**1. Codebook: Design Mechanisms** (see also Wiese et al., 2020)

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|  | **Design Mechanism** | **Details** | **Literature** |
| M1 | **Optimal Challenge:** Ensure challenges posed by the activity match the user's current level of skills. | * Break down goals into subgoals * Adapt to user’s evolving skills | * Michie et al. (2011; 2013) * Peters (2023) |
| M2 | **Focus Attention:** Support users to focus on the activity and withstand distractions. | * Simplify the interface * Minimize distractions * Affirm commitment | * Peters (2023) |
| M3 | **Education:** Enhance knowledge and understanding needed to perform the activity. | * Instructions | * Michie et al. (2011; 2013) |
| M4 | **Training:** Support the user to build up necessary skills to perform the activity. |  | * Michie et al. (2011; 2013) |
| M5 | **Goal Setting:** Define favorable goals as outcomes of the activity. | * Specific, explicit goals * Realistic goals * Flexible goals * Intrinsic goals * Approach-oriented goals | * Sheldon & Elliot (1999) * Locke & Latham (2006) * Pohlmeyer (2017) |
| M6 | **Action Planning:** Support detailed planning of the activity in terms of duration, frequency, context, intensity. | * Support daily integration * Support ubiquity & accessibility * Support flexible timing | * Michie et al. (2011; 2013) * Schwarzer (1992) * Lyubomirsky & Layous (2013) |
| M7 | **Social Support:** Provide support from close social contacts when performing the activity. | * Provide opportunities to connect * Emphasize community * Foster emotional support * Social proof | * Michie et al. (2011; 2013) * Lyubomirsky & Layous (2013) * Peters (2023) |
| M8 | **Prompts:** Define a stimulus to trigger the activity. | * Trigger interest * Reminders * Social prompts | * Michie et al. (2011; 2013) |
| M9 | **Persuasion:** Use communication to prompt positive or negative feelings or trigger the activity. | * Guidance rather than directives * Caveat: threats, pressure | * Michie et al. (2011; 2013) |
| M10 | **Rewards:** Provide positive incentives for showing effort and/or progress in performing the activity. | * Caveat: extrinsic rewards * Caveat: technology addiction | * Michie et al. (2011; 2013) |
| M11 | **Feedback:** Provide feedback on the performance of an activity. | * Indicate progress * Highlight achievements * Showcase positive impact * Provide (early) positive feedback | * Michie et al. (2011; 2013) * Cohn & Frederickson (2017) * Proyer et al. (2015) * Peters (2023) |
| M12 | **Self-Monitoring:** Enable users to track the outcome of an activity. | * Usage statistics * Awareness of achievements | * Michie et al. (2011; 2013) |
| M13 | **Personal Relevance:** Enable users to tailor the activity to their goals and values. | * Personalization/customization * Choice over content | * Lyubomirsky & Layous (2013) |
| M14 | **Efficacy Beliefs:** Promote users’ belief in their ability to perform the activity. |  | * Lyubomirsky & Layous (2013) * Schwarzer (1992) * Bandura (1977) |
| M15 | **Modelling:** Introduce a role model to aspire to or imitate. | * Demonstrate “good” practice | * Michie et al. (2011; 2013) |
| M16 | **Variation:** Allow to practice the activity in new or varied ways. | * Maintain effort | * Lyubomirsky & Layous (2013) * Sheldon & Lyubomirsky (2012) * Bao & Lyubomirsky (2014) |
| M17 | **Joy of Use:** Make the activity enjoyable. | * Make activity fun * Sensory delight * Aesthetics, visual design | * Hassenzahl et al. (2003) |
| M18 | **Self-Reflection:** Provide opportunities to review and make sense of (past) experiences to provide insight and inspire future action. | * Provide personal insight * Slow down & pause * Foster deep processing | * Baumer et al. (2014) |
| M19 | **Self-Expression**: Enable people to communicate and share personal feelings. | * Share publicly or privately * Caveat: privacy | * Gonsalves et al. (2023) |

**2. Codebook: Drivers of Behavior** (see also Wiese et al., 2020, based on Michie et al., 2011; 2013)

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|  | **Driver of Behavior** | **Examples** |
| DB1 | **Capability:** A person’s psychological (e.g., emotional, cognitive, social) and physical ability (e.g., physical strength) to perform the activity. | * Skills and knowledge * Memory or attention capacity * Cognitive & interpersonal skills * Behavior regulation ability |
| DB2 | **Motivation:** Intrapersonal processes, including goals, values and deliberate decision making, that “stimulate”, “encourage” or “motivate” the activity. | * Link to personal goals, intentions * Beliefs about one’s capability * Beliefs in positive consequences |
| DB3 | **Opportunity:** External or context factors that enable or prompt behavior. | * Having (enough) time * Remember to perform the activity * Having social support * Having access |

**3. References**

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