



inclusion

Synthesis Report



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ACRONYMS

AI	Artificial Intelligence
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API	Application Programming Interface
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AR	Augmented Reality
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EACEA	European Education and Culture Executive Agency
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EU	European Union
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ESN	Erasmus Student Network
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GDPR	General Data Protection Regulation
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HEI	Higher Education Institution
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MVP	Minimum Viable Product
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NGO	Non-Governmental Organisation
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OCR	Optical Character Recognition
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SOS	Emergency distress signal
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UCD	User-Centered Design
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UX	User Experience
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Part A.

Master Collaborative Laboratory Synthesis Report

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INTRODUCTION

The **Master Collaborative Laboratory** (hereinafter referred to as Master Collab) was held in **Vilnius, Lithuania, on October 21, 2025**, bringing together 40 participants representing diverse stakeholder groups from Finland, Lithuania, Portugal, and Turkey. Participants included students, university representatives, NGOs, and policy-makers, reflecting a broad cross-section of expertise and lived experience related to higher education mobility.

The Master Collab served as a transnational follow-up to a series of National Collaborative Laboratories (hereinafter referred to as National Collab) organized earlier in each partner country. Its aim was to build on the findings of the national-level discussions and jointly develop solutions to improve the inclusiveness of students' international mobility, particularly for students with caring responsibilities and/or disabilities within the Erasmus+ program.

During the Master Collab, participants were invited to brainstorm and co-create solutions to key challenges identified in the National Collabs across eight thematic areas related to the participation of students with disabilities and caring responsibilities in international mobility. They were encouraged to think innovatively and propose solutions they deemed necessary and impactful, even if these ideas might pose implementation challenges. The objective was to surface a wide range of concepts that policymakers and practitioners could further interrogate, contextualise, and potentially transform into viable policy directions.

This approach is valuable because it captures perspectives and needs that may not emerge in more structured discussions. Even when suggestions are not immediately feasible, they often reveal underlying concerns or gaps in existing systems. By inviting creativity, the exercise generates raw insights that can be analysed, refined, and translated into realistic, actionable strategies, thereby supporting both innovation and a deeper understanding of participants' experiences.

The eight areas are:

- 1. Policies and Strategies:** The extent to which formal documents, policies, and institutional strategies on inclusion exist and are developed with the participation of students with diverse needs, and are effectively communicated to the community.
- 2. Attitudes:** The level of awareness, openness, and positive mindset toward inclusion across the institution, reflected through awareness-raising activities and commitment at all levels.
- 3. Informing and Guiding:** The availability, clarity, accessibility, and usefulness of information on international mobility provided to students with disabilities or caring responsibilities.
- 4. Tailored Study Process:** The degree to which curricula, teaching methods, assessment, and study arrangements are flexible and adapted to the individual needs of international students with disabilities and caring responsibilities.
- 5. Finances:** The adequacy and fairness of financial support offered to students with disabilities and students with personal or family financial circumstances that may affect their international mobility.
- 6. Infrastructure:** The accessibility and inclusiveness of physical and digital environments, including study facilities and accommodations.
- 7. Medical, Social, and Psychological Services:** The availability, accessibility, and coordination of medical, social care, and psychological support services for internationally mobile students with disabilities or caring responsibilities, including links to external services.
- 8. Extracurricular Activities:** The extent to which international students with disabilities or caring responsibilities can participate in sports, cultural activities, arts, religious life, volunteering, and other non-academic opportunities.

This report provides a **summary of the ideas discussed and solutions recommended by the participants** during the Master Collab for each of the thematic areas. It also briefly presents the **findings from the National Collabs**, which served as the foundation for the Master Collab discussions in Vilnius and helped shape the shared understanding of current barriers and potential solutions across participating countries.

Before delving into the challenges and solutions recommended by the Master Collab participants within each of the thematic areas, Figure 1 shows how participants defined their experiences and their main takeaway in one word or

phrase. These words highlight the collective message of the Master Collab: change begins with awareness, communication, and collaboration; and together, institutions and individuals can make international mobility truly inclusive.



Figure 1. The reflections of Master Collab participants in one word or phrase

1. POLICIES AND STRATEGIES

Key challenges in policies and strategies presented for discussion during the Master Collab were the following:

1.1. Inconsistent adaptation of international standards (e.g., European level recommendations or strategies) and limited monitoring in national contexts:

- International standards are not fully adapted into national frameworks – European higher education institutions (HEIs) tend to have varying practices regarding the inclusion of students with disabilities and students with caring responsibilities, for example, professionalized support for students with disabilities – such as additional exam time, alternative exam formats, or separate rooms based on medical reports, paid note-takers – does not exist in every country or is very limited.
- Implementation of international standards is limited and varies across countries. The transfer of international standards to national contexts often lacks a human rights-based approach and adequate communication among different stakeholders. A general standardization of international standards is usually limited due to country-level differences, such as the variety of local definitions.
- The implementation of national legislation is unclear and often remains “on paper” due to a lack of mandatory staff training and insufficient communication between students and HEI staff. Policies are fragmented, often relying on individual initiative rather than comprehensive institutional practices and collective responsibility.

1.2. Lack of students’ involvement in policy-making processes and limited opportunities for self-advocacy:

- There is a lack of involvement of students in the preparation of strategic or policy documents that are directly related to them, due to language barriers faced by incoming students, cultural differences, and challenges in reaching students effectively.
- Feedback mechanisms on existing policies, when they exist, are weak and often symbolic, which undermines the credibility and effectiveness of those mechanisms.

The solutions recommended by the Master Collab participants were the following:

- **Actively include international students in policy-making.** Ensuring international students are actively engaged in student organizations and that communication processes are inclusive and accessible. Review and adapt communication channels to ensure that all important information reaches international students in accessible formats and languages. Limit information overload by curating and prioritizing essential updates, using clear and concise messaging. Recognize diversity among international students by avoiding treating international students as a single, uniform group. Instead, acknowledge and address the diverse backgrounds, needs, and experiences within the international student community.
- “It is not only the officers’ task, but it is everyone’s task to implement existing policies. I mean it not only that it should be one person in their institution, but it cannot be on one person’s shoulders; it is our collective task. Everyone is kind of responsible”.*
– HEI representative
- **Increase the accessibility and transparency of information and documentation.** Translate all national and university policy documents into the native languages of incoming students (for example, by using AI tools and adapting website design). Institutions should provide clear and honest information about available infrastructure and services, rather than attempting to make a good impression by providing misleading or inaccurate information. This can be done by using external reviewers and various online tools. Student feedback and reporting mechanisms should be developed to facilitate reporting deficiencies or limitations in infrastructure and services. This feedback loop would help institutions address issues promptly and maintain transparency.
 - **Foster bottom-up policy-making and increase collaboration among stakeholders.** Shift from a top-down to a bottom-up approach in policy making, prioritizing the needs and feedback of students and HEIs. Regular meetings with various stakeholders, including students, HEI representatives, and policymakers, should be organized, aiming at fostering open communication, sharing of perspectives, and ensuring that policy decisions are informed by those directly impacted.
 - **Establish recognition and accountability mechanisms for those who make an effort to be more inclusive.** Create awards (e.g., the “Most Accessible Building Award”) to recognize inclusive efforts and consider imposing fines on institutions that fail to guarantee accessibility. This recognition can serve as motivation for others to follow and adopt similar inclusive practices. Accountability may be implemented through penalties. To ensure that accessibility is not left to

goodwill alone, institutions may be subject to fines if they fail to guarantee accessibility. This introduces a level of accountability, making it clear that providing accessible infrastructure and services is a mandatory requirement, not just a voluntary effort.

- **Standardize and share good practices.** Develop a national inclusion strategy with a unified definition of vulnerable groups. Currently, the responsibility for defining vulnerable groups lies with individual HEIs, leading to inconsistencies and confusion for students. A standardized approach would ensure clarity and fairness across all HEIs. The sharing and transfer of good practices from project-based efforts to national or institutional policy should be ensured, as well as collaboration between different HEI units.
- **Optimize feedback and monitoring systems.** Implement a unified survey system for students after their mobility experiences to collect comprehensive feedback efficiently, while the experience is still fresh and the mobility period has ended. Make the evaluation of HEI infrastructure mandatory. Awareness-raising efforts should be conducted more intensively to ensure that students are informed about their rights, available services, and the importance of providing feedback.

2. ATTITUDES

Key challenges in attitudes presented for discussion during the Master Collab were the following:

2.1. Limited awareness and knowledge among teachers, peers, and staff can turn positive intentions into overprotective or disempowering actions. Examples:

- Support depends on individual goodwill rather than consistent institutional responsibility.
- “Awareness weeks” remain superficial, and training is not of sufficient quality, failing to create lasting inclusion.
- Limited awareness and lack of training lead to paternalistic or disempowering behaviour among teachers, peers, and staff.

2.2. Past experiences lead students with diverse needs to distrust institutions and doubt the effectiveness of the available support. Examples:

- Weak institutional responsiveness fuels a cycle of mistrust and low participation (e.g., weak engagement in mobility and late information-seeking in the case of planning to go abroad).
- They often turn to personal networks instead of institutional channels when in need of assistance and support, which creates unequal access to information and fails to break the cycle of distrust.

The solutions recommended by the Master Collab participants were the following:

- **Strengthen awareness and competence among the HEIs community.** HEIs should implement regular, practical training sessions for academic, administrative, and support staff on inclusion, respectful communication, and the lived realities of students with disabilities and/or caring responsibilities. Short, accessible formats (e.g., 10-minute pop-up Q&A stands, faculty-level workshops, or “ask us anything” drop-ins) can help reach staff who rarely attend longer sessions. Training should include real-life examples of adjustments, demonstrations of assistive technologies, and collaboration with experts and NGOs to ensure the development of high-quality content.
- **Integrate disability and diversity topics into study programs.** HEIs are encouraged to introduce courses or modules on inclusive and multicultural education, or to embed these themes systematically across curricula. This helps normalize conversations about diversity, challenge stereotypes, and build long-term awareness among both students and staff. Such content can also be incorporated into orientation programs, mandatory teacher training, or accreditation processes for study programs. See also *Informing and Guiding and Tailored Study Process*.

It would be a good idea to organise workshops for lecturers, students, and staff together. To use a metaphor, to put everyone in one boat – and then rock the boat together”.
– National Agency representative
- **Promote experiential learning to reduce stigma and build empathy.** City-level or campus-based experiential activities can help staff and students understand the everyday barriers faced by people with disabilities (e.g., navigating buildings while blindfolded, learning basic sign language in cafés, or visiting interactive museums that simulate sensory impairments). These activities make abstract challenges visible, fostering empathy and reducing paternalistic or overprotective attitudes.
- **Ensure that HEIs provide realistic and transparent information about accessibility.** Institutions should openly communicate the actual accessibility of facilities, services, and academic processes – avoiding overly positive or promotional narratives that create false expectations. Clear communication about limitations, available adjustments, and students’ rights can help rebuild trust among students who have experienced institutional failures. Tools such as accessibility ratings or transparent online maps can support this process. For more details, see also the section on *Informing and guiding and Infrastructure*.

- **Increase representation and visibility of students with disabilities and caring responsibilities.** Universities should feature diverse student experiences in communication materials, Erasmus+ promotions, and outreach activities. Sharing authentic mobility stories – including both successes and challenges – can counter invisibility, foster peer recognition, and reduce the perception that mobility is only for a narrow group of “ideal” students. Events such as Erasmus Days can include panels with students, NGOs, municipalities, and advocates to showcase available support and inspire participation.
- **Engage NGOs and experts as partners in awareness-raising and training.** Civil society organisations and disability associations can contribute expertise, co-develop training content, and participate in staff development activities. Their involvement can also help correct misconceptions and strengthen ties between universities and local communities. Student associations can further support this effort by actively promoting positive mobility stories from students with disabilities.
- **Increase employment of staff with disabilities within universities.** Participants emphasised that hiring people with disabilities – including academic and administrative positions – helps normalise inclusion and brings valuable expertise into university structures. Setting institutional targets (e.g., aiming for at least 5% of staff positions) can contribute to a more diverse and informed academic environment.
- **Create HEIs-wide mechanisms that recognize student agency and bottom-up input.** Students should be invited to contribute actively to decisions affecting their learning and mobility experiences – for example, through advisory groups, focus groups, or participatory planning of training events. This helps shift the institutional culture from one based on goodwill or individual initiative toward shared responsibility and a more inclusive, student-centered approach.

3. INFORMING AND GUIDING

Key challenges in informing students about the international mobility opportunities and guiding them through the application process presented for discussion during the Master Collab were the following:

3.1. Information on Erasmus+ mobility for students with diverse needs is fragmented and scattered across multiple channels.

3.1.1. Information is dispersed across multiple channels, services, or departments, making it difficult for students to find clear guidance. Examples:

- Multiple information channels (websites, intranet, apps, social media) overwhelm students, and content may not be updated or translated appropriately.
- Email overload leads to important messages being lost; students may miss opportunities because of scattered information.

3.1.2. Students with disabilities or caring responsibilities often receive generic information, not tailored to their specific needs. Examples:

- Guidance rarely considers accessibility, interpreters, or adapted transport.
- Mobility information is general; caregivers or students with disabilities feel “out of the box”. Institutions rely on self-identification, but no standardized forms or processes exist to capture students’ needs.
- Promotional materials and guidance often omit students with disabilities, reinforcing feelings of exclusion.
- Universities often do not even know how many students with disabilities are enrolled.

3.2. Students lack tailored, step-by-step guidance to navigate complex processes and often rely on staff’s experience and initiative.

3.2.1. Information about accessibility, mobility, and support is often not readily available or transparent, affecting planning and decision-making. Examples:

- Students need to find accessibility information on websites before choosing a university; lack of clear online guidance may discourage applications.
- Bureaucratic, non-transparent communication leaves students uncertain about grants, costs, or feasible mobility options.

- Technical information alone is insufficient; students need step-by-step guidance and personal support to navigate complex procedures.

3.2.2. Students must proactively seek information, and the quality of guidance depends on the knowledge or skills of a single advisor. Examples:

- Students rely on an advisor who knows the process; if that person leaves, the information may be lost.
- Students struggle to find guidance because disability units do not systematically track or communicate with students.
- Students rely on closed social media groups or personal contacts to obtain necessary information.

The solutions recommended by the Master Collab participants were the following:

- **Utilize artificial intelligence (AI) to personalize information about international mobility for students with disabilities and caring responsibilities.**

HEIs and ERASMUS+ programme operators should leverage AI to improve how students with diverse needs are informed and guided throughout the international mobility process. This can be achieved through the integration of AI assistants (chatbots) on university and Erasmus+ websites that provide tailored guidance based on students' individual questions and needs. These AI systems should be trained specifically on mobility-related data, including accessibility resources, procedures, and experiences collected from sending and host institutions – rather than on general datasets. Additionally, a customized student profile system could be developed – for example, through a website or mobile application – allowing students to create personal profiles that include relevant details such as gender, disability status, or caring responsibilities. Based on this information, the AI tool could personalize content and recommendations, offering targeted information about accommodation options, available courses, accessibility arrangements, campus maps, and support services.

For students with caregiving responsibilities (e.g., those with children), support must be provided through a holistic approach that takes into account the needs of the whole family. If your kids are not safe, you are not going”.

– NGO representative

- **Foster cross-sectional cooperation and peer support for inclusive mobility.**

HEIs should promote cooperation with NGOs and associations representing people with disabilities or families, as well as enhance collaboration between different university divisions – including international offices, accessibility units, and student affairs departments. HEIs are also encouraged to establish volunteering or peer-support schemes, where students assist peers with specific needs, and to train student representatives on how to advise and guide students with diverse needs through the mobility application and preparation process.

- **Establish an EU-level disability support network and inclusive communication strategy for ERASMUS+.**

The central ERASMUS+ website should enable students to easily find information on available support services, accessibility measures, and inclusive mobility practices across Europe. The platform could also feature a list of the most inclusive universities, helping students make informed choices based on transparency and good practice. In parallel, the Erasmus+ communication strategy should highlight success stories of students with disabilities and caring responsibilities, feature diverse and inclusive visuals in promotional materials, and launch social media initiatives – for example, a “Thank You, Erasmus” campaign involving well-known figures, student unions, and participants with diverse backgrounds.

The images used in Erasmus brochures and websites should not only depict 'healthy, middle-class white individuals', but instead offer more diverse and inclusive representations”.

– Unidentified participant

4. TAILORED STUDY PROCESS

Key challenges in tailoring the study process presented for discussion during the Master Collab were the following:

4.1. Lack of standard procedures for tailoring the study process (e.g., curriculum adjustment, exam modifications, or flexible deadlines) results in an over-reliance on teachers' personal awareness and goodwill.

4.1.1. Support often depends on the goodwill, sensitivity, or capacity of a single teacher rather than on institutional mechanisms. Examples:

- Extra time in exams is easy to arrange, but other accommodations depend on the teacher's availability.
- A visually impaired student benefited only because a teacher voluntarily described all class content. Without that teacher, support would not be available.
- Some professors refuse to adapt assessment methods. Students are dependent on proactive professors.
- Teachers adapt tasks only when students explicitly express their needs; otherwise, support may not be offered.

4.1.2. Curricula, exams, and deadlines are often rigid, creating barriers for students with disabilities or caring responsibilities. Examples:

- Students reported that schedules and assessment methods rarely allow flexibility, making participation difficult and international mobility almost impossible.
- Students with invisible disabilities can access extra exam time in Europe, but similar cases in Turkey do not receive any accommodations.
- Multiple exam formats or alternative ways of studying are needed, but implementation varies across teachers and courses.

4.1.3. Teachers often lack knowledge and skills in inclusive education; institutional support is fragmented or slow. Examples:

- Teachers are untrained in inclusive pedagogy; coordinators exist, but processes are slow and inconsistent.
- Free training exists but is rarely prioritized by professors; inclusive practices are perceived as exceptions rather than the standard.

- Teachers require additional support to implement accommodations; standardized systems are necessary to alleviate the burden on individuals.

4.2. Students with diverse needs face inconsistent access to a tailored study process (e.g., materials inadequately adapted or requests to tailor them are dismissed), which leads to the mis-assessment of their achievements.

4.2.1. Students may face barriers to accessing specialized materials, practical learning, or internships due to lack of material or human resources and complicated procedures. Rights are sometimes treated as optional favours rather than guaranteed support. Examples:

- High costs of laboratory tools or absence of paid note-takers; requests for accommodations are often dismissed.
- Lack of accessible or adapted study materials; students' achievements may be mis-assessed if materials are not modified.
- Hearing protection or seating arrangements are usually possible, but more complex adjustments depend on teacher coordination.

The solutions recommended by the Master Collab participants were the following:

- **Ensure early and transparent access to study information.** Students should receive comprehensive and accessible information well in advance of their mobility, allowing for effective planning, especially for those with disabilities or caring responsibilities. This includes detailed descriptions of available courses, facilities, accessibility arrangements, housing, and childcare options, as well as early publication of semester timetables to support personal and family scheduling. Higher education institutions are encouraged to develop a common European template for study and course information – clearly outlining accessibility measures, prerequisites, learning formats, and modes of delivery.

Not to leave it to the hands & goodwill of the teachers; you need to have a plan to force the teachers to take adaptations. A HEI-level plan".

– National Agency representative

- **Develop the European Study Card**, similar to a medical card, which could operate within digital and procedural systems of the HEIs, enabling secure, efficient, and timely information sharing between the students, teachers, and university staff. By using their Study Card credentials, students can update information within internal university platforms to reflect their learning needs and requirements, allowing for adjustments throughout the entire study process. At

the same time, **teachers, coordinators, and accessibility officers** would have **permission-based access** to view relevant adaptation details, ensuring that the necessary support is prepared in advance.

- **Introduce standardized pre-mobility surveys and link them to the Study Card.**

Sending universities should implement standardized pre-mobility surveys to systematically collect information about students' individual needs – including accessibility requirements and caring responsibilities. Information collected during these surveys should be digitally linked to the European Study Card, enabling the data to be securely shared with the host university well in advance of the student's arrival. Notably, a similar solution emerged during the discussion of another topic; for more details, see the section on *Medical, Social, and Psychological Services*.

- **Apply universal design principles to learning materials and study processes,**

ensuring that they are accessible by default, minimizing the need for ad hoc adjustments each time a student with specific needs participates in mobility. This includes preparing teaching materials (e.g., PowerPoint presentations, PDFs, lecture recordings) in accessible formats, providing materials in advance so that students can get familiar with them before lectures, and providing flexible options for exams and evaluation methods. To make this approach sustainable, HEIs should employ dedicated staff or establish accessibility support units that assist teachers in applying universal design principles to their courses. These units should also provide consultations and targeted training on inclusive pedagogy and accessible content creation, as well as review and monitor the accessibility of teaching materials to identify areas for improvement.

“Universities have to adapt to the students, not the students adapt to the universities”.

– National Agency representative

5. FINANCES

Key challenges in finances presented for discussion during the Master Collab were the following:

5.1. Limited financial support for internationally mobile students (inadequate public budgets, expensive educational materials, etc.). Examples:

- Lack of comprehensive institutional support is related to the high cost of educational materials: students (especially those with disabilities) face significant financial burdens when purchasing educational materials. In some cases, special assistance is provided (e.g., an interpreter or note taker), but these are exceptional situations.
- Inadequate public budget allocation: concerns were raised regarding the allocation of public budgets for people with disabilities, particularly about ineffective or symbolic infrastructure investments that do not meet actual needs.
- Students with disabilities are encouraged to rely on the social assistance they already get and to stay at home.

5.2. Financial support lacks individualization due to inflexible support systems and country differences.

- Incoming students face limited support – support depends on the country from which a student arrives, but not the country of destination. Support may be inconsistent, for example, incurring extra costs for finding accessible housing, transportation, and care when a child is sick, among others.
- Characteristics of students may affect the scope of the available support – for example, the type, duration, and purpose of a residence permit of the students, specific needs of accessibility, or health status. Students who must care for people with disabilities have no possibility to study abroad, and this highlights the lack of an intersectional approach to inequalities.
- The system is bureaucratic and complicated – students feel confused about the rules of support, and support is based on reimbursement; procedures are slow and unclear.

The solutions recommended by the Master Collab participants were the following:

- **Increase financial support and its flexibility, simplify its provision mechanisms:**

provide additional funding (for example, if multiple assistants are required) and flexible financial mechanisms (such as a so-called “pink”/social card) for students with special needs, and ensure that support is not solely based on reimbursement. Flexible durations in mobility programs should be considered to accommodate changes

in students’ health status during their studies. The financial support system must be simplified by reducing bureaucracy. It can be done by utilizing existing information on students’ needs more effectively, or implementing a more efficient data collection system about students and their needs (for more details, refer to the section on *Tailored Study Process* and the section on *Medical, Social, and Psychological Services*), while also taking into account data protection. Additionally, more services should be made available online.

“Universities should create small, part-time roles or mentorship programs for exchange students, offering a small bonus income in exchange for their active participation and experience, such as contributing tips for creating accessible materials”.

– Student with disability

- **Strengthen collaboration and social responsibility:** foster greater cooperation between HEIs, private companies, and local governments to support vulnerable student groups, including offering incentives like tax discounts to companies that assist students with fewer opportunities.

- **Improve accessibility of information:**

make information about financial support, cost of living, and available services more accessible and targeted. There can be differences in the cost of living between the sending and receiving countries; additional information regarding this may be helpful. Information provision regarding local support may be limited due to language barriers. Inclusion officers and accessibility coordinators should be more proactive, and communication should be ongoing and segmented rather than delivered all at once.

“Access to reliable and honest information regarding the actual cost of living in the host country is key, as many international students rely on false information and arrive unprepared for high expenses”.

– HEI representative

- **Empower students and leverage their experience:** create opportunities for incoming students to work at the hosting HEI (at least for some hours), or make possibilities to participate in mentorship programs for exchange students, offering a small bonus income in exchange for their active participation and experience, such as contributing tips for creating accessible materials.

6. INFRASTRUCTURE

Key challenges in infrastructure presented for discussion during the Master Collab were the following:

6.1. Infrastructure adaptations often remain superficial, lacking meaningful and functional change.

- University infrastructure often meets only minimal accessibility standards – elevators, door systems, and guidance tools are poorly designed and frequently malfunction.
- Many improvements remain symbolic, with limited monitoring or meaningful follow-up.

6.2. Lack of holistic planning connecting academic, residential, and urban environments.

- Accessibility efforts focus mainly on campus buildings, neglecting residential and urban environments.
- Weak coordination between universities and municipalities results in fragmented and often merely decorative solutions.
- Lack of systematic monitoring and student involvement leaves many accessibility initiatives symbolic rather than effective.

The solutions recommended by the Master Collab participants were the following:

- **Ensure transparent and realistic communication about accessibility.** Universities should provide clear, accurate, and detailed information about the accessibility of all premises – not only academic buildings but also libraries, accommodation, cafeterias, sports centres, transportation options, and nearby medical services. Information should cover multiple types of disabilities, not only mobility-related ones. Transparency about limitations is crucial for ensuring safety and effective planning. This may include developing campus accessibility maps, publishing 3D tours with audio descriptions, and providing honest assessments of buildings that are inaccessible or partially accessible. For more details, see also the section on *Informing and Guiding*.
- **Develop comprehensive digital tools and navigation support.** HEIs and municipalities should invest in digital solutions that help students navigate campus and city environments more independently. This may include accessible apps with wayfinding functions, audio guidance for visually impaired users, and integrated maps highlighting accessible entrances, elevators, quiet study spaces, or accessible bathrooms. Students and persons with disabilities should be

directly involved in co-designing these tools to ensure usability and relevance. For more details, see also the section on *Informing and Guiding*.

- **Strengthen universal design in all campus and city infrastructure.**

Participants stressed that infrastructure should be designed to meet a wide range of needs from the outset, reducing the need for retroactive adjustments. This includes accessible entrances, tactile surfaces, functioning visual and audio announcements in public transport, inclusive design of elevators and everyday devices, and architectural plans that consider different mobility, sensory, and cognitive needs. Universal design also improves usability for people with temporary disabilities, parents with strollers, and older adults.

It is important to prioritise. Some barriers are so high that a person cannot access university at all. These should be death with as a first priority. Other things are also important, but they may not make services completely inaccessible. They come as second priority”.

– NGO representative

- **Create rapid-response mechanisms for infrastructure failures.** HEIs should establish clear procedures and allocate dedicated staff to manage accessibility requests, coordinate adjustments, and ensure timely responses. Reasonable adjustments must be made when full accessibility cannot be achieved – for example, arranging temporary ramps, alternative classrooms, or on-demand assistants. A designated accessibility coordinator or team within the HEIs would help streamline communication, troubleshoot urgent issues, and prevent students from waiting months to reach the appropriate municipal or institutional contact.
- **Introduce monitoring, awards, and accountability mechanisms.** Regular audits of campus accessibility should be conducted, involving students, staff, and external reviewers. HEIs could establish awards (e.g., “Most Accessible Campus Building”) to incentivize improvements, as well as internal reporting systems to identify malfunctioning design or broken accessibility features. At the policy level, stricter national or Erasmus+ guidelines could help harmonize accessibility standards across countries, ensuring that minimum criteria are met before hosting international students with diverse needs. For more details, see also the section on *Policies and Strategies*.
- **Expand accessible study environments and quiet spaces.** HEIs should create reservable quiet rooms or low-stimulation study areas for students who experience sensory overload or require a calm environment. These spaces should be easy to book, clearly marked, and incorporated into campus maps.
- **Promote collaboration between HEIs, municipalities, and NGOs.** Improving accessibility requires coordinated efforts across sectors. Municipalities and NGOs should be engaged early in planning and reviewing the hosting HEIs’ infrastructure. NGOs bring crucial expertise on lived experiences, while municipalities can address city-wide barriers, such as public transportation, pedestrian paths, and bureaucratic delays. Joint working groups can also ensure alignment between HEI-level actions and national or city-wide strategies.

7. MEDICAL, SOCIAL, AND PSYCHOLOGICAL SERVICES

Key challenges in medical, social, and psychological services presented for discussion during the Master Collab were the following:

7.1. Insufficient and inaccessible psychological and medical support (both general and specialised).

- Psychological and medical services are described as limited, fragmented, or difficult to access, especially for students with disabilities or chronic illnesses.
- Barriers include long waiting times, insufficient specialisation or disability awareness of specialists, and unclear or overly complex systems. This insufficiency directly affects students' ability to participate in mobility or adapt in the host country.

7.2. Weak continuity and coordination of services across medical and social systems or countries.

- Disruptions in treatment, inconsistencies in available services, and poor coordination between home and host institutions.
- Lack of transferability of support, medication, and insurance.
- International students struggle to access services due to bureaucratic and insurance issues.
- The lack of institutionalised structures and fragmented social support systems creates similar gaps.

The solutions recommended by the Master Collab participants were the following:

- **Create a database to systematically record students' psychological, social, and medical needs in a standardised manner.** Students' needs, determined in advance (even before mobility), would help counsellors from the hosting HEI contact incoming students and inform them about the availability of services. Moreover, standardised data collection would reduce the

Psychological support is indeed crucial because when I go to another country, I feel stressed because I don't know what relationship I will get with lecturers, how they will accept my disability, and how they will adapt materials to my needs".

– Student with disability

feeling among students that they are asking for special treatment, as well as the need for constant explanations to everyone about their limitations.

- **Improving the quality of medical services:**

- **Clearly provide information about the availability of medical services for incoming students.**

A guide on medical service providers (public and private) in different countries, as well as procedures for accessing them, could help international mobility students properly address their health issues in a timely manner, rather than neglecting ongoing symptoms and waiting for a return home.

As an international, it should be easier to register and get a doctor, because when we go to another country, either medical services are not available, or we need to pay for all doctors".

– Student with disability

- **Ensure the accessibility to medical services for international mobility students with disabilities.**

The physical environment should be accessible, and medical interpreters should be available at healthcare institutions, or specialists with specific language competencies should be employed. The model helping students navigate medical services could be similar to legal clinics, which are established in some universities to support students with legal challenges. Additionally, information about available medical services should be simplified and communicated in a more accessible manner.

Medical translators should be available as well because often it is difficult to describe in another language what is happening".

– Student with disability

- **Strengthen the empathy and inclusivity among the medical service providers.**

Specialists working in medical services should receive training to enhance their capacity in inclusive communication, particularly with international mobility students who have disabilities and/or caring responsibilities.

- **Ensure the continuity of treatment with your medical specialist in your home country.**

Students receiving healthcare services in their home countries should be able to continue receiving them online with no additional costs or be covered in the same manner as before the international mobility change.

It would be a good idea for universities to have a doctor, and especially when there is a faculty of medicine".

– HEI representative

- **Provide access to emotional support.** Continuous emotional support during the international mobility is essential, as participation often entails substantial personal and social challenges and adjustments. The support could come either through the figure of a psychologist in the host HEI or via the healthcare system in the host country. It is proposed that international mobility students with disabilities or caring responsibilities would have access to a certain amount of free psychological consultations, either at the university or in specialized mental health centres. A mentorship or buddy programme, in which senior students support junior students, could complement this system; however, students would require dedicated training to become effective mentors.

8. EXTRACURRICULAR ACTIVITIES

Key challenges in the extracurricular activities presented for discussion during Master Collab were the following:

8.1. Limited awareness and sensitivity among organizers regarding accessibility and inclusion needs when planning activities. Examples:

- Extracurricular activities (cultural, social, or sports) are not designed inclusively or fail to consider the needs of students with disabilities.
- Physical inaccessibility and communication barriers are widespread.

8.2. Students face physical, linguistic, social, and financial barriers that limit their participation in extracurricular activities. Examples:

- Students often face social isolation and discouragement from participating because they feel events “are not for them.”
- Language and information barriers prevent international students with disabilities from joining activities.
- Financial and transport obstacles limit engagement.

The solutions recommended by the Master Collab participants were the following:

- **Adapt sports activities to meet the needs of students with disabilities.** Different cities could distribute a questionnaire to identify which sports activities students with disabilities are interested in. The specific type of sport (e.g., adapted cycling or adapted surfing) may be less important than ensuring opportunities for meaningful participation.
- **Use multiple languages to support communication during the extracurricular activities by allowing the use of both English and the local language.**

Translation services should be provided, accompanied by training for staff. AI-based tools, including built-in features on platforms like Microsoft Teams, can facilitate rapid translation. Additional training should be provided to enhance awareness and promote the effective use of available translation solutions.

You cannot do everything in English because then it is also not inclusive, for many locals. We want local languages to be there, but we don't know how to do it well; we need more training for that”.

– HEI representative

- **Enhance awareness and information on the support needs of students with disabilities.** Improve communication about disability-related support requirements and deliver systematic awareness raising for the entire HEI community. Address GDPR-related issues that prevent organizers from knowing participants' needs in advance and hinder accessibility planning. The existing initiatives within HEIs (e.g., Ability+; Social Inclusion Weeks) are valuable but require stronger institutional involvement.
- **Expand Collaboration with NGOs and strengthen outreach.** HEIs and student organisations should actively engage with NGOs that already work in relevant fields and can contribute expertise, co-planning, and support.
- **Strengthen event accessibility by using clear accessibility indicators.** All extracurricular activities must identify their accessibility for various groups. Buddy training should be expanded to cover diverse support needs, and HEIs should ensure proper training for all students supporting international peers. Student unions and HEIs are encouraged to assess the accessibility of event venues and develop a database or map of accessible locations, potentially in collaboration with IT departments.
- **Apply a range of accessibility-enhancing approaches.** HEIs could liaise with cultural institutions to offer free gallery access one day a week; a network of volunteers could be formed to assist in this process. Offering event vouchers to international students, sharing best practices across countries, and creating connections between long-term and short-term international mobility students, recognizing that their needs for participation in such events may differ. Social inclusion weeks could also be organized to further promote engagement and community building.

Three procedures should be taken into account in each event: first, for the preparation of each event you should include different people and students with disabilities; second, involve the student association in these extracurricular activities and in the events – to connect more to mentoring; third, connect it to the communities, because in the community you can find NGOs that provide this type of support. So, promote better connections between universities and NGOs in the communities. Also, it is important that people get involved in the creation and organisation of the event”.

– NGO representative

The reason why people join the community programme is to get to know the local culture, local communities, and people. It is important to have events inside the Erasmus group, but also important to break that bubble, and connect with the local community, which reduces loneliness, helps with social integration, and improves language skills”.

– NGO representative

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Part B.

Synthesis Report of the Collab on App-Prototype Development

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INTRODUCTION

The Inclusion+ project is an initiative focused on increasing the inclusivity of international mobility programs in higher education. The project places particular emphasis on students with disabilities and those with caring responsibilities. The Inclusion+ project aims to overcome these barriers by developing change-making tools that promote equal access and participation for all students. A key component of Inclusion+ is the development of a mobile application prototype designed to support these students during their mobility experiences. This prototype aims to provide accessible information, tools, and resources, fostering greater autonomy and a more enriching experience. As emphasized in the project's co-design vision, this process is built on the principle of designing with students, not just for them. Co-design actively involves users and stakeholders in the design process. It recognizes users as experts in their own experiences. This approach is particularly important for accessibility, ensuring that the needs of people with disabilities are considered from the start and that solutions are user-centered. By inviting students as co-designers from the initial scoping discussions to the final prototype, our project team ensures that daily, real-world barriers, whether in cities, university campuses, or digital systems, are directly translated into actionable product requirements.

Within the Inclusion+ project, the National Collaborative Laboratories (National Collabs) focused on app prototype development held in Finland, Lithuania, Portugal, and Turkey formed the robust foundation of the co-design approach and played a central role in shaping the first draft of the app prototype. As a continuation of these national efforts, the second part of the "Master Collab" focused on testing the preliminary prototype, gathering user feedback, and refining key features through interactive evaluation sessions. This report first outlines how evidence gathered from four countries was synthesized into evidence-based user personas and identified key problem areas. It then details how detailed user journeys mapped for these personas drove the definition of critical prototype features. Finally, the report documents the interactive testing of the prototype's preliminary screens and presents the feedback collected to refine the interface and enhance usability.

CROSS-COUNTRY THREADS: FOUR CRITICAL GAPS

The collaborative analysis of data gathered from Finland, Lithuania, Portugal, and Turkey during national collabs revealed that, despite geographical and cultural differences, the barriers students face during mobility processes are strikingly similar. These common challenges are synthesized into four critical gaps:

1. INFORMATION ARCHITECTURE GAP

One of the most significant challenges students face before and during mobility is the fragmentation of information. Currently, students are required to navigate numerous disconnected sources to access critical information regarding rights, funding, housing, healthcare, and transportation.

- **The Problem:** Information sources are often scattered and frequently available only in local languages. Data from Turkey highlights an apparent demand for an inter-institutional platform covering rights and processes. Similarly, evidence from Lithuania emphasizes that unclear pathways to services abroad cause significant anxiety for students.
- **The Solution:** A single, multilingual “Pre-Mobility Guide” should be created and jointly maintained by universities, municipalities, and state services. As noted by Portuguese students, it is critical that this platform relies not only on official data but also on “peer-validated” information to ensure reliability and trust.

2. FUNDING THAT MATCHES REALITY

Current funding models and scholarship systems often fail to cover the “hidden costs” faced by students with disabilities and those with caring responsibilities, creating a severe economic barrier to participation.

- **The Problem:** Hidden costs for companions, assistive technology, and specialized apps deter participation. Students in Finland described paid assistive apps as “unfair,” arguing that they should not have to pay for core accessibility features that others receive for free. Furthermore, as seen in the Lithuanian context, the paperwork burden is especially severe for non-citizen students with disabilities, who often fear losing benefits or facing bureaucracy, leading them to opt out of mobility entirely.

- **The Solution:** Funding models must reflect reality by covering actual needs, such as assistive tech and companion costs, rather than just travel and accommodation, and administrative processes must be simplified, particularly for international students.

3. “EXISTS BUT DOESN’T WORK” ENFORCEMENT

One of the most striking findings is the gap between the physical infrastructure existing “on paper” and its functionality in daily life. Investments often result in symbolic installations that fail to provide real accessibility due to a lack of maintenance.

- **The Problem:** A student from Turkey summarized this issue effectively: *“The yellow stripes you put on our sidewalks as decoration, without fixing them properly, are not getting us anywhere.”* Similarly, Portugal faces issues with slippery pavements and high steps at shop entrances, while Finland struggles with exterior bus announcements that are missing or inaudible.
- **The Solution:** To convert symbolic infrastructure into reliable services, performance-based audits are essential. Open and accessible “digital fault dashboards” for ramps, lifts, announcements, and toilets should be established to ensure transparency and accountability in maintenance.

4. DIGITAL ACCESSIBILITY BY DEFAULT

Accessibility must be an institutional “default,” not an optional “add-on” provided only upon request. Education materials and campus life must be designed to be inclusive from the start.

- **The Problem:** Currently, students are forced to request accommodations (i.e., institutional and accessibility-related arrangements) constantly. In Portugal, teaching staff ignoring or mishandling accommodation requests is a significant barrier, while in Lithuania, educators are often unprepared to adapt materials. Additionally, students in Finland highlighted the lack of clear interior maps for navigating the campus.
- **The Solution:** Lecture recording, subtitling, described materials, and interior maps must become institutional defaults. Furthermore, staff training in universal design should be systematic and mandatory to ensure consistent support.

EVIDENCE-BASED PERSONAS & USER JOURNEYS

To guide the design process of our app prototype, four distinct “Personas” were developed based on qualitative data and student voices collected from Finland, Lithuania, Portugal, and Turkey. These profiles are not fictional characters; they are composite profiles representing the real-world struggles, fears, and demands voiced during the National Collabs focused on app prototype development. They serve as the primary reference points for ensuring the app addresses actual, lived barriers rather than assumed ones.



BELIZ

Profile

Low Vision Student

Location

Istanbul, Turkey

Context

Preparing for Erasmus mobility.

Background & Core Insight

Beliz represents students who are frustrated by the gap between the infrastructure that “exists on paper” and the infrastructure that works in daily life. Her core insight offers a powerful critique of symbolic accessibility over sustained usability; she calls for fixes that function on a daily basis, not merely symbolic installations. She emphasizes that maintenance is as critical as initial investment.



Figure 1: Low Vision Student

Critical Barriers for Beliz

- **Symbolic Infrastructure:** Tactile paving that is decorative, broken, or leads to nowhere; elevators that are frequently out of order without notice.
- **Navigation Hazards:** The lack of exterior bus announcements makes it impossible to identify which bus is arriving at a stop.
- **Information Void:** A lack of detailed campus interior maps and a centralized hub to learn about her rights and funding processes.

Prototype Solutions for Beliz

- **Real-Time Status:** A feature showing the *actual* working status of elevators and ramps to prevent wasted trips.
- **Audible & High-Contrast Navigation:** Interior maps with high-contrast modes and audible cues for campus navigation.
- **Rights Hub:** A centralized information module covering legal rights and “how-to” guides in her native language.



JONAS

Profile

Low Vision Student

Location

Helsinki, Finland

Context

An active student facing systemic barriers.

Background & Core Insight

Jonas emphasizes that accessibility is not just about physical ramps, but also about the human systems surrounding them. His experience underscores that *“attitude and maintenance matter as much as infrastructure.”* He shares a feeling of vulnerability when equipment fails: *“When my wheelchair broke down, I didn’t know where to go or how to get help.”* He insists that changing the *“driver’s attitude”* is often more important than fixing the bus itself.



Figure 2: Wheelchair User

Critical Barriers for Jonas

- **Human Factors:** Drivers or staff who are unwilling or untrained to assist with ramps, creating social barriers beyond physical ones.
- **Unreliable Data:** Digital maps often label locations as “accessible,” but in reality, ramps may be too steep or blocked, leading to a lack of trust in official data.

Prototype Solutions for Jonas

- **Verified Visuals:** A requirement for “verified photos” and “virtual tours” of entrances and facilities, allowing him to judge accessibility for himself before arriving.
- **Direct Assistance Channels:** Features to contact operators directly or report driver assistance failures.
- **Peer Validation:** Relying on community-verified information rather than just official claims.



EGLÈ

Profile

Hearing-Impaired Student

Location

Vilnius, Lithuania

Context

An independent traveler fearing isolation abroad.

Background & Core Insight

Eglè's primary anxiety stems from the reliance of public systems on audio-only information. She expresses a deep fear of getting lost or missing critical updates when traveling alone:

"If I will be alone, then it will be hard

for me to understand just where to go."

Her profile emphasizes the need for visual alternatives to all auditory information and better sensory planning in urban environments.

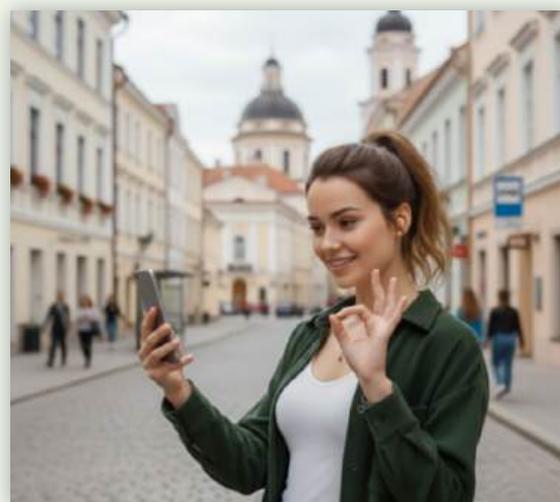


Figure 3: Hearing-Impaired Student

Critical Barriers for Eglè

- **Audio-Only Systems:** Public transport announcements and emergency alerts that lack visual counterparts, leaving her uninformed.
- **Complex Logistics:** Difficulty in navigating fragmented ticketing systems and identifying quiet spaces in chaotic environments.

Prototype Solutions for Eglè

- **Live Captions & Translation:** A feature to transcribe lectures and real-time announcements into text on her screen.
- **Sensory Navigation:** "Noise maps" that help her plan routes to avoid overwhelming sensory environments.
- **3D/AR Navigation:** Augmented reality tools to visually guide her through complex transit hubs, removing the need to ask for help.



ANA

Profile

Student with Caring Responsibilities

Location

Lisbon, Portugal

Context

Balancing academic life with childcare.

Background & Core Insight

Ana represents the often-overlooked struggles of student-parents. For her, accessibility is about navigating the city and campus with a stroller and securing safe, child-friendly spaces. Ana's access needs are visible yet not recognized as "real" accessibility concerns. She distrusts official data, which rarely accounts for family needs; she prefers instead certified information shared by other parents and caregivers.



Figure 4: Student with Caring Responsibilities

Critical Barriers for Ana

- **Micro-Mobility Hazards:** Slippery pavements (common in Portugal) and single steps at shop entrances that make stroller navigation dangerous or impossible.
- **Logistical Gaps:** A lack of information on where to find the "nearest accessible toilet" or priority spaces on public transport, which are often occupied by others.
- **Housing & Care:** The immense difficulty of finding trusted, verified information about family-friendly housing and daycare in a new city.

Prototype Solutions for Ana

- **Community-Verified Reviews:** A system where users can rate neighborhoods and services with photos, building a "web of trust" for parents.
- **Family-Centric Maps:** Filters to locate the nearest accessible toilets and family-friendly services instantly.
- **Priority Enforcement:** Tools to report misuse of reserved spaces on public transport.

USER JOURNEY

The proposed Minimum Viable Product (MVP) for the Inclusion+ mobile application is based on the core philosophy of “Sensory Rights”, a concept developed through collaborative sessions, which suggests that equitable access to information is a fundamental aspect of justice. The application functions as a personalized “Super App,” consolidating fragmented services (navigation, communication, social networking, and academic support) into a single, cohesive interface designed to grant students with disabilities and caring responsibilities full autonomy during their international mobility experiences.

ONBOARDING AND PROFILE PERSONALIZATION

The user experience begins with a highly accessible, modular onboarding process where the student defines their specific “lens” for the world. Instead of generic settings, the user selects their profile (Visual Impairment, Hearing Impairment, Mobility Impairment, or Caring Responsibility), which instantly reconfigures the user interface. For a student with visual impairments, the interface transitions to a high-contrast, screen-reader-optimized layout, compatible with VoiceOver and TalkBack, which prioritizes audio cues and haptic feedback. For a student with hearing impairments, the app prioritizes visual notifications and text-based alerts, integrates clear, captioned video instructions. For wheelchair users or parents with strollers, the interface prioritizes map visuals, emphasizing button sizes, and controls that are easy to reach. This personalization extends to the content itself; a student with a hearing impairment will see “Noise Maps” to find quiet study spaces, while a student with a physical disability will see topographic data regarding slope steepness and pavement quality.

THE LIVING MAP AND URBAN NAVIGATION

The heart of the MVP is the “verified reality” navigation system, designed to address the anxiety of moving through unfamiliar cities. Unlike standard mapping tools, this feature layers critical, community-verified accessibility data over the city grid. For users with mobility impairments and parents with strollers, the map proactively highlights “Green Routes” as pathways verified to be free of cobblestones, high curbs, or steep inclines. It integrates real-time data from municipal APIs to show the operational status of elevators at metro stations and university buildings, preventing the frustration of arriving at a platform only to find the lift out of order.

For users with visual impairments, the navigation experience transforms into an auditory assistant. As they move through the city, the app utilizes geolocation and AI-driven object recognition to provide detailed environmental descriptions, such as announcing “Starbucks on your left, entrance has two steps” or “Bus stop approaching, bench available.” This system integrates with the phone’s camera to read street signs, identify bus numbers, and scan restaurant menus aloud.

For the hearing impaired, the map visualizes sound. It provides visual alerts for public transport announcements, vibrating the phone when a specific bus arrives or when a stop is reached, eliminating the reliance on auditory announcements that are often missed. The map also highlights “Quiet Zones” in the city and on campus, helping users avoid sensory overload.

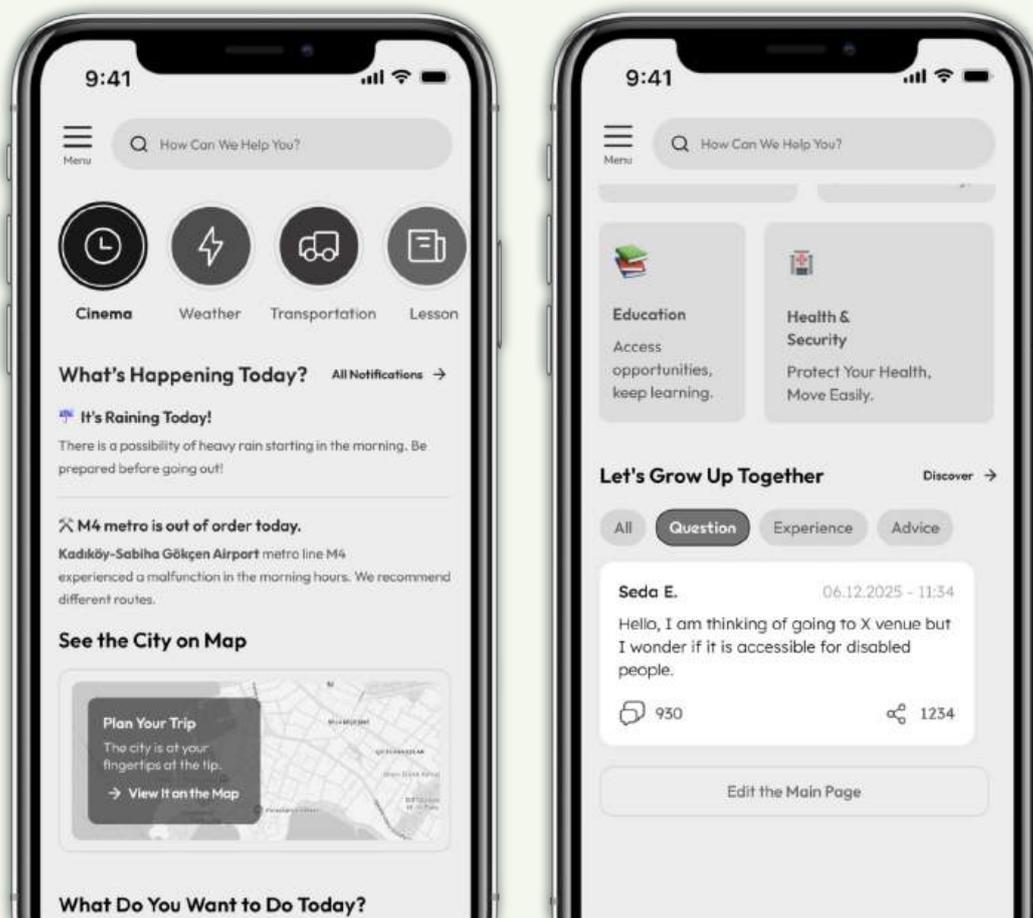


Figure 5: How Can We Help You?



Figure 6: What Do You Want to Do Today?

THE CULTURAL ACTIVITIES AND SOCIAL INTEGRATION MAP

To combat the isolation reported by participants, the MVP features a specialized Cultural Activities Map. This is a curated, rated directory of social spaces reviewed by peers with similar disabilities. A student using a wheelchair can view photos of a museum's bathroom door width or a cafe's ramp angle before leaving their dorm. A parent can filter locations for changing tables and breastfeeding-friendly spaces.

This section integrates a social "Buddy System" and "Peer Support" forum. Here, students can connect with local volunteers or other exchange students to plan outings. For example, a visually impaired student wanting to visit a museum can use the app to request a volunteer companion for that specific activity. The app allows users to "check-in" to locations and leave rich media reviews (voice notes, videos, or photos) documenting the actual accessibility of a venue, creating a crowdsourced database of trust that goes beyond official "accessible" stickers.

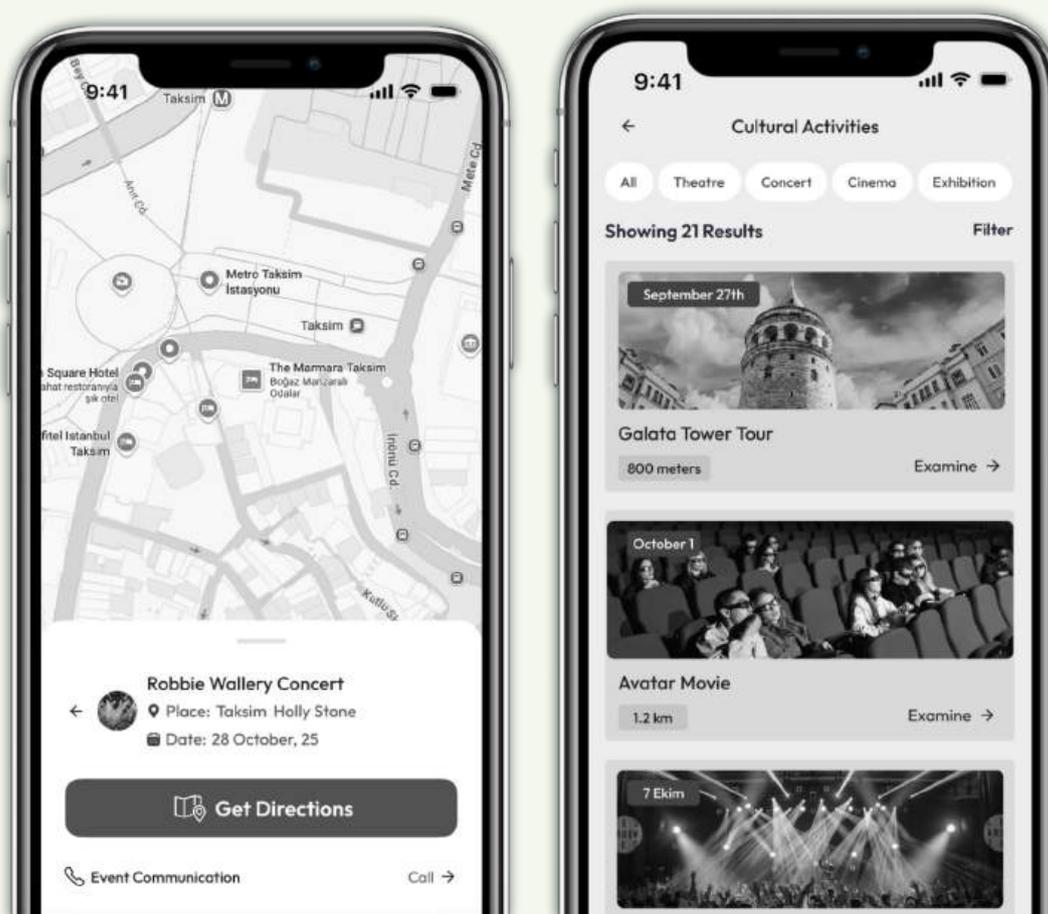


Figure 7: Cultural Activities

ACADEMIC COMPANION AND CAMPUS ACCESSIBILITY

Recognizing that mobility extends to the classroom, the app includes a dedicated educational module. To solve the “last mile” problem of finding specific classrooms, the app offers indoor navigation for university buildings, guiding users to the correct door, accessible toilet, or elevator.

For the classroom experience, the app features a suite of communication tools. For students with hearing impairments, it offers a real-time speech-to-text transcriber for lectures and group discussions, which can also be archived for later study. It includes an “Educational Passport” feature where students can upload their accommodation needs and share them directly with professors, bypassing the need for repeated, awkward self-disclosure. For visually impaired students, the app includes an OCR (Optical Character Recognition) scanner that instantly converts printed handouts or PDF slides into accessible text formats.

TRANSPORT AND SAFETY INTEGRATION

The MVP addresses the critical friction points of public transport. The app allows users with physical disabilities or those traveling with strollers to send a “Boarding Request” notification directly to a bus or tram driver’s dashboard, alerting them that a passenger requiring the ramp is waiting at the next stop. This feature aims to eliminate the issue of drivers ignoring passengers or failing to deploy ramps.

Finally, an integrated “Safety & Assistance” button provides immediate access to emergency services with location sharing. For non-emergencies, it connects to a chatbot or a video-relay service where users can get quick answers (such as translating a conversation with a landlord or reading a medicine label), ensuring that help is always just one tap away.

PROTOTYPE TESTING

The user’s journey during the Master Collab focused on app-prototype development served not merely as a presentation, but as an active tool for testing the prototype during the event. Given the diverse range of disabilities among participants (visual, physical, etc.), the testing process was conducted in two distinct modes, adhering to the principles of “Inclusive Usability Testing.” This methodology ensured that insights were captured from all participants, regardless of how they interact with technology:

- 1. Interactive Prototype Mode:** Designed for participants who are comfortable using a visual interface (specifically the Figma prototype). Participants navigated the prototype on their own devices with facilitator support, clicking through buttons to experience the scenario firsthand.
- 2. Narrated Walkthrough Mode:** Implemented for participants using screen readers or those with motor limitations. In this mode, the facilitator shared their screen and verbally described every step, on-screen text, and button function. Participants engaged via keyboard commands or verbal instructions, while a dedicated note-taker captured their feedback.

Running both formats simultaneously ensured that everyone could participate according to their specific needs and preferences. Participants provided feedback on clarity, navigation speed, and feature utility to refine the next iteration.

In this context, the participants’ feedback in the Vilnius master collab was mainly in line with the earlier co-design workshops. Participants placed significant emphasis on the visual and functional clarity of the interface, stressing that a “one-size-fits-all” design is insufficient for their diverse needs. For students with visual impairments, feedback centered on the necessity of high-contrast modes

and the ability to adjust text size dynamically, as standard interfaces often present stairs or obstacles as an indistinguishable “gray mass.” Similarly, participants with physical impairments highlighted that “clarity” extends to the physical interaction with the screen; buttons must be easily clickable and positioned to accommodate those with limited hand dexterity. The consensus was that the interface must be highly customizable, allowing users to toggle between “dark mode” for low vision or simplified, uncluttered menus for those who find complex navigation overwhelming, ensuring that the app functions as a personalized assistant rather than a static tool.

Regarding navigation speed, the feedback highlighted a critical intolerance for lag, particularly when users rely on the app for safety and real-time orientation. Visually impaired participants specifically noted that existing AI tools often require them to take a photo and wait for a description, a delay that is impractical when trying to catch a bus or navigate a busy street. Consequently, the next iteration must prioritize “zero-lag” performance, utilizing live video analysis and immediate auditory feedback to describe surroundings instantly. For students with physical disabilities, speed was equated with the currency of information; they emphasized that knowing an elevator was broken yesterday is useless. Therefore, the prototype must facilitate rapid, real-time updates on infrastructure malfunctions, ensuring that the “shortest route” provided is also a currently accessible one.

The utility of social and community features, conceptualized in the “Let’s Grow Up Together” and “Stories” modules, emerged as a vital component for overcoming the profound social isolation reported by international students with disabilities. Participants expressed a strong desire for a “Peer Support” corner and peer mentorship programs, which form the basis of the “Let’s Grow Up Together” feature. This tool is envisioned as a structured support network where experienced students can guide newcomers through the specific challenges of a host city. Similarly, the “Stories” feature was refined based on the demand for “verified reality”; users want to view user-generated content (such as photos of bathroom doors or videos of ramp gradients) uploaded by peers, creating a repository of trust that official accessibility labels often fail to provide.

Finally, the feedback underscored that refining the next iteration requires a shift from a “service-for” model to a “design-with” philosophy, positioning students as “experts by experience.” The participants argued that the “Super App” must move beyond basic compliance and actively integrate features that foster autonomy, such as the proposed “therapy bots” or “human-like chatbots” to handle socially anxious moments. This feedback loop established that the app’s success relies on continuous, direct input from the disability community to identify gaps in “Sensory Rights.” By integrating these insights, the next version of the prototype will aim to strike a balance between the technical demands of accurate navigation and the emotional need for community belonging, ensuring the technology serves as a true companion for independent living.



Figure 8: “Super App” Prototype

EVALUATION

After the early-stage prototype was presented to students within the Master Collab devoted to app prototype development, a user-experience-focused survey was conducted to evaluate whether the application met students’ needs for the inclusive organization of their urban mobility, cultural participation, and daily lives. The 15-item survey included Likert-type closed-ended questions and two open-ended qualitative items. Ten participants evaluated the prototype’s functionality, navigation structure, accessibility level, content quality, and cultural guidance capacity through both quantitative and qualitative responses. The findings were interpreted using thematic analysis, a method widely employed in user experience research.

NAVIGATION AND GENERAL EASE OF USE

This section comprises four questions evaluating the application's usage flow, main page design, and the intuitiveness of its menu structure:

- *The application is easy to navigate.*
- *The structure and design of the main page are clear.*
- *I could easily understand what each section (Home, Cultural Activities, Let's Grow Up Together) is for.*
- *The buttons and interactive elements (e.g., "Map", "Discover") are easy to select and use.*

Most participants rated the navigation experience as "Agree" or "Strongly Agree." They highlighted the clarity of the main page layout and the ease with which the purpose of each section could be distinguished. The clickability and placement of interactive elements also generated high levels of satisfaction. Participants were able to reach core functions quickly and found the menu system intuitive. The smooth navigation experience demonstrates that the underlying framework supporting the user journey has been effectively designed.

ACCESSIBILITY AND USABILITY

This section consists of three questions evaluating the application's adherence to inclusive design principles:

- *Screen reader feedback (voice-over) makes sense.*
- *The application is visually clear and easy to read.*
- *I could complete tasks using only the keyboard.*

Some participants expressed uncertainty regarding the clarity and functionality of the screen reader's feedback. Visual readability, however, was rated mainly positively, with most users selecting "Agree." A considerable number of participants indicated either uncertainty or an inability to evaluate whether tasks could be completed using only the keyboard.

These findings present a mixed outlook on accessibility. While visual contrast and overall readability were evaluated favorably, areas such as screen reader compatibility, button labeling logic, and keyboard navigation emerged as domains requiring further development. Together, these results suggest that although the prototype demonstrates an intention toward inclusive design, its accessibility features are not yet fully operational and necessitate systematic refinement.

CONTENT RELEVANCE AND USER ALIGNMENT

This section includes two questions assessing how users relate to and engage with the content:

- *The content respected my needs and preferences.*
- *I can imagine using this application comfortably during daily mobility or Erasmus activities.*

For both items, most participants selected the “Agree” option, indicating a general perception that the content is relevant to users’ needs and appropriately situated within the Erasmus context. The findings show that the application’s language, tone, and informational structure align well with the expectations and lived experiences of the target audience.

However, several qualitative responses noted that certain pages contained an excessive amount of information. Thus, although overall content relevance was evaluated positively, further simplification and more concise presentation are needed to improve readability and enhance user comfort.

CULTURAL DISCOVERY, MAP, AND EVENT FUNCTIONS

This section includes two questions that reflect the strongest aspects of the prototype:

- *The “Robie Wallery Concert” and map functions helped me discover local cultural events.*
- *The “Discover” section provides useful information and orientation.*

The cultural discovery and map features received the highest positive feedback across all survey categories. Participants found both the event discovery and navigation functions highly useful. Map accuracy, time–distance indicators, and clarity of event locations emerged as the most successful elements of the application.

These findings suggest that the prototype holds strong potential as an effective tool for supporting urban cultural engagement and facilitating students’ integration into local cultural environments.

OVERALL SATISFACTION AND WILLINGNESS TO RECOMMEND

This section consists of two questions measuring participants' overall satisfaction:

- *I enjoyed exploring this application prototype.*
- *I would recommend this application to other Erasmus or mobility students.*

Most participants reported that they enjoyed exploring the application and that they would recommend it to students with similar profiles. These responses suggest that the application aligns well with the expectations of its target audience and has strong potential for widespread adoption among prospective users.

QUALITATIVE FINDINGS: THEMATIC ANALYSIS

The two open-ended questions in the survey (“What did you like most?” and “What could be improved?”) were analyzed using thematic content analysis. Participant feedback converged around four major themes, which highlight both the strengths of the prototype and the key areas requiring refinement.

AESTHETIC DESIGN AND VISUAL HARMONY

Participants consistently described the application as visually appealing, noting its harmonious color palette and modern interface design. This theme suggests that the prototype makes a strong initial impression and fosters positive engagement. The visual layout was perceived as clean and coherent, reinforcing the sense of organization and professionalism reflected in earlier co-design stages.

ACCESSIBILITY: POTENTIAL AND IMPLEMENTATION GAPS

While the intention to support accessibility was widely recognized and appreciated, participants highlighted implementation gaps. Challenges included incomplete screen reader compatibility, insufficient clarity of icons, and the need for more flexible interaction modes for users with different abilities. These insights show that although accessibility was embedded in the design vision, its technical and structural execution remains in progress. Participants emphasized that accessibility should move beyond surface-level adjustments toward fully operational, user-tested functionalities.

INFORMATION DENSITY AND COGNITIVE LOAD

The most recurrent criticism concerned excessive information density. Participants reported that some screens felt overcrowded, with long text blocks and limited hierarchical structure. Missing or unclear icon descriptions further contributed to cognitive load. This theme highlights the importance of streamlined content presentation (shorter text, more precise segmentation, and a stronger visual hierarchy) to enhance readability and minimize the cognitive effort required to navigate the application.

FEATURE DISCOVERABILITY AND LEARNING CURVE

Several participants indicated that, although they recognized the application's potential, they needed more time to understand its functions fully. This reflects limitations in feature discoverability and highlights the need for a guided onboarding process. Participants requested mechanisms such as introductory walkthroughs, contextual hints, or icon explanation screens. Clarifying the logic behind gamification elements was also identified as necessary for reducing confusion and helping users better understand the application's interaction model.

RECOMMENDATIONS EMERGING FROM THIS THEME INCLUDE:

- *integrating an onboarding sequence for first-time users,*
- *improving screen reader performance,*
- *adding short explanatory screens,*
- *simplifying dense pages, and*
- *clarifying gamification mechanics.*

SECOND PHASE OF EVALUATION: THOUGHT WALL ACTIVITY

Following the interactive testing of the prototype, participants engaged in a structured feedback session. Utilizing a digital “Thought-Wall,” participants categorized their feedback into three specific domains: Pros (What worked), Cons (Barriers), and Change (Recommendations).

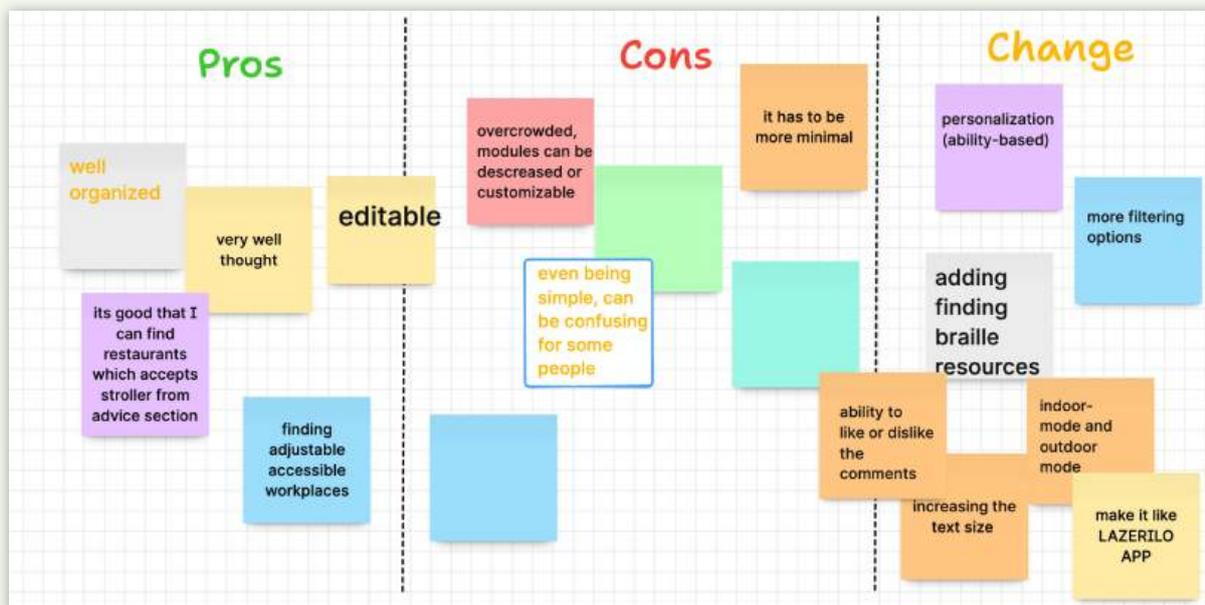


Figure 9: Participant’s Thought Wall

Participants validated that the prototype successfully addressed several key persona needs, particularly in terms of organization and specific accessibility features.

- **Organizational Clarity:** Multiple participants noted that the app structure was “well organized” and “very well thought out,” confirming that the categorization of services (Food, Health, Culture) was intuitive.
- **Persona-Specific Validation:** A critical validation came from the student-parent perspective. A participant highlighted, “It’s good that I can find restaurants which accept strollers from the advice section.” This directly confirms the value of the “Let’s Grow Up Together” community module for users like the student-parent persona.
- **Flexibility:** Participants appreciated that the interface felt “editable” and adaptable to different needs.

Despite the clean visual design, the feedback on usability friction points highlighted a tension between “comprehensive information” and “cognitive load.”

- **Cognitive Overload:** A recurring theme was that the interface felt “overcrowded.” Participants suggested that “*modules can be decreased or customizable*” to reduce visual noise.
- **Simplicity Paradox:** One critical insight noted that “*even being simple, [the interface] can be confusing for some people.*” This suggests that while the visual design is clean, the information architecture may still be overwhelming for neurodivergent users or those with cognitive disabilities, pointing to a need for a more “minimal” default view.

The “Change” category provided the most concrete roadmap for the next development sprint. The feedback emphasized hyper-personalization over generic accessibility.

- **Ability-Based UI:** Participants requested “*personalization (ability-based,)*” suggesting that the app should reconfigure itself based on the user’s specific profile (e.g., simplified view for cognitive needs, high contrast for low vision) rather than a one-size-fits-all approach.
- **Contextual Modes:** A request was made for distinct “*indoor mode*” and “*outdoor mode.*”
- **Visual Adjustments:** Simple but vital requests included “*increasing the text size*” options.
- **Community Interaction:** Users wanted more granular control in the forum, such as the “*ability to like or dislike the comments*” to upvote the most useful peer advice.
- **Benchmarking:** Participants suggested looking at the “Lazerilo App” as a benchmark for navigation features.

The “Thought-Wall” exercise confirmed that while the first draft of the app prototype succeeds in its mission to centralize mobility information, the next iteration must prioritize customization. The primary actionable takeaway is to implement an “Onboarding Personalization” flow, allowing users to toggle specific modules on or off to prevent the “overcrowded” feeling reported in the Cons section.

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