BLOOM

BLOOMING MENTAL WELLBEING AND SOCIAL INCLUSION
THROUGH OUTDOOR PHYSICAL ACTIVITY

PREPARATORY RESEARCH REPORT

RESEARCH, REFLECTIONS AND GOOD PRACTICES

Co-funded by the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

BLOOM
BLOOMING MENTAL WELLBEING AND SOCIAL INCLUSION THROUGH OUTDOOR PHYSICAL ACTIVITY

BLOOM PROJECT CONSORTIUM

Associação Animam Viventem
Project Coordinator | Cascais, Portugal

STEP Institut
Project Partner | Ljubljana, Slovenia

Contact information Project Coordinator:
Associação Animam Viventem
Contact Person: Ms. Inês Gomes Calado
Email: animam.viventem@gmail.com

Co-funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Project Reference: 2023-2-PT01-KA210-ADU-000182287

Table of Contents

ABOUT THE BLOOM PROJECT

BLOOM: Blooming Mental Well-being and Social Inclusion through Outdoor Physical Activity

BLOOM is a European project that brings together organisations from Portugal and Slovenia through the Erasmus+ Programme for Adult Education. Over 18 months, and with the support of the European Commission, BLOOM is dedicated to helping older adults thrive—mentally, emotionally, physically and socially.

At its heart, BLOOM believes in the power of movement, nature, and connection. The programme uses outdoor physical activities not only to strengthen the body, but to stimulate the mind, lift the spirit, and bring people together. By combining gentle exercise with fun cognitive challenges and shared experiences, BLOOM offers a simple, inclusive, and joyful way to support mental well-being and social inclusion in later life.

It's about staying active, staying connected — and continuing to bloom at every age.

INTRODUCTION

This report was prepared to ground the BLOOM project in solid evidence before we step into the field. Our aim is to design outdoor, movement-based activities that genuinely support older adults' mental wellbeing, neurocognitive stimulation and social inclusion—and prove they work. To do that, we first mapped the science on ageing, cognition and mental health, reviewed which outdoor activities deliver measurable benefits, and gathered good practices from Europe and beyond. We then translated these insights into practical, low-threshold activities and community events that are enjoyable, inclusive and feasible for diverse abilities and settings.

The report is structured to move from why to how: an overview of needs and stressors in later life; evidence-backed activity options; a set of proven practices to learn from; and an explanation of how we used those insights. The result is an evidence-based toolbox that helps partners run meaningful sessions, evaluate change and adapt the programme to local contexts—including intergenerational and international participation. In short: we did the homework so communities can do the heart-work.

OVERVIEW OF MENTAL, COGNITIVE AND SOCIAL WELLBEING AMONG OLDER ADULTS

Neurocognitive stimulation refers to activities and interventions designed to enhance cognitive functioning and delay the onset or progression of neurodegenerative diseases. This includes exercises and activities that challenge the brain, such as puzzles, memory games, and learning new skills. In the context of adults aged 55 and older, neurocognitive stimulation is significant because it can help maintain cognitive functions, improve quality of life, and potentially delay the onset of conditions like Alzheimer's disease and other forms of dementia.
Examples: Attention, Perception, Comprehension, Memory, Language, Processing Speed, Orientation, Reasoning, Praxis, Gnosia, Executive Control, Calculation

Mental wellbeing encompasses emotional, psychological, and social aspects of an individual's health. It involves the ability to manage stress, maintain fulfilling relationships, and enjoy life. For older adults, maintaining mental wellbeing is crucial as it impacts overall health, quality of life, and longevity. Mental wellbeing includes the presence of positive emotions, life satisfaction, and a sense of purpose.

Social wellbeing refers to the extent of an individual's integration into a social network, including the presence of supportive and meaningful relationships. For older adults, social wellbeing is significant because social interactions can prevent feelings of loneliness and isolation, which are common in this age group. Engaging in community activities, maintaining friendships, and staying connected with family are essential components of social wellbeing.

Older adults face several unique stressors and challenges that impact their mental, cognitive, and social wellbeing, including:

- **Health-related issues:** Chronic conditions (e.g., cardiovascular disease, diabetes, arthritis), sensory losses (hearing/vision), pain and fatigue, and mobility limitations reduce independence and increase reliance on caregivers or services. This loss of autonomy can heighten stress, lower self-efficacy, and restrict access to social and recreational activities, compounding isolation. Accessible, low-impact outdoor movement and graded goals help rebuild confidence and function.

- **Cognitive decline:** Normal ageing can bring slower processing speed, attention lapses, word-finding difficulties, and weaker working and episodic memory. When these changes interfere with daily tasks or learning new skills, people may withdraw from social roles to avoid embarrassment, which further reduces cognitive stimulation and accelerates decline. Regular aerobic activity, dual-task exercises, and structured cognitive practice can mitigate these effects.

- **Loss and bereavement:** The death of spouses, siblings, and close friends can trigger grief, loneliness, and disruptions to daily routines and health behaviours. Bereavement may also reduce motivation to be active, impair sleep, and increase depressive symptoms, all of which negatively affect cognition and physical health. Gentle group activities with a predictable rhythm offer social support while respecting emotional pace.

- **Social isolation:** Retirement, mobility barriers, transportation gaps, and dispersed families shrink everyday contact. Fewer interactions reduce opportunities for emotional regulation, practical help, and cognitive stimulation, increasing risks of depression and faster functional decline. Regular, local, and welcoming group sessions (e.g., walking circles) rebuild routine contact and belonging.

- **Economic stress:** Fixed incomes and rising living and healthcare costs create persistent worry, leading to postponing care, reduced participation in fee-based programmes, and poorer diet or housing choices. Chronic financial strain elevates stress hormones, undermining mental and physical health. Free, low-threshold, nearby activities and information about entitlements lower barriers to participation.

- **Identity and purpose:** Leaving paid work or caregiving roles can unsettle self-concept and daily structure. Without meaningful roles, people may experience apathy, reduced goal-setting, and lower engagement in cognitively or socially enriching pursuits. Programmes that invite contribution—peer support, mentoring, co-leading activities—help restore purpose and agency

ACTIVITIES FOR MENTAL, COGNITIVE AND SOCIAL WELLBEING IN OLDER ADULTS

Based on current research, below you will find a selection of :

OUTDOOR PHYSICAL ACTIVITIES THAT PROMOTE MENTAL WELLBEING IN OLDER ADULTS:

Walking in nature

Finlay, Franke, McKay, and Sims-Gould (2015) discovered that natural environments significantly contribute to the mental wellbeing of older adults. Walking in natural environments, such as parks, forests, and along rivers, is highly beneficial for mental wellbeing. It reduces stress, improves mood, and provides cognitive benefits. Regular walks in green and blue spaces can help maintain mental health and delay cognitive decline.

It is generally believed that walking is the most suitable physical activity for older adults, and the quantification of walking can be expressed in steps or distance, in addition to walking time (Huang, Huang & Wu, 2022).

Gardening

Gardening combines physical activity with exposure to nature. It involves moderate exercise, which helps reduce anxiety and depression, while the act of nurturing plants can instill a sense of purpose and satisfaction, enhancing feelings of accomplishment and self-efficacy.

Frisbee

Playing frisbee helps reduce stress and improve mood by triggering the release of endorphins through physical activity, while the social interactions during play further enhance mental well-being. The game also improves cognitive function by involving strategic thinking, quick decision-making, and concentration, which enhances mental sharpness. Additionally, frisbee fosters social connections, teamwork, and communication skills, which are essential for emotional health and reducing loneliness in older adults.

Bodyweight exercises

Exercises such as squats, lunges, push-ups, and planks, which can be done outdoors, offer significant benefits for older adults. These bodyweight exercises are particularly beneficial as they mimic real-life movements, improving functional fitness and helping maintain muscle mass, which is crucial in preventing age-related muscle loss

(sarcopenia). Engaging in these activities can enhance core stability and balance, which are essential for preventing falls and injuries. Regular physical activity, including bodyweight exercises, also triggers the release of endorphins, which help reduce stress and improve mood.

Yoga

A meta-analysis of randomized controlled trials concluded that yoga significantly improves health-related quality of life and mental well-being in older adults. This includes better mobility, reduced depression symptoms, and enhanced overall mental health (Sivaramakrishnan et al., 2019).

Studies have also indicated that yoga is effective in lowering stress and anxiety levels in older adults. For example, a pilot study showed that chair yoga significantly reduced pain and improved physical function among older adults with osteoarthritis, contributing to better mental health outcomes (Dillon, Durham, Urban and Sheffield-Moore, 2020).

Stretching

Regular stretching routines improve flexibility and reduce muscle tension, requiring nothing more than a flat surface. Stretching has been shown to reduce symptoms of depression and anxiety among older adults. This is partly due to the increased serotonin levels induced by stretching, which helps stabilize mood and reduce stress. People experience better overall mental wellbeing and reduced depressive symptoms. Stretching can help reduce muscle tension and promote relaxation, which in turn helps decrease mental stress. This is particularly beneficial for older adults who often face chronic stress and its associated health issues.

OUTDOOR PHYSICAL ACTIVITIES THAT SUPPORT NEUROCOGNITIVE STIMULATION IN OLDER ADULTS:

All aerobic activities (walking, jogging, treadmill, cycling)

A meta-analysis of 29 studies involving 2049 participants and 234 effect sizes found that aerobic exercise training resulted in modest improvements in various cognitive functions. Specifically, individuals who participated in aerobic exercise showed improvements in attention and processing speed (effect size g=0.158g = 0.158g=0.158), executive function (g=0.123g = 0.123g=0.123), and memory (g=0.128g = 0.128g=0.128), all with statistically significant results. However, the effects on working memory were less consistent.

The study (Champan et. al., 2013) found that engaging in aerobic activities such as cycling and treadmill walking for three 60-minute sessions per week, led to improvements in immediate and delayed memory, increased resting cerebral blood flow in the anterior cingulate region, and enhanced cardiovascular fitness (VO2 max).

Yoga

Research has shown that yoga can improve various cognitive functions and mental health aspects in older adults. For instance, a systematic review (Karmacoska et. al., 2023) found that yoga can enhance memory function and reduce depressive symptoms in older adults with mild cognitive impairment (MCI) and dementia. Yoga practice has also been associated with positive changes in brain structure and function. Research involving neuroimaging has demonstrated that yoga can lead to neurochemical and neuroanatomical plasticity, which supports better memory and executive function in older adults.

Study (Chan, Deng, Wu, & Yan, 2019) found that meditation and mind–body exercises improve cognition in the elderly people (SMD = 0.34, 95% CI: 0.19 to 0.48), but the cognition-enhancing effects depend on the type of exercise. In addition, cognitive performance is only improved when the length of intervention is longer than 12 weeks, exercise frequency is 3–7 times/week, or duration of an exercise session is 45–60 min/session.

Combination of physical activity and cognitive training

Griffiths et. al. (2019) did a study with a goal like the BLOOM project. It combined physical movement activity and multifaceted cognitive training:

Physical Movement Activity (PMA)

The PMA involved body movements, synchronized with music to promote physical and cognitive engagement among older adults. It was divided into three stages: warm-up, aerobic exercise, and relaxation. Slow music was played at the beginning of the movement, faster music in the middle, and relaxing music in the last period. In 24 sessions, the time spent in the physical activity gradually increased. In weeks 1–4, the session lasted 20 min (the 1st period took 5 min, the middle one took 10 min, and the last one took 5 min); in weeks 5–8, it took 25 min (6, 12, and 7 min, respectively); and in weeks 9–12, it took 30 min (7, 15, and 8 min, respectively). Activities included counting, stepping, and coordinated limb movements to enhance physical fitness and cognitive function.

Multifaceted Cognitive Training (MCT)

The MCT comprised 24 sessions over 12 weeks, focusing on attention, memory, and executive functions. Sessions included activities like attention training (visual/auditory tasks), memory exercises (recall, chunking, matching games), and executive function training (planning, organization, daily tasks). One session lasted 60–90 min, and consisted of attention training for 20 min, memory training for 20 min, and executive function training for 20–50 min. The objectives of attention training were to enhance visual, auditory, and combined visual and auditory attention. Walking and remembering surrounding objects quickly, table-top activities with picture cards and

alphabet cards, color recognition, identifying details in similar photographs, storytelling, and answering and word recognition in song were used. The objectives of memory training were to improve immediate and delayed recall, working memory, and semantic memory. Photographs of famous people, animal and vegetable cards, phone numbers, news, stories, and household pictures were used. It also included a matching game, a memory strategy, a method of loci, a chunking technique, and memory group games such as taking messages from a friend. In the training for executive function, the objectives were to increase ability in complex activities, learning, planning, and organization. Telephone use, meal preparation, cooking, arranging transportation, housekeeping and laundry, productive and creative activities such as painting, bamboo-weaving and table-top gardening, money management, and shopping from a list were included.

The study results indicated that participants in the intervention group experienced significant improvements in cognitive functions. Specifically, attention, as measured by the Trail-Making Test A, showed significant improvement ($p = 0.018$). Memory improvements were observed in Digit Span Sequence, Letter Verbal Fluency, Category Verbal Fluency, and both immediate and delayed recall ($p < 0.05$). Executive function also significantly improved ($p = 0.029$) in the intervention group. In contrast, the control group showed limited improvements, mainly in delayed recall, underscoring the effectiveness of the combined physical and cognitive training program.

OUTDOOR PHYSICAL ACTIVITIES PROMOTE SOCIAL INCLUSION AMONG OLDER ADULTS:

A Systematic Literature Review and Reflections on Evidence on the Benefits of Outdoor Sports for Society, showed that besides the more functional perspective of ageing, outdoor sports also provide a rich resource for active and happy ageing [32,47,76,102] with effects like positive engagement, revitalization, tranquility, and increased mood in the elderly.

As outdoor sports often involve groups or settings where it is necessary to work together, they also lead to various interpersonal or group benefits. Interpersonal development was characterized by increased communication skills, cooperation and social interaction, enhanced relationships, responsibility, empathy, engagement, social trust, and better overall group cohesion.

Outdoor physical activities facilitate social interactions and community building by bringing individuals together in a shared environment, thus creating opportunities for forming and strengthening social networks. Regular participation in group activities, such

as walking groups encourage older adults to interact regularly, reducing feelings of loneliness and isolation. These activities foster a sense of belonging and mutual support.

Activities that are easy to learn and adaptable to various physical abilities can include a broader range of participants, promoting inclusivity. Outdoor Physical Activities can be modified to accommodate different skill levels and physical limitations, ensuring all participants feel capable and included. This inclusivity helps break down barriers to participation and fosters a more cohesive group dynamic.

Regularly scheduled activities provide structure and routine, which are particularly beneficial for older adults in maintaining social connections. Scheduled group activities create a predictable pattern that older adults can rely on for regular social interaction. This routine helps establish and maintain social ties, which are crucial for social inclusion. The consistency of these groups provides a reliable source of social contact and support.

Outdoor physical activities can play a crucial role in promoting social inclusion among older adults by fostering social interactions, ensuring inclusivity through adaptable formats, and offering routine and consistency. By understanding and leveraging these mechanisms, communities can better design and implement programs that enhance social inclusion and overall well-being for older adults.

GOOD PRACTICES

As part of the preparatory phase of the BLOOM project, each partner researched, identified and analysed good practices related to the promotion of mental well-being, neurocognitive stimulation, and social inclusion through (outdoor) physical activity. These examples served as a source of inspiration and practical insight to support the design of the BLOOM Programme.

Importantly, the research of practices was not limited to projects working exclusively with older adults. Some focused on other target groups, demonstrating transferable methods and approaches that can be adapted to promote healthy ageing. This broader perspective allowed us to consider inclusive strategies, innovative formats, and successful engagement techniques that respond to real community needs.

By exploring a range of national and international experiences, we gathered valuable lessons on what works, why it works, and how it can be tailored to support cognitive and emotional well-being in later life. These practices helped shape both the structure and the spirit of BLOOM.

‘OUTDOOR MOTOR-COGNITIVE EXERCISE PROGRAMME’

RESPONSIBLE ENTITY	Institute of Human Movement Science and Health, Faculty of Behavioral and Social Sciences, Chemnitz University of Technology		
COUNTRY	Germany	**YEAR(S)**	2023-2024
TOPICS APPROACHED	Physical activity, cognitive health, mental wellbeing, social inclusion, healthy aging, community health promotion.		
WEBSITE	https://www.mdpi.com/2075-4663/12/2/49		
BRIEF DESCRIPTION	The project promoted physical and cognitive health in older adults (60+) through a 12-week, low-barrier outdoor training programme with 24 sessions. Activities combined coordination, strength, and endurance exercises with integrated cognitive tasks such as memory games and dual-task training. Delivered by sports science professionals with rehabilitation expertise, the programme supported mental well-being through social interaction, enjoyment, and reduced symptoms of depression. Cognitive stimulation was achieved by combining movement with progressively challenging mental tasks. Social inclusion was fostered through free, accessible group sessions in community spaces, encouraging long-term engagement and connection.		
SUCCESS FACTORS OF THE PROJECT	The program was low-threshold and free, making it accessible to a broad demographic of older adults. It provided significant improvements in both physical and cognitive health, essential for maintaining independence and quality of life in older age. By promoting social interactions and community involvement, the program enhanced social inclusion and mental wellbeing.		

‘ENJOY: SENIORS EXERCISE PARK PROJECT’

RESPONSIBLE ENTITY	The National Ageing Research Institute (NARI)		
COUNTRY	Australia	**YEAR(S)**	Since 2022
TOPICS APPROACHED	Physical health, cognitive function, social interaction.		
WEBSITE	https://www.nari.net.au/enjoy https://www.nari.net.au/enjoy-imp-act		
BRIEF DESCRIPTION	The ENJOY project created outdoor exercise parks tailored to older adults, offering structured, supervised sessions to support physical and cognitive health. Participants followed personalised exercise plans that included strength, balance, coordination, and mobility activities using specialised equipment. Sessions typically lasted 60 minutes, two to three times per week. Delivered by qualified exercise physiologists and physiotherapists, the programme supported mental well-being through enjoyable outdoor activity, reduced stress, and a sense of achievement. Neurocognitive stimulation was encouraged through complex, progressive movements that required planning and coordination. Social inclusion was promoted through group sessions that built friendships, community bonds, and accessible participation for all.		
SUCCESS FACTORS OF THE PROJECT	The use of specialized outdoor equipment and structured, supervised programs ensured that participants received appropriate physical and cognitive challenges. The community-based approach enhanced social interactions and support networks.		

‘AKTIVEN DAN (ACTIVE DAY)’

RESPONSIBLE ENTITY	Zavod Aktivna Starost (Institute Active Old Age)		
COUNTRY	Slovenia	**YEAR(S)**	Ongoing
TOPICS APPROACHED	Cognitive training, Physical exercise.		
WEBSITE	https://mind-gait.esenfc.pt/ https://citechcare.ipleiria.pt/files/2018/06/MindGaitV2.pdf		
BRIEF DESCRIPTION	Aktiven dan is a holistic programme for older adults that combines physical, cognitive, and social activities in twice-weekly sessions. Each session includes personalised exercise routines, targeted cognitive workshops, and shared meals to promote well-being and connection. Delivered by specialists from Kinezio Klinika, the programme supports mental well-being through activities that enhance cognitive resilience and provide a sense of purpose. Neurocognitive stimulation is achieved through structured memory and cognitive skills training. Social inclusion is fostered by shared routines such as coffee breaks and communal lunches, encouraging meaningful interaction and community belonging.		
SUCCESS FACTORS OF THE PROJECT	The combination of physical, cognitive, and social activities comprehensively improves the wellbeing of older adults, making it an effective model for active aging.		

‘PROJETO CAATIVAS’

RESPONSIBLE ENTITY	Câmara Municipal Mealhada		
COUNTRY	Portugal	**YEAR(S)**	Ongoing
TOPICS APPROACHED	Cognitive training.		
WEBSITE	https://www.cm-mealhada.pt/menu/697/projeto_caativas		
BRIEF DESCRIPTION	Implemented by Mealhada Municipality, Projeto CAAtivas offers weekly sessions to promote cognitive stimulation and active ageing among older adults. The programme focuses on maintaining autonomy and delaying cognitive decline through structured exercises that target memory, attention, and executive functions. Designed as a psychotherapeutic intervention, it supports mental well-being by enhancing functional capacity and fostering successful ageing. Activities aim to boost brain plasticity, reinforce social roles, and prevent the onset of dementia—contributing to both individual well-being and greater social inclusion.		
SUCCESS FACTORS OF THE PROJECT	The success of Projeto CAAtivas lies in its consistent, preventive approach, offering regular cognitive stimulation in a supportive environment, with a strong focus on autonomy and brain health. Its integration within municipal services ensures accessibility and sustainability, making it a valuable reference for community-based interventions targeting cognitive ageing.		

‘MIND & GAIT’

RESPONSIBLE ENTITY	Escola Superior de Enfermagem de Coimbra and a Consortium funded by Portugal 2020		
COUNTRY	Portugal	**YEAR(S)**	2017-2019
TOPICS APPROACHED	Cognitive training, Physical exercise.		
WEBSITE	https://mind-gait.esenfc.pt https://citechcare.ipleiria.pt/files/2018/06/MindGaitV2.pdf https://mind-gait.esenfc.pt/mindgait/physical-exercise/1/showContent		
BRIEF DESCRIPTION	Mind & Gait is a transdisciplinary project that integrates cognitive stimulation and physical exercise into a single intervention aimed at supporting older adults experiencing frailty. It also includes the development of an innovative self-locking walker to enhance safety during movement. The programme brings together expertise from nursing, sports science, occupational therapy, engineering, psychology, and social sciences—delivered by a network of institutions including the Nursing School of Coimbra, Polytechnic Institutes of Leiria, Coimbra and Santarém, and local social service providers. The project combines practical training with technological development and offers a freely available eBook with resources for health professionals and caregivers.		
SUCCESS FACTORS OF THE PROJECT	Mind & Gait stands out for its integrated, transdisciplinary approach, merging health, technology, and social care to address geriatric frailty from multiple angles. Its combination of physical and cognitive interventions, paired with assistive technology, offers a comprehensive, forward-thinking model for active and safe ageing.		

‘COGNIFIT’

RESPONSIBLE ENTITY	CogniFit Inc.		
COUNTRY	USA	**YEAR(S)**	Ongoing
TOPICS APPROACHED	Cognitive training.		
WEBSITE	https://www.cognifit.com/		
BRIEF DESCRIPTION	CogniFit is a digital platform offering scientifically validated tools for the assessment and training of cognitive functions. It evaluates over 20 cognitive abilities—such as memory, attention, coordination, reasoning, and perception—through a combination of questionnaires and interactive tasks. The system provides users and professionals with clear, downloadable reports using performance metrics like time, accuracy, and response patterns. CogniFit also offers short, engaging training sessions (10–15 minutes), designed to stimulate and reinforce cognitive processes. With a user-friendly interface available via platform and app, CogniFit serves as a rich source of inspiration for digital or individual cognitive activities.		
SUCCESS FACTORS OF THE PROJECT	CogniFit’s strength lies in its scientific foundation, digital accessibility, and user-friendly design. Its structured evaluations and adaptable training modules make it a valuable tool for tracking and enhancing cognitive performance in a personalised and motivating way—especially useful when integrating technology into cognitive stimulation programmes.		

FROM RESEARCH TO PRACTICE

This section shows, step by step, how we turned our research into a practical programme you can run tomorrow. We took the evidence and shaped clear goals, a simple session flow, concrete activities, and built-in options for different abilities. Below, each paragraph explains one design choice and how it came from the research.

From needs to targets: We translated the mapped late-life stressors (health limits, cognitive slowing, bereavement, isolation, financial strain, purpose loss) into clear programme objectives on mental wellbeing, neurocognitive stimulation, physical activity, and social inclusion.

Structure of curriculum through cognitive domains: The evidence review identified priority functions for ageing (attention, memory, processing speed, executive control, orientation, reasoning, praxis). These became the backbone of Sessions 2–11, with each session pairing 1–3 domains with praxis.

Evidence-based activity types: Findings that outdoor, group, and dual-task activities support mood, cognition, and inclusion guided

our mix of nature walking, coordination/ strength drills, and cognitively loaded games. Examples: Walking & Talking, Attention Peddy Paper, Minefield, PhotoHunt with Storytelling.

Session architecture for outcomes: Research on social connectedness and regulation informed a fixed 90-minute structure: 15 min social cohesion / ice-breaker → 60 min outdoor movement with cognitive load → 15 min relaxation/reflection to consolidate learning, emotional regulation, and belonging.

Progression and repetition: Meta-analytic insights on dosage and practice effects were operationalised through repeated domain pairings (e.g., Attention + Processing Speed; Memory + Processing Speed) with increasing task complexity across weeks.

Good practices → design patterns: Features observed in exemplars (free/low-threshold access, community settings, supervised but enjoyable sessions, dual-task exercises, structured parks/trails, reflection rituals) were adapted to BLOOM's low-barrier, community-based format.

Nature-based regulation: Evidence on green/blue spaces reducing stress and lifting mood led to consistent use of outdoor venues and closing practices like Nature Reflection, Forest Bathing, and Swaying Trees.

Social inclusion by design: Every session begins with group bonding and ends with shared reflection; pair and small-team tasks, international/intergenerational participation, and photo/story elements were included to normalise voice, visibility, and mutual support.

Safety and adaptability: The plan embeds scalable difficulty, seated alternatives, and pacing guidance taken from practice reviews, ensuring participation across abilities.

BLOOM Project website

http://www.project-bloom.eu