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Digital literacy enables up-to-date sleep medicine in inclusive healthcare

eSleep_dHealth

Document: Internal and External assessment of Social Innovation Toolkit for digital literacy and inclusive digital interventions in sleep medicine

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Summary

1. Introduction to the Social Innovation Toolkit assessment

Social innovation in higher education requires a structured yet flexible approach to guide universities in creating impactful programs. A Toolkit is a practical resource that distils best practices and actionable steps into a clear and accessible format. Unlike isolated case studies or academic papers, a well-designed Toolkit provides universities with a replicable and adaptable roadmap for launching social innovation incubators to bridge academic learning with real-world problem-solving.

Social innovation creates solutions to pressing societal challenges by leveraging interdisciplinary collaboration, entrepreneurship, and community engagement. Universities play a crucial role in this landscape by fostering the next generation of changemakers who can develop innovative approaches to **healthcare, sustainability, education, and digital transformation**. When implemented effectively, social innovation incubators are a platform for collaboration between students and faculty to co-create solutions that have a lasting societal impact.

A Toolkit is only as effective as its ability to be understood, implemented, and adapted in different university settings.

The assessment ensures that the Toolkit is not just conceptually strong but also practical, clear, and actionable for the diverse stakeholders who will use it. By systematically evaluating its content, structure, and usability, we can:

- Identify gaps or areas needing more detail.
- Ensure the guidance provided is comprehensive.
- Uncover potential institutional challenges that may hinder implementation.
- Gather feedback from academic, administrative, and innovation experts to improve clarity and real-world applicability.

Through this assessment, we aim to refine the Toolkit into a **valuable, evidence-based resource** that can drive meaningful change in universities.

2. Toolkit assessment design

The assessment of the Social Innovation Toolkit follows a structured, multi-stage process to ensure clarity, usability, and adaptability to different university contexts.

Here are the assessment stages:

1. **Internal general survey**
2. **External General Survey & Process Map exercise**

2.1. An internal general survey

An internal general survey will be conducted among project partners (internal assessment) to gather broad feedback on the Toolkit's comprehensiveness, identifying which sections are clear, partially covered, or lacking. The responses inform the process map analysis, where responsible partners evaluate each step in the incubator setup process, marking identified challenges and gaps.

Participants: One member of each partner institution team.

Based on this, the toolkit and general survey will go through improvement iterations and then we will conduct an external general survey.

2.1.1. An internal general survey question

Questions are designed to assess the **e-Sleep_dHealth Social Innovation Toolkit** across its chapters. They are **quantitative** (Likert-scale) and **qualitative** (open-ended) and complemented with **process map-specific** questions and open-ended suggestions for improvement.

Introduction & Understanding Social Innovation Incubators

Q1 How clearly does the Toolkit define social innovation incubators?
Very Clearly | Somewhat Clearly | Neutral | Somewhat Unclear | Unclear

Q2 How well does the Toolkit explain the importance of social innovation incubators in higher education?
Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q3 What aspects of the definition and importance of social innovation incubators could be better explained? *(Open-ended)*

Case Studies

Q4 How useful are the provided case studies in illustrating real-world applications of social innovation incubators?

Very Useful | Somewhat Useful | Neutral | Not Very Useful | Not at All Useful

Q5 Which case study do you find most relevant and why? *(Open-ended)*

Q6 What additional examples or details would improve this section? *(Open-ended)*

Designing the Social Innovation Incubator

Tools and Resources

Q7 How well does the Toolkit provide an overview of the necessary skills and competencies for running an incubator?

Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q8 Are there any key skills or competencies that should be added to this section? *(Open-ended)*

Needs Assessment Tools

Q9 How useful are the tools provided in the Toolkit for conducting a needs assessment?
Very Useful | Somewhat Useful | Neutral | Not Very Useful | Not at All Useful

Q10 Do you find the included design thinking and technology tools adequate for incubator planning?

Yes, they are adequate | They are somewhat adequate | No, they are not adequate

Q11 What additional needs assessment tools or approaches should be considered? *(Open-ended)*

Advocacy and Policy Resources

Q12 How well does the Toolkit cover advocacy and policy considerations for incubator implementation?
Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q13 What specific policy-related challenges do you foresee when implementing an incubator at your university? *(Open-ended)*

Evaluation and Monitoring Tools

Q14 How clear and applicable are the evaluation and monitoring tools provided in the Toolkit?
Very Clear & Applicable | Somewhat Clear | Neutral | Not Very Clear | Not at All

Q15 What additional evaluation or monitoring strategies should be included? *(Open-ended)*

Process Map-Specific Questions

Q16 Which incubator phases do you anticipate being the most challenging for students?

o ☐ Application Process
o ☐ Team Matchmaking
o ☐ Design Sprint Programme
o ☐ Virtual Collaboration
o ☐ Presentation Fine-Tuning

Q17 Why do you think this phase will be the most challenging?

o _____

Q18 Does the Toolkit provide sufficient guidance on structuring key activities like the application process, mentorship, and Demo Day?

o ☐ Yes, it is well-structured
o ☐ Partially, but some steps need more detail
o ☐ No, additional guidance is needed

Q19 If needed, which steps should be additionally described?

o _____

Q20 How well does the Toolkit address the steps for launching a Social Innovation Incubator at a university?

Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q21 How well does the Toolkit explain the needs assessment and readiness check process?

Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q22 How useful are the provided case studies in illustrating different incubator models?

Very Useful | Somewhat Useful | Neutral | Not Very Useful | Not Useful at All

Q23 How well does the Toolkit explain how to secure institutional support and funding?

Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q24 How well does the Toolkit outline recruitment and engagement strategies for students?

Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Q25 How well does the Toolkit address long-term sustainability and impact evaluation?

Very Well | Somewhat Well | Neutral | Not Very Well | Not at All

Open-Ended Feedback & Final Thoughts

Q26 If you could improve one section of the Toolkit, what would it be and how? *(Open-ended)*

Q27 What external resources (guidelines, networks, funding sources) should be linked in the Toolkit to enhance its usefulness? *(Open-ended)*

Q28 Do you see any institutional barriers that might make it difficult to implement this Toolkit? *(Open-ended)*

Next Steps & Use of Survey Data

- Responses from **internal project partners** will first refine the Toolkit and survey questions before external stakeholders participate.
- The **external general survey** will gather perspectives from a broader audience, leading to focused discussions in the **process map review**.

2.2. An external general survey

An external general survey will gather broad feedback from university staff involved in social innovation, curriculum design, and administrative processes.

Its goal is to evaluate the Toolkit's clarity, usability, and completeness by asking respondents to rate different sections on their level of detail and practical applicability. Additionally, open-ended questions allow participants to highlight missing content, potential challenges, and areas needing further clarification. In short, the survey helps us understand how well the guidance aligns with real-world university contexts.

Regarding the questions related to the process map, a structured framework for assessing whether each stage of establishing a social innovation incubator is clearly described in the Toolkit, participants are asked to mark steps as: well-covered, partially covered, or not covered, while indicating which phases they find most challenging. The main difference between this general survey and the first internal one is that we also ask for specific institutional context. This helps differentiate between steps that **need refinement** within the Toolkit and those that are **inherently institution-specific**, such as administrative hurdles or resource constraints, which may require external guidance beyond the Toolkit's scope.

Participants: To ensure a comprehensive evaluation of the Toolkit we will gather feedback from a diverse group of university stakeholders with different roles and perspectives. Below is a recommended breakdown of essential evaluators and the number of representatives per role:

Academic & Administrative Staff will ensure the Toolkit aligns with institutional needs, feasibility, and strategic goals.

• Faculty Members (2-3) – Professors or lecturers from relevant fields

• University Leadership (1-2) – Dean, vice-dean, vice-rector

• Administrative Staff (1-2) – Those responsible for accreditation, funding, legal aspects, and university policies.

Incubator & Innovation Stakeholders will assess the practicality of implementing the Toolkit within a university innovation ecosystem.

• Incubator/Entrepreneurship Center Leads (1-2) – Those managing existing innovation hubs, startup programs, or service-learning projects.

• Industry/Community Partners (1-2) – Representatives from external organizations that could collaborate with students.

Student & Early-Career Perspectives will ensure the Toolkit meets learner needs and fosters engagement.

• Students (2-3) – From different disciplines, ideally with some experience in innovation, service-learning, or extracurricular activities.

• Alumni or Recent Graduates (2-3) – Those who have participated in similar programs and can assess relevance.

Technical & Digital Experts: given the Toolkit's focus on digital sleep medicine and social innovation, specialized feedback is necessary.

• Digital Health Experts (1-2) – Specialists in health informatics, telemedicine, or AI-driven solutions.

This step ensures that a wide range of perspectives—faculty, administrators, and program coordinators—are captured before moving to more in-depth evaluation methods.

3. Refinement & Iterative Improvement

We will incorporate findings from the internal and external survey into the Toolkit, improving clarity, usability, and adaptability. The core project team responsible for updating the Toolkit will identify key action points and adjust or expand Toolkit sections based on feedback. Ensure changes maintain the balance between structure and flexibility for different university contexts.

4. Main points from Internal and External Assessment Survey: Recommendations to Maximize Toolkit

The key improvements that are recommended in the survey responses cover the following topics:

1. Evaluation and monitoring (the weakest section)

2. Long-term Sustainability - including lifecycle models and post-project support structures

3. Case Studies - expanding with concrete metrics, student pathways, and success stories

4. Implementation Guidance - detailed timelines, Demo Day planning, and mentorship structures

4.1. Recommendation for Definition and Conceptual Framework

Current Issues:

- Unclear definition of social innovation incubators in digital health/sleep medicine context
- Insufficient distinction from traditional innovation approaches

Specific Recommendations:

- Add a dedicated subsection (1.2) titled "Social Innovation Incubators vs. Traditional Innovation Models" with a comparison table highlighting key differences
- Include 2-3 sentences in the introduction emphasising technology's enabling role rather than its driving role

4.2. Recommendations for Case Studies Enhancement

Current Issues:

- Insufficient detail on implementation and outcomes
- Missing student engagement pathways
- Lack of measurable impact data

Specific Recommendations:

UniStart Expansion:

- Add a detailed process flow diagram showing the Design Thinking method implementation
- Provide student testimonial quotes (2-3 examples)

SPARK Finland Enhancement:

- Add specific examples of diagnostics/medicines developed

4.3. Recommendations for Skills and Competencies Section

Current Issues:

- Core skills list may overwhelm students
- Missing digital literacy components
- Polysomnography section assumes prior knowledge

Specific Recommendations:

Restructure core skills (3.1.1) into "Essential" and "Desirable" categories

Include digital literacy competencies:

- Basic data analysis tools
- Digital health platform navigation
- Remote collaboration technologies

Add leadership skills subsection with specific competencies:

- Team coordination in virtual environments
- Stakeholder communication
- Conflict resolution

4.4. Recommendations for Needs Assessment Tools

Current Issues:

- Limited stakeholder engagement approaches
- Missing health-specific assessment tools
- Lack of participatory frameworks

Specific Recommendations:

- Add specialized health assessment tools:
  - Digital literacy assessment scales

    - Health technology adoption readiness surveys
- Create stakeholder mapping template with engagement strategies
- Include participatory assessment framework with step-by-step implementation guide
- Update Table 3 Technology Tools:
    - Add external links to tutorials/resources for Figma, Stormboard, FigJam

4.5. Recommendations for Policy and Implementation Challenges

Current Issues:

- Insufficient guidance on policy navigation
- Missing institutional integration strategies
- Lack of practical lobbying/advocacy tools

Specific Recommendations:

- Provide links to external resources for those who wish to understand the policy aspect better
- Highlight that Toolkit cannot address unique administrative procedures in different universities
- Include "Management Engagement Strategies":
    - Incubator value proposition frameworks

4.6. Recommendations for Evaluation and Monitoring Tools (Priority Improvement Area)

Current Issues:

- Lowest-performing section according to feedback
- Missing longitudinal tracking
- Insufficient feedback mechanisms

Specific Recommendations:

Create KPI dashboard template linked to incubator goals:

    - Student engagement metrics
    - Innovation output measures
    - Partnership development indicators
    - Long-term impact assessments

Add longitudinal study framework:

- 6-month, 1-year, and 3-year follow-up protocols
- Alumni tracking systems
- Impact measurement tools

Include feedback loop mechanisms:

- Regular participant survey templates
- Stakeholder feedback collection tools

4.7. Recommendation for Implementation Activities Structure

Current Issues:

- Missing Demo Day guidance
- Insufficient mentorship phase planning

Specific Recommendations:

- Provide activity timelines (weekly/monthly breakdown)
- Resource requirement specifications for each activity

- **Create Demo Day planning guide**:
  - Evaluation criteria rubrics
- **Develop mentorship program structure**:
  - Mentor recruitment and training modules
  - Progress tracking tools
- **Add student onboarding process**:
  - Welcome and orientation package templates
  - Expectation-setting frameworks

4.8. Student Challenge Management

Current Issues:

- Virtual collaboration difficulties
- Team dynamics problems
- Presentation skill gaps

Specific Recommendations:

Provide links to external resourses on:

- Cultural sensitivity guidelines

- Digital communication best practices
- Team-building activities for remote teams
- Progress tracking tools

4.9. Recommendations for Long-term Sustainability (Critical Improvement Area)

Current Issues:

- Weakest-scoring area
- Missing lifecycle models
- No post-project sustainability guidance

Specific Recommendations:

- Develop "Incubator Lifecycle Management Model":
  - Start-up phase protocols (months 1-6)
  - Growth phase strategies (months 6-18)
  - Maturation phase planning (18+ months)
  - Evolution/pivot guidelines
- Create "Post-Project Sustainability Framework":
  - Alumni network development
  - Ongoing support structures
  - Resource transition planning
  - Impact continuation strategies
- Add funding sustainability models:
  - Diversified funding source strategies
  - Revenue generation possibilities
  - Partnership-based sustainability approaches