer the team negotiates the object: what the platform is for and whose needs it serves; in the design and implementation layer it acts as subject, intervening on that object through prototypes and code; and in the reflection and validation layer it builds and revises a shared model of whether the intervention still matches the intended purpose. What converts this triad from a static description into managed synergy is the feedback that runs between the layers: each review cycle returns information to the conceptual layer, so that the model the team holds of its own work is corrected before deviations accumulate. The senior concern with depth and the student concern with pace are then no longer opposed; they become the slow and fast loops of a single regulated process, in which reflection does not interrupt production but keeps it pointed at a purpose the whole team can still recognise.

Table 1 a three-layer cooperation model:

Cooperation layer	Main purpose	Practical mechanism
Conceptual layer	To ensure that the platform reflects systems-thinking content and stakeholder needs.	Short sense-making sessions before each development cycle.
Design and implementation layer	To transform concepts into usable digital artefacts.	Co-designed prototyping, visualisation, and technical development.
Reflection and validation layer	To test whether the output remains meaningful, usable, and sustainable.	Joint review meetings with explicit decisions and next steps.

5.2 Upgrading synergies

The findings suggest four main synergies that should be strengthened in future work.

First, the project should strengthen the synergy between systems-thinking knowledge and digital implementation. Senior participants observed that systems-thinking discussions often remain conceptual, while the platform requires a practical and usable form. Students helped translate abstract ideas into visual and technical outputs. This synergy can be upgraded by using low-fidelity prototypes earlier and more systematically. Each important systems-thinking concept should be translated into a simple sketch, wireframe, user journey, or content block before technical development begins. This would allow seniors to test conceptual accuracy while students retain responsibility for design and implementation.

Second, the project should strengthen the synergy between experience and innovation. Students valued the experience, reliability, and mentoring capacity of senior participants, while seniors recognised the creativity and speed of students. This synergy can be upgraded through reciprocal mentoring. Senior participants can mentor students in systems thinking, stakeholder interpretation, professional judgement, and long-term responsibility. Students can reverse-mentor seniors in digital tools, interface conventions, AI-supported workflows, and contemporary communication practices. This would make learning explicitly mutual rather than one-directional.

Third, the project should strengthen the synergy between reflection and production. The senior perspective showed concern that students may move quickly into production without sufficiently understanding the analysis phase. The student perspective showed frustration when the process became unclear, indirect, or unstable. This tension can be reduced by separating the work rhythm into short cycles: sense-making, prototyping, review, and revision. Reflection should not be treated as a delay before development, but as a necessary part of each development cycle.

Fourth, the project should strengthen the synergy between autonomy and guidance. Students wanted mentoring, but not excessive control. Seniors wanted conceptual quality, but also feared that directive feedback could close students down. The solution is not less guidance, but clearer guidance. Senior feedback should specify what is non-negotiable, what is open for experimentation, and what requires further discussion. This helps students understand where they can innovate freely and where they must respect conceptual or usability constraints.

5.3 Reducing and mitigating risks

The comparison between senior and student perspectives points to several risks that should be addressed through explicit mitigation mechanisms.

Risk 1: Symbolic participation: Senior participants identified the risk that older members could become symbolic consultees rather than genuine decision-makers. This can be mitigated by defining decision rights at the start of the project. For example, seniors should have clear authority over conceptual accuracy, systems-thinking content, stakeholder relevance, and long-term usability, while students should have clear authority over technical feasibility, interface design, prototyping, and digital implementation. Strategic decisions should be explicitly joint.

Risk 2: Passive compliance by students: The senior discussion showed that students sometimes accepted feedback without further debate. This reduced conflict, but also risked reducing engagement. To mitigate this, feedback meetings should include a required student response phase. After senior feedback, students should be asked to identify which points they accept, which they question, and which they would solve differently. This would make disagreement legitimate and prevent compliance from being mistaken for understanding.

Risk 3: Operational uncertainty: The student analysis highlighted unclear instructions, changing plans, inconsistent expectations, and late rescheduling as sources of frustration. This can be mitigated through a simple project operating agreement. The agreement should define how tasks are assigned, where decisions are recorded, how quickly participants are expected to respond, how meetings are scheduled or changed, and which communication channel is authoritative. A shared decision log would be especially useful.

Risk 4: Digital exclusion: Senior participants noted that digital-only communication can exclude participants with lower digital fluency or different communication habits. Students, on the other hand, preferred faster and more digital communication. The solution is not to choose one mode, but to use redundant communication. Important decisions should be communicated through at least two channels: for example, orally in meetings and in a written decision log. Digital tools should support collaboration, but not become the only place where meaning is negotiated.

Risk 5: Superficial AI-supported work: The senior transcript raised a specific concern that AI can accelerate task completion without ensuring deeper learning. This is especially relevant in analysis tasks, where the goal is not only to produce text, but to understand stakeholders, concepts, and project purpose. The mitigation is to introduce an AI-use protocol. Students may use AI to support analysis, summarisation, ideation, and drafting, but they should also explain what they accepted, what they rejected, what they verified, and what they learned. AI should therefore be positioned as a learning scaffold rather than as a substitute for engagement.

Risk 6: Loss of sustainability after the project: Senior participants were concerned that the platform must remain manageable after the student development team leaves. This risk can be reduced by planning handover from the beginning rather than at the end. Each technical decision should be assessed against future maintainability, user skill level, documentation needs, and the availability of support. The final deliverable should include not only the platform, but also user documentation, maintenance instructions, access management, and a simple procedure for updating content.

5.4 Proposed development path

Based on the findings of this exploratory case, the proposed staged development path may provide a useful framework for organising intergenerational digital development projects and for strengthening potential synergies while reducing identified coordination risks. The framework should be understood as a context-derived practical proposition rather than as a universally applicable model and should therefore be adapted to the characteristics, size, roles, and organisational setting of each project.

Table 2 Proposed development path

Stage	Purpose	Key actions
1. Orientation	Build shared understanding before technical work starts.	Clarify project purpose, users, stakeholder needs, platform logic, and expected outcomes.
2. Role negotiation	Prevent ambiguity and symbolic participation.	Define decision rights, responsibilities, communication channels, and escalation rules.
3. Shared sense-making	Connect student work with conceptual depth.	Use short workshops to translate systems-thinking content into user needs and design requirements.
4. Co-design cycles	Combine reflection with production.	Use repeated cycles of prototype, review, revise, and document decisions.
5. Co-learning	Learning as a part of project outcomes	Reflection sessions on what participants have and should learn about the project and systems thinking.
6. AI-supported learning	Avoid superficial task completion.	Critically examining the AI supported result and augment them.
7. Sustainability planning	Ensure continuity after student involvement ends.	Prepare project documentation and places for discussion on the learning outcomes.
8. Reflection and evaluation	Improve collaboration during the project, not only after it.	Hold reflection sessions on communication, pace, autonomy, and unresolved tensions.

The development path in table 2 translates the empirical findings into project management practice. It does not aim to remove differences between generations. Rather, it aims to make these differences visible, negotiable, and productive.

6 Summary

The findings suggest that intergenerational cooperation in digital platform development can generate important synergies when different forms of knowledge and competence are intentionally connected. In the observed project, senior participants contributed conceptual depth, contextual judgement, project continuity, and concern for long-term sustainability, while student participants contributed technical fluency, creativity, design capacity, adaptability, and awareness of contemporary digital practices. The main benefits emerged when these contributions were treated as complementary rather than as competing forms of expertise.

The findings also have practical implications for the organisation of mixed-age project teams. The observed collaboration suggests that intergenerational diversity alone does not automatically create synergy. Its potential benefits depend on how responsibilities, decision rights, communication routines, feedback processes, autonomy, and opportunities for reciprocal learning are organised. The proposed managed-complementarity approach, three-layer cooperation model, and staged development path should therefore be understood as practical propositions derived from this case that may be adapted and examined in other collaborative digital-project settings.

The exploratory character and small scale of the study should be considered when interpreting the findings. The empirical material is based on eight participants from a single digital-platform development project, comprising two senior participants and six students. The two groups therefore differ not only in age but also in size and project role: the senior participants were primarily responsible for coordination and project management, whereas the students were primarily involved in research, design, and development. Consequently, observed differences between the groups cannot be attributed to age or generation alone, as they may

also reflect differences in responsibility, professional experience, project position, and group composition. The findings should therefore be understood as context-specific qualitative insights rather than as generalisable characteristics of older and younger participants.

Future research should examine the transferability of these patterns in larger and more balanced intergenerational teams and across different organisational, sectoral, and digital-project contexts. Longitudinal studies could investigate whether intergenerational cooperation produces lasting effects on organisational learning, knowledge retention, project continuity, and professional competencies. Further research could also examine structured mentoring and reverse-mentoring arrangements and identify the conditions under which reciprocal knowledge transfer is most effective. Another relevant direction is the role of systems thinking in collaborative digital governance, particularly whether structured feedback loops, shared sense-making, reflective work cycles, and explicit decision rights improve coordination and learning in mixed-age teams. The role of AI-supported work in intergenerational learning also deserves further examination, especially the balance between increased task efficiency and deeper conceptual understanding.

In systems-thinking terms, the value of an intergenerational team lies in the variety of knowledge, experience, competencies, and perspectives available within it, but this variety becomes productive only when it is coordinated through communication, feedback, reflection, and shared decision-making. The project therefore provides a context-specific example of how a team can itself operate as a social system while developing a digital platform intended to support and disseminate systems thinking.

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