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INVITE

Social Innovation Incubators for Inclusive Digital Healthcare

INVITE

Internal and external assessment of Curriculum and Open Educational Resources for Inclusive Digital healthcare (INVITE knowledge training)

Developed by the *Project partner MEDITERRANEAN ECONOMIC FORESIGHT INSTITUTE (IPEMED)*

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1 Introduction

Assessment of the new Curriculum and the accompanying Open Educational Resources is a critical step in ensuring their quality, relevance, and long-term sustainability. This educational programme on digital health for medical vocational schools, co-created by partners from Croatia, Slovakia, Turkey and Italy, is designed not only as a response to emerging needs in healthcare education but also as an entry point into a broader social innovation incubator. Because the programme aims to be used across schools that differ in culture, teaching traditions, and classroom practices, systematic assessment is essential to secure its adaptability and impact.

2 Assessment of the INVITE Curriculum – stakeholder involvement and co-creation process

The INVITE curriculum was developed through a participatory and iterative design process coordinated by the University of Zadar (UNIZD), ensuring both scientific rigour and practical relevance for vocational (VET) schools. From the initial stages of curriculum development, the UNIZD developed a comprehensive framework outlining learning outcomes, module structures, and alignment with project's overarching objectives. This draft was shared with all PPs, particularly with medical VET schools, to enable co-development and ensure that structure and content reflected real classroom conditions and institutional needs. Each participating school organized internal consultation sessions with their teachers, focusing on the relevance of learning outcomes, feasibility of implementations (teaching hours, resources, etc.), clarity of language, and alignment with national VET standards and occupational profiles.

All feedback and recommendations were collected through a shared online document, allowing transparent, trackable collaboration among PPs. The UNIZD team, supported by NetHub, conducted a comprehensive synthesis of all inputs, highlighting both areas of consensus and aspects requiring further adjustment. These inputs were systematically reviewed and incorporated into updated version of the curriculum. The process culminated in an online joint session attended by all PPs, where final refinements were agreed upon collectively, ensuring that each PP's pedagogical and contextual perspective was fully integrated.

Through this iterative approach, all comments received during the development phase were incorporated into the final version of the curriculum. The result is a coherent, context-sensitive, and practice-oriented framework that:

- reflects the realities of classroom teaching and resource availability
- incorporates pedagogical approaches suitable for diverse student profiles;
- ensures European relevance through cross-country validation while respecting local contexts.

By embedding continuous assessment throughout the co-development process, the INVITE project ensured that the final curriculum function as a unified, dynamic, and responsive educational package, one that supports teachers as active co-designers and guarantees a consistent yet flexible learning experience for students across all partner schools.

Furthermore, the purpose of this collaborative evaluation was:

1. Confirm curriculum coherence – to verify that every OER corresponds to specific learning outcomes and that, taken together, the OERs portfolio provides comprehensive coverage of the programme.
2. Strengthen peer learning – by exchanging ideas between schools, they can learn how different tasks and approaches might be adapted to varied teaching styles and cultural contexts.
3. Prepare for joint implementation – through this assessment, it will identify which OERs or student tasks require adjustment before launching the programme simultaneously in all three countries.

By carrying out this alignment assessment together, a shared understanding is established of how the OERs function as a complete set of resources, ensuring that no critical outcomes are left uncovered and that students in each school receive a consistent yet adaptable learning experience.

3 Internal Assessment

Internal assessment played a central role in ensuring the quality, relevance, and usability of the curriculum and OERs. Teachers who were directly involved in OERs' development, systematically reviewed OERs, providing detailed feedback on their clarity, alignment with learning outcomes, and adaptability to different teaching and learning styles. This continuous feedback process allowed PPs to identified which materials worked effectively in practice, which required adjustments, and how to better support both teachers and students through improved design and content structure.

The assessment was carried out through structured review formats and guided reflective discussions, ensuring that feedback from all partner schools was comparable. Evaluators were invited to comment on the pedagogical clarity, language accessibility, level of interactivity, and sustainability of curriculum and its dedicated OERs. These insights provided a strong evidence base for identifying recurring specific areas for the improvements.

Based on the collected feedback, all malterials were refined and enhanced to improve their pedagogical coherence and practical usability. Revisions included clearer instructional guidance, simplification of complex tasks, improved alignment with defined learning outcomes.

Importantly, internal assessment also fostered peer learning among teachers, enabling them to exchange ideas on how materials could be applied and adapted with their own classroom environments. Reviewing materials developed by partner schools helped teachers explore alternative pedagogical approaches, discover new ways of integrating digital health content, and reflect on their own teaching practices.

In this way, internal assessment served a dual purpose: it generated valuable feedback for the continuous improvement of the curriculum and OERs and simultaneously functioned as a capacity-building exercise for educators, enhancing their competence in using open resources, integrating digital health content, and applying innovative teaching methods. This peer-to-peer model supports the sustainability of the INVITE programme, as teachers become not only users but also co-creators and multipliers of the developed learning materials in their local settings.

4 External Assessment

While internal assessment ensured continuous improvement within the partnership, external assessment provided an essential complementary perspective – validating the quality and transferability of curriculum and dedicated OERs beyond the project context. Independent feedback helped identify whether the programme is not only suitable for the participating schools, but also transferable to VET schools and training centres in other regions and countries. This is particularly important for digital health, a field that is rapidly evolving and where consistency, adaptability, and interoperability of training are essential to ensure equal access to quality education across Europe.

To achieve this, a group of teachers from medical VET schools not directly involved in the project were invited to review curriculum and selected set of OERs. These external reviewers were carefully chosen for their practical teaching experience and familiarity with the competencies expected of students entering healthcare professions. Their role was to provide a neutral, practice-oriented assessment of the clarity, usability, and applicability of the curriculum and OERs from the perspective of real-world teaching environments.

Reviewers were asked to reflect on how easily the materials could be implemented in their own institutional settings, whether the content aligned with their national curricula, and to what extent it met the learning needs of students preparing to work with older adults and digital health technologies. Their structured feedback helped identify contextual barriers to implementation—including differences in infrastructure, students' prior digital literacy, and the need for linguistic or cultural adaptation of certain resources.

All feedback collected through the external assessment was carefully analysed, and revisions focused on ensuring that the OERs are clear, accessible, and easily transferable across different institutional and national contexts, allowing teachers to adopt them without losing pedagogical consistency or quality. As a result, OERs were edited to support seamless integration into diverse educational environments while maintaining coherence with the INVITE curriculum's overall structure and objectives.

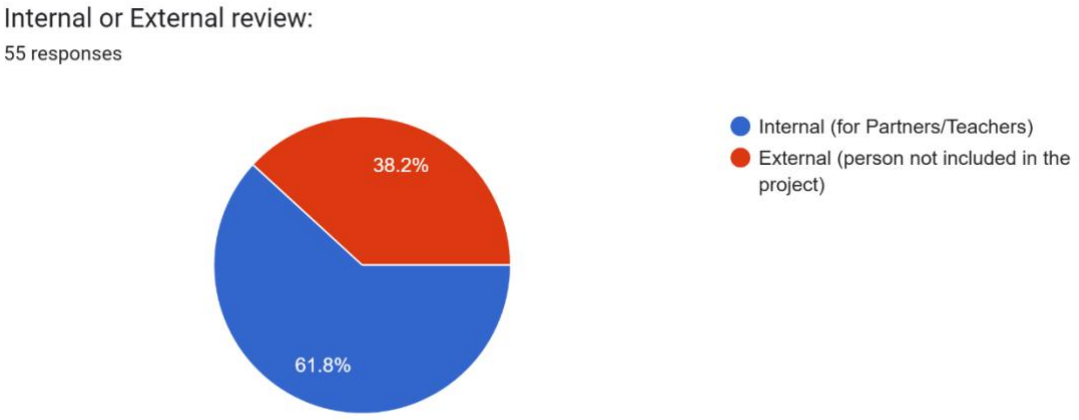
Beyond quality assurance, this external assessment also functioned as a community-building mechanism. It fostered dialogue among VET teachers from different countries, strengthening links between schools and opening pathways for future cooperation and exchange. In this way,

external assessment not only confirmed the robustness and adaptability of the INVITE materials but also contributed to the broader dissemination and sustainability of the programme, ensuring its continued relevance and impact beyond the lifespan of the project.

5 Internal and External Survey Results (VET schools)

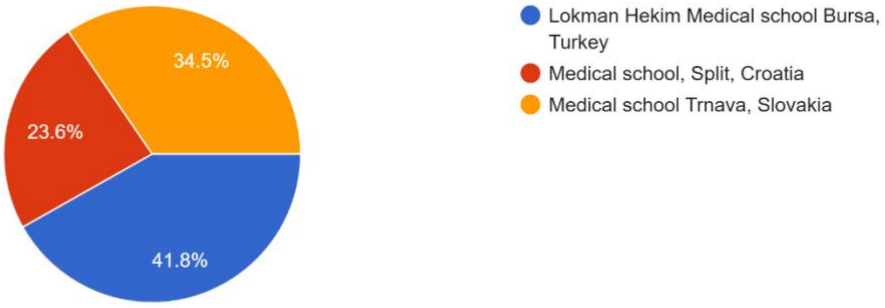
Purpose: To exchange constructive feedback on OERs designed by each partner school, identify opportunities for adaptation, and strengthen student tasks and activities before implementation. The questions incorporated the dimensions of quality that should be examined, including curriculum alignment, pedagogical effectiveness, accessibility, and reusability. Each teacher evaluated several OERs designed by teachers from partner schools (thus from different countries). By embedding assessment into the programme's lifecycle, the partnership ensures the new curriculum remains responsive to classroom needs, culturally adaptable, and ready for broader integration into vocational education systems.

Here are the results:



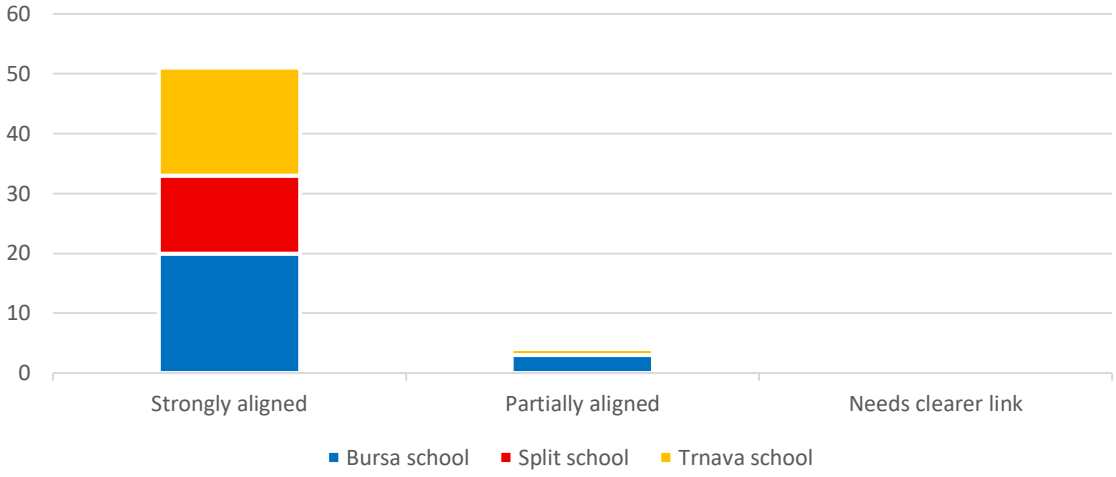
Reviewer representing following school, country:

55 responses



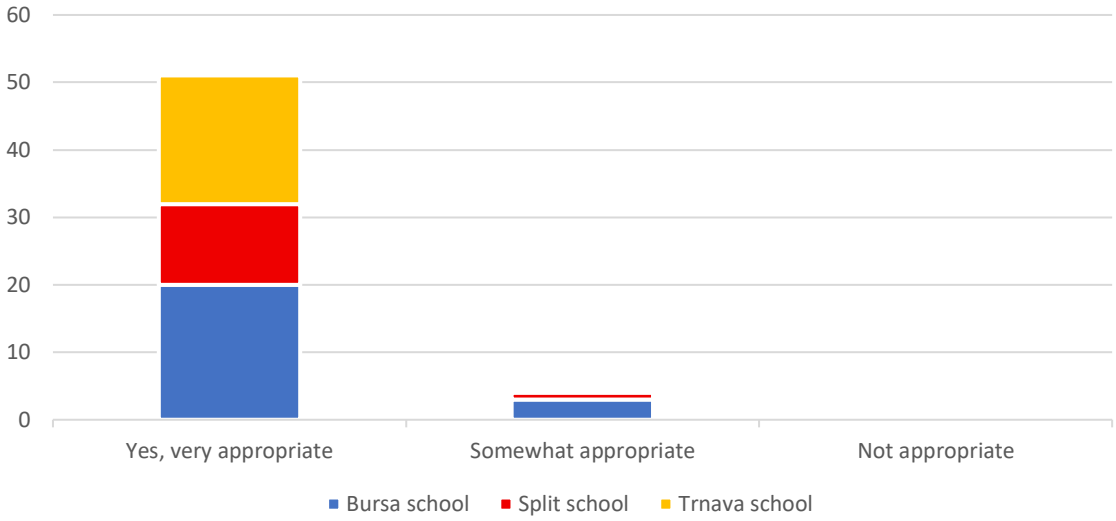
Alignment with Learning Outcomes

How would you describe the alignment of this OER with the learning outcomes?



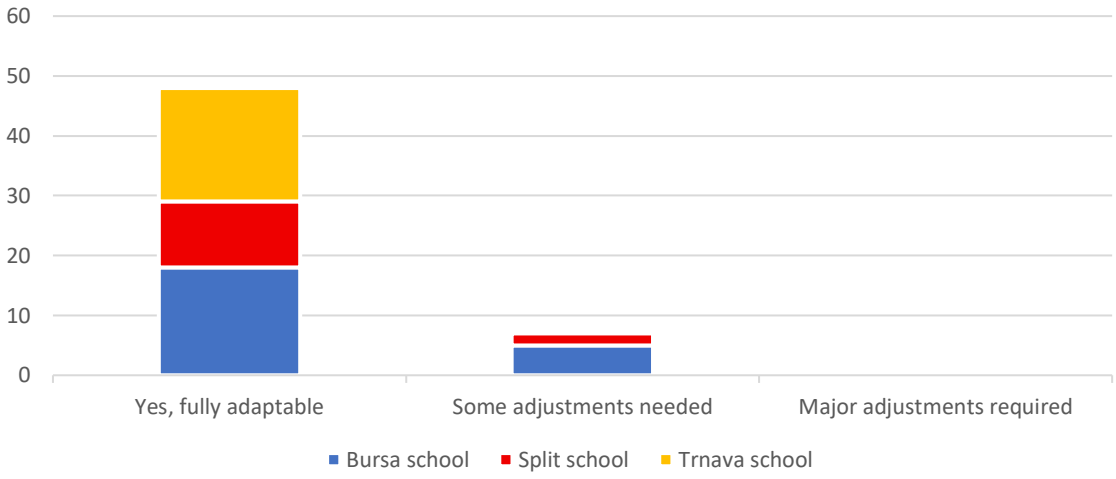
Student Tasks & Activities

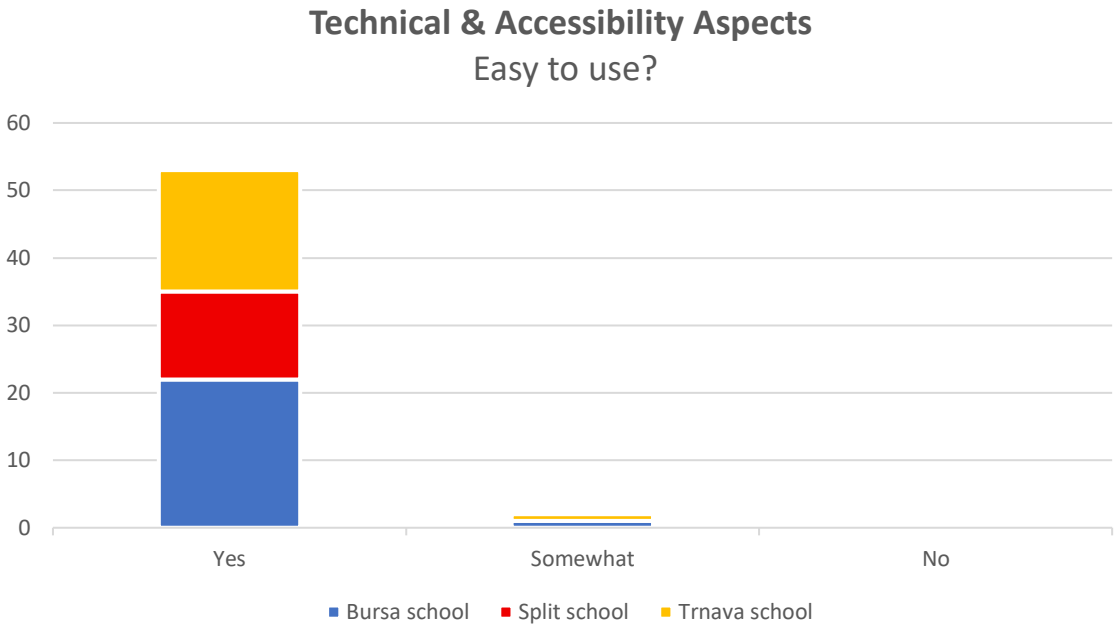
Are the tasks appropriate for vocational medical students?

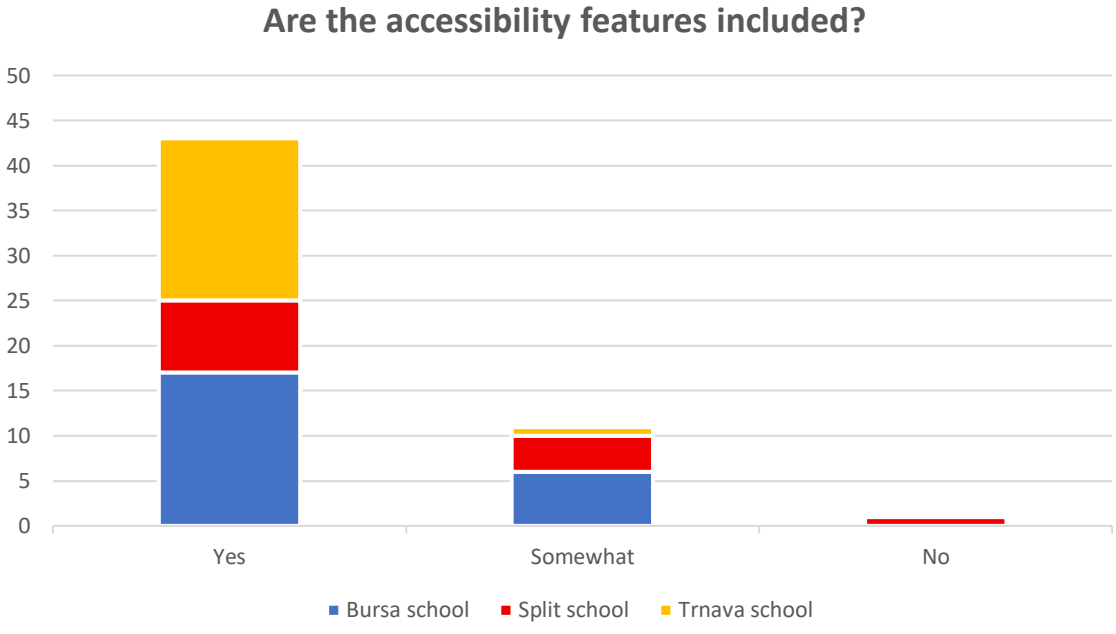


Adaptability Across Schools & Cultures

Can this OER be used in Croatia, Slovakia, and Turkey without major changes?

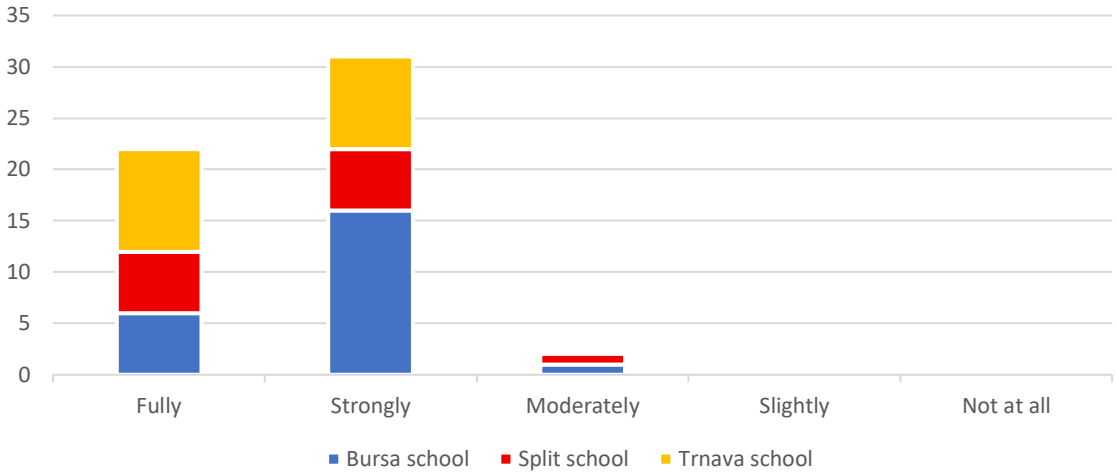



Technical & Accessibility Aspects
Easy to use?
60
50
40
30
20
10
0
Yes
Somewhat
No
Bursa school
Split school
Trnava school

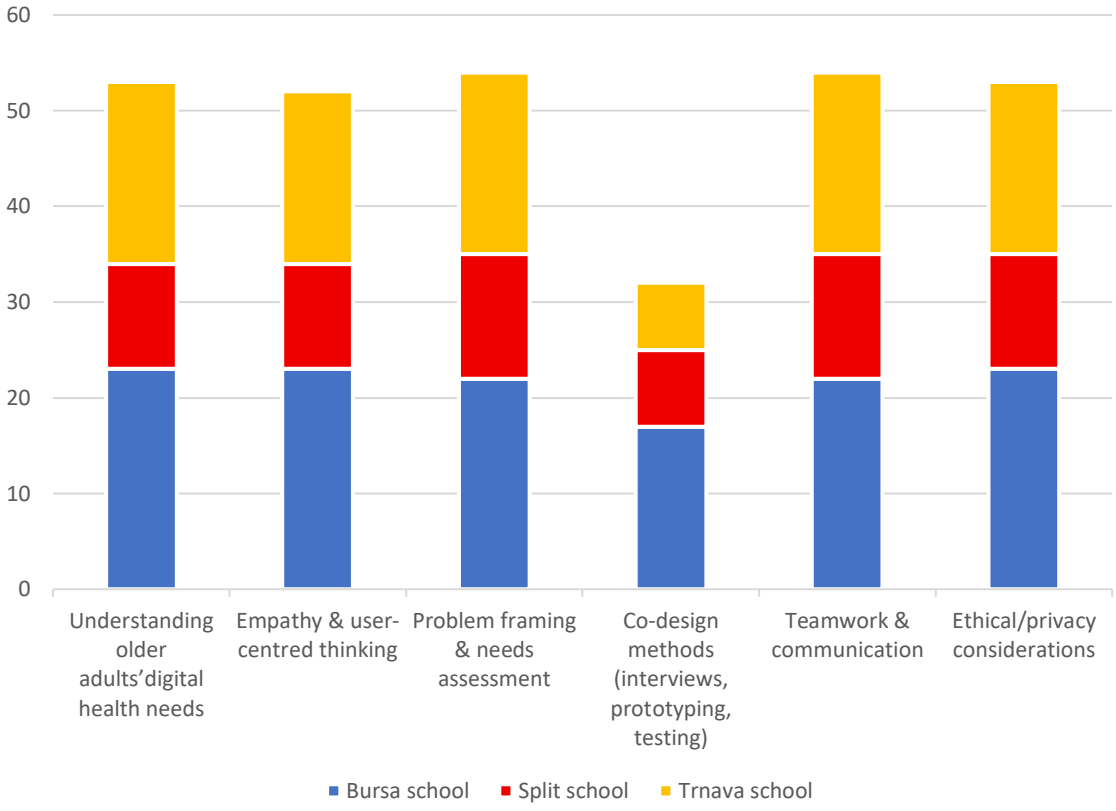

Are the accessibility features included?
50
45
40
35
30
25
20
15
10
5
0
Yes
Somewhat
No
Bursa school
Split school
Trnava school

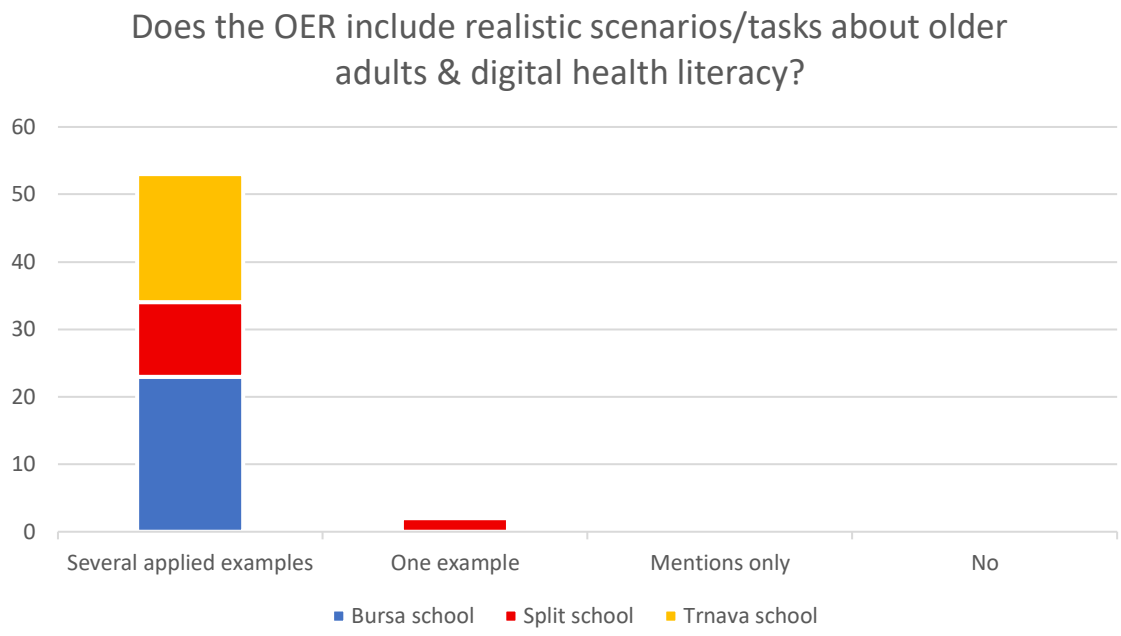
Preparing for the Social Innovation Incubator

To what extent does this OER prepare students to participate in the incubator?



Which competencies relevant to the incubator does this OER build? (tick all that is applicable)





The internal and external assessment confirmed a high overall satisfaction with the quality, clarity, and practical value of the curriculum and OERs developed within the INVITE project. Teachers from all participating countries rated the materials as pedagogically relevant, well-structured, and adaptable to their respective classroom environments. The majority of respondents indicated that the OERs are well aligned with curriculum learning outcomes and support active, student-centred learning.

Feedback also highlighted the ease of use and accessibility of the materials, with most teachers finding the language appropriate and instructions clear. However, several respondents suggested further improvements to harmonise terminology across modules and to include additional examples or guidance for practical classroom application.

Both internal and external participants recognised the transferability of the OERs to other VET settings and emphasised their potential to foster innovation, collaboration, and digital literacy among students. Overall, survey findings confirm that the OERs are ready for implementation and provide a solid foundation for continuous enhancement through further classroom testing and teacher exchange.

It is important to note that, beyond addressing immediate learning outcomes in digital health, the OERs also serve a broader purpose: preparing students to participate in the upcoming

social innovation incubator. The incubator focuses on developing solutions to support older people in using digital health technologies and on increasing digital health literacy among older populations. In this context, both internal and external participants recognized the transferability of the OERs to other VET settings and emphasized their potential to foster innovation, collaboration, and digital literacy among students.

5.1 Set of Recommendations from Internal and External Peer-Learning Survey

The internal and external assessment provided valuable insights into both the strengths and areas of improvement of the developed OERs. Respondents highlighted strong teacher engagement, the relevance of the content to professional practice, and effective collaboration among project partners as key achievements. At the same time, several areas were identified for refinement–most notably the need for greater structural consistency, clearer alignment between learning outcomes and tasks, and additional guidance for classroom application.

All feedback was carefully analysed, and the following recommendations were integrated into the revision and finalization of the OERs, ensuring their improved coherence, accessibility, and pedagogical quality across all modules and partner countries:

1. Design Tasks That Develop Higher-Order Thinking Skills

Create student tasks that require critical thinking, analytical reasoning, and problem-solving rather than simple recall. Tasks should challenge students to engage deeply with content, compare information, and draw their own conclusions.

2. Incorporate Practical, Real-World Applications

Design activities that directly connect to professional contexts and real-life situations (e.g., role-plays, case comparisons, practical scenarios). This approach helps students see the relevance of their learning and prepares them for actual workplace challenges.

3. Build Empathy and Patient-Centred Thinking

Include tasks that specifically develop emotional intelligence and empathy, such as perspective-taking exercises, group discussions about emotional experiences, and activities that require students to think from patients' or clients' viewpoints.

4. Use Varied, Interactive Learning Formats

Combine different activity types, including short pitches, role-plays, group projects, infographic design, and comparative analyses. This variety keeps students engaged and addresses different learning styles while building multiple competencies simultaneously.

5. Foster Collaborative and Communication Skills

Design group-work and teamwork activities that encourage interdisciplinary collaboration, presentation skills, and peer interaction. Activities such as group discussions, collaborative projects, and team presentations help students develop essential professional communication skills.

6. Ensure Clear Alignment Between Tasks and Learning Objectives

Ensure that all student tasks are directly tied to the stated learning outcomes and are appropriate for students' capacity and knowledge level. Tasks should be clearly explained, motivating, and feasible while maintaining high standards for skill development.

While designing comprehensive activities, monitor the total number of tasks to avoid overwhelming students—quality and depth matter more than quantity.

7. Standardize Assessment Structure Across All Materials

Create a uniform assessment format with a consistent number of questions (e.g., 10 questions per learning outcome) across all schools and modules. This ensures equal expectations for students and provides a fair, predictable learning experience.

8. Adopt a Consistent Structural Format

Organize all OERs following the same sequence: Learning Outcomes → Introduction → Content → True Stories → Discussion → Student Tasks → Key Terms Glossary → References. Each learning outcome should have its own document, with numbered subheadings for more straightforward navigation.

9. Simplify Language and Break Up Dense Text

Reducing text complexity to match high school proficiency levels, particularly for vocational learners and those with limited English proficiency. Breaking long paragraphs into shorter sections and using simpler terminology to improve comprehension.

10. Provide Visual Support Throughout

Visuals, diagrams, flowcharts, tables, and infographics need to be used throughout the content to support text-heavy explanations. Include short video links (e.g., for pitch presentations) to enhance multimedia learning.

11. Expand Practical Application Elements

Add micro-scenarios from real-world contexts (hospital, elderly care, etc.) and include short reflective questions after each section. Incorporate local examples of relevant concepts (e.g., social innovation incubators) to improve cross-cultural engagement and help students connect theory to practice.

12. Use Glossary

Expand the key terms glossary to include all potentially complex concepts. Ensure that each term is clearly defined in plain language and, where appropriate, linked to relevant course materials or examples to support understanding.

6 Expert Evaluation

In addition to teacher-led assessments, the INVITE project incorporated an expert evaluation to ensure that the developed curriculum and OERs are grounded in current professional realities and future directions of digital health. By engaging UCCP's specialists in telemedicine, system design, and innovation for older adults and remote populations, the project sought to validate the educational content from a practitioner's perspective, bridging the gap between VET and real-world healthcare challenges.

To achieve this, field expert in telemedicine, digital health, system design, and innovation for older adults and people in remote areas was invited to review a selection of OERs developed within the INVITE project. His evaluation aimed to determine how effectively each resource addresses real challenges in digital health, particularly those related to accessibility, usability, digital literacy, and trust among older users.

Expert completed a structured questionnaire combining multiple-choice and open-ended questions. The quantitative part focused on the clarity of the identified problem, the relevance of the content to current and emerging needs, and the applicability of the proposed solutions in practice. In addition, experts assessed the innovation potential of each OER and the extent

to which it prepares VET students to think creatively and propose meaningful solutions for older adults in digital health contexts.

The qualitative questions invited expert to comment on the key strengths, weaknesses, and improvement opportunities of each resource. This feedback was invaluable for identifying both strong examples of innovative learning design and specific areas where OERs could be further refined to better connect with the realities of healthcare practice.

Overall, the expert evaluation added a strategic external perspective, ensuring that the INVITE outputs are not only pedagogically sound and contextually adaptable but also aligned with the priorities of the digital health sector and the needs of the ageing population.

The project strengthens the bridge between VET and evolving professional practice, supporting the long-term sustainability and impact of the INVITE training model.

6.1 Use of Expert Feedback

The expert feedback collected through this evaluation was systematically analysed and discussed within the project team. Key insights were used to refine and enhance developed materials and inform the design of the social innovation incubator that complements the INVITE programme. This ensured more substantial alignment with user needs and professional expectations in digital health for older adults. Suggestions from expert guided minor content revisions, including the provision of more practical case examples, greater emphasis on accessibility and trust in technology, and stronger connections between theoretical concepts and real-world applications.

In addition, the results informed teachers, helping educators better understand how to integrate curriculum and OERs into their teaching practice to encourage creativity, empathy, and problem-solving among students. The process also served as a model of collaborative curriculum improvement, illustrating how expert review can complement co-creation with teachers and students to produce sustainable, high-quality learning resources that remain relevant beyond the project's duration.

Based on the expert assessment, materials received predominantly positive feedback. The expert rated the materials as "very clear" or "clear" in identifying relevant problems and

challenges in digital health for older adults, including issues of accessibility, usability, literacy, and trust. The content was consistently deemed "highly relevant" to current and emerging needs in digital health for older populations. Expert generally agreed that the OERs provides realistic concepts, examples, and tasks applicable to supporting older adults in using digital health technologies, though with slight variations in the strength of this agreement. Regarding innovation, the consensus pointed to "moderate potential" for encouraging innovative approaches to improve digital health literacy among older adults. The most varied responses emerged around whether the materials adequately prepares VET students to think creatively and propose solutions, with expert opinions ranging between "neutral" and "agree," suggesting this area may benefit from strengthening. Overall, the expert evaluation indicates that the materials are well-designed, relevant, and practical, with room for enhancement in fostering creative problem-solving capabilities among students.

7.2. Set of recommendations from the expert assessment

Based on the expert assessment, the materials received highly positive evaluations regarding their relevance, clarity, and practical applicability in the field of digital health education. Expert particularly commended the materials for addressing real-world healthcare challenges and for their potential to enhance students' understanding of innovation in health technologies and care for older adults.

At the same time, several valuable recommendations were proposed to further strengthen the OERs' pedagogical depth, interdisciplinary scope, and future-oriented perspective. These recommendations, summarised below, were carefully considered and incorporated into the subsequent revision and updating of the OERs, ensuring that the materials remain aligned with current trends in digital health and continue to support innovative, practice-based learning across VET schools.

1. Integrate Emerging Technologies

- Include exposure to AI-powered tools (chatbots, voice interfaces, diagnostic tools)
- Introduce smart home technologies, sensors, and IoT devices
- Cover robotics and automation in healthcare settings

- Present remote diagnostic and telemonitoring tools
- Ensure innovation is explicit rather than implicit, focusing on future-facing technologies

2. Enhance Hands-On and Practical Learning

- Move beyond quiz-based formats to include practical exercises
- Implement mock-up design activities (e.g., students creating simple health apps for older adults)
- Add simulation exercises (mock phishing attempts, password audits, trust/consent discussions)
- Include prototype testing sessions directly with older adults
- Establish partnerships with companies producing digital health/telehealth tools for real-world demonstrations

3. Strengthen Interdisciplinary Collaboration

- Design teamwork exercises simulating collaboration between IT developers, healthcare professionals, policymakers, and caregivers
- Create role-play scenarios with students taking on different professional perspectives
- Emphasize that innovation in digital health requires cross-sector cooperation
- Include simulation exercises where students defend proposals to panels of "investors" and healthcare professionals

4. Implement Challenge-Based Learning

- Create mini-projects addressing specific barriers (digital literacy, technology anxiety, accessibility issues)
- Encourage students to improve existing apps for better accessibility
- Develop case competitions focusing on real-world problems
- Include co-design sessions with older patients

5. Expand Case Studies and Contexts

- Include diverse health and social contexts (dementia care, rural isolation, chronic disease management)

- Add healthcare-specific business cases (apps for dementia, telemonitoring in remote areas)
- Present case studies of data breaches specifically impacting older patients
- Use examples from various EU contexts showing cultural and linguistic adaptation

6. Address Systemic and Policy Dimensions

- Show how digital health services integrate across healthcare providers
- Explain how social incubator outputs can influence healthcare policy

- Include brief guidance on health regulations, reimbursement, and compliance requirements
- Present system-level perspectives on healthcare delivery

7. Provide Practical Ethical Implementation Tools

- Develop checklists for privacy, accessibility, and AI oversight
- Include templates and practical tools for implementing ethical principles
- Offer guidance on safeguarding older people in digital environments
- Show how to operationalize ethical principles in busy clinical workflows

8. Design for Appropriate Complexity Levels

- Ensure content is accessible for vocational school students without extensive prior knowledge
- Provide foundational explanations of business concepts before advancing to complex entrepreneurship topics
- Balance theoretical depth with practical applicability
- Scaffold learning from basic to advanced concepts

9. Promote Innovative Business Models

- Encourage hybrid models combining commercial viability with public funding or NGO partnerships
- Address how to reach disadvantaged groups through sustainable funding
- Include considerations of equity and accessibility in business planning

10. Emphasize User-Centered Innovation

- Maintain strong focus on empathy, dignity, and inclusion
- Integrate linguistic and cultural adaptation principles
- Address trust-building and consent management in real consultations
- Support students in developing solutions for low digital literacy and technology anxiety

7 Summary of the Multi-Level Assessment Approach

The multi-level assessment report brought together the main findings and conclusions from the internal, external, and expert evaluations, creating a comprehensive framework that examined the INVITE curriculum and OERs from complementary pedagogical, institutional, and professional perspectives.

Internal assessment fostered reflection, co-learning, and iterative improvement among participating teachers; external assessment verified the transferability and adaptability of the materials across different educational contexts; and expert assessment validated their alignment with current developments and emerging needs in digital health for older adults.

All insights gathered through these processes were systematically synthesised and integrated into the final revision of the curriculum and OERs, ensuring that the materials reflect a balanced combination of academic rigour, practical applicability, and user feedback. The final version of the curriculum and OERs therefore represents the consolidated outcome of the entire assessment cycle—pedagogically coherent, contextually adaptable, and ready for implementation across vocational medical schools.

This comprehensive and iterative approach not only enhanced the credibility and quality of the INVITE outputs but also built a sustainable community of practice among educators and professionals across Europe, providing a solid foundation for the programme's continued evolution and impact beyond the project's lifetime.