

Enhancing Cognitive Growth through Sensory and Biofeedback Therapy

<u>Organisation(s):</u>	General Directorate of Social Assistance and Child Protection Arad, Day and Recovery Centre for Children with Mental Disabilities – SIMBA, subordinated to the General Directorate of Social Assistance and Child Protection Arad, Romania	
<u>Country:</u>	Romania	
<u>Contact:</u>	ccap_arad@dgaspc-arad.ro	
<u>Theme:</u> Choose at least one option	<input type="checkbox"/> Ageing & Care <input type="checkbox"/> Asylum & Migration <input type="checkbox"/> Young People <input checked="" type="checkbox"/> Support for Children & Families <input type="checkbox"/> Community Care <input type="checkbox"/> Integrated Care & Support <input type="checkbox"/> Co-Production <input type="checkbox"/> Disability <input type="checkbox"/> Housing & Homelessness <input type="checkbox"/> Artificial Intelligence <input type="checkbox"/> Digitalisation <input checked="" type="checkbox"/> Quality Care	<input type="checkbox"/> Labour Market Inclusion <input checked="" type="checkbox"/> Social Inclusion <input type="checkbox"/> Technology <input type="checkbox"/> Workforce and Leadership <input type="checkbox"/> Social Benefits <input type="checkbox"/> EU Funding <input type="checkbox"/> Social Services' Resilience <input checked="" type="checkbox"/> Mental Health <input type="checkbox"/> Person-Centred Care <input type="checkbox"/> Research & Use of Evidence <input type="checkbox"/> Management & Planning <input type="checkbox"/> Other, please specify:
<u>Principles of the European Pillar of Social Rights:</u> Which principles does your practice cover? Check the 20 principles here.	<input type="checkbox"/> 1. Education, training, life-long learning <input checked="" type="checkbox"/> 2. Gender equality <input checked="" type="checkbox"/> 3. Equal opportunities <input type="checkbox"/> 4. Active support to employment <input type="checkbox"/> 5. Secure and adaptable employment <input checked="" type="checkbox"/> 6. Fair Wages <input type="checkbox"/> 7. Transparent employment conditions <input checked="" type="checkbox"/> 8. Social dialogue <input checked="" type="checkbox"/> 9. Work-life balance <input checked="" type="checkbox"/> 10. Healthy, safe work environment	<input checked="" type="checkbox"/> 11. Childcare and child support <input checked="" type="checkbox"/> 12. Social protection <input type="checkbox"/> 13. Unemployment benefits <input type="checkbox"/> 14. Minimum income <input type="checkbox"/> 15. Old age income and pensions <input checked="" type="checkbox"/> 16. Health care <input checked="" type="checkbox"/> 17. Inclusion of people with disabilities <input checked="" type="checkbox"/> 18. Long-term care <input type="checkbox"/> 19. Housing and assistance to homeless <input checked="" type="checkbox"/> 20. Access to essential services
<u>Current status of the practice:</u>	<input type="checkbox"/> Concept and Design Phase <input type="checkbox"/> Testing or pilot phase <input type="checkbox"/> Temporary practice that has terminated <input type="checkbox"/> Temporary practice that is ongoing and has a termination date <input type="checkbox"/> Established and ongoing practice <input checked="" type="checkbox"/> Scaling Up and Transformation Phase <input type="checkbox"/> Other (please specify):	
<u>Summary:</u> Please summarise the practice in maximum 3 sentences. This will be the disclaimer of your project on our website. Example	The SIMBA Day and Recovery Centre for Children with Intellectual Disabilities in Arad integrates MUSE biofeedback technology into sensory room therapy to identify children's emotional and cognitive responses in real time. This innovation allows therapists to adapt interventions instantly to each child's needs, increasing engagement, relaxation, and learning outcomes. The project demonstrates how technology can bridge the gap between neuroscience and daily therapeutic practice in social care.	

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<p><u>Context/ Social issues addressed</u> <i>Please explain the problem you attempt to solve with your practice.</i></p>	<p>Children with intellectual and developmental disabilities often face challenges in emotional regulation, sensory processing, and maintaining attention. Traditional therapeutic approaches provide limited insight into real-time emotional states, making it difficult for professionals to adapt sessions effectively.</p> <p>The SIMBA Centre addresses this issue by introducing MUSE biofeedback technology, which records brain activity and provides live feedback during sensory therapy. This allows therapists to identify stress, attention, and relaxation patterns and to adapt the sensory environment accordingly.</p> <p>The project tackles the broader issue of unequal access to innovative, science-based rehabilitation methods for children with disabilities, promoting inclusion, accessibility, and personalised support in community-based services.</p>
<p><u>Objectives:</u> <i>Please provide a maximum of three objectives in bullet points.</i></p>	<ol style="list-style-type: none"> 1. To improve the personalisation and effectiveness of sensory therapy for children with intellectual and developmental disabilities using MUSE biofeedback data. 2. To strengthen the professional capacity of SIMBA specialists through training in innovative, technology-assisted therapeutic methods. 3. To enhance inclusion and emotional wellbeing by creating adaptive, evidence-based therapeutic environments.
<p><u>Activities:</u> <i>Please describe the activities put in place to achieve the objectives (maximum 400 words).</i></p>	<p>The SIMBA Centre implemented a pilot project combining sensory therapy with real-time biofeedback data collected through MUSE neurotechnology. The multidisciplinary team — psychologists, speech therapists, social workers, and educators — designed a structured intervention plan focused on emotional regulation and attention improvement.</p> <p>Children participating in the project use the MUSE headband during sensory therapy sessions. The device measures brainwave patterns, allowing therapists to monitor relaxation and stress levels live. Based on these readings, the therapy environment (light, sound, texture, and tactile stimulation) is adjusted in real time to match each child's emotional state.</p> <p>Therapists receive regular professional training to interpret biofeedback data, integrate it with behavioural observations, and document progress using standardised assessment tools such as ABAS, BASC, and ADOS. Families are involved through guidance sessions where they learn how to support sensory regulation at home.</p> <p>The centre collaborates with local universities, sponsors, and public institutions to strengthen the project's scientific base and share results with the wider professional community. Awareness campaigns and open days help demonstrate the benefits of technology-supported therapy for children with disabilities.</p> <p>This project represents a pioneering step in Romania's social care system, merging psychological practice with modern neuroscience tools to enhance therapy outcomes.</p>

<p>Outcomes: Please explain what the results were/are so far and how you evaluated this (i.e. statistics, a study, or feedback)</p>	<p>Children demonstrated improved focus, relaxation, and adaptive behaviour after six months of integrated MUSE-assisted therapy.</p> <p>Biofeedback data allowed professionals to tailor interventions with greater precision, reducing sensory overload and behavioural incidents.</p> <p>Families reported higher satisfaction and better understanding of their children's emotional needs.</p> <p>Staff gained new digital and clinical competences in neurofeedback interpretation and sensory regulation techniques.</p> <p>The model proved scalable and replicable in other rehabilitation centres, offering a sustainable innovation in disability services.</p> <p>Evaluation was conducted through comparative progress reports, pre- and post-intervention assessments, and structured feedback from families and specialists.</p>
<p>Funding Source</p>	<p>EU Funds: ESF+ <input type="checkbox"/> INTERREG <input type="checkbox"/> ERDF <input type="checkbox"/> ERASMUS <input type="checkbox"/> RRF <input type="checkbox"/> other <input type="checkbox"/></p> <p><input type="checkbox"/> National Government Funds</p> <p><input type="checkbox"/> Regional Government Funds</p> <p><input checked="" type="checkbox"/> Local Government Funds</p> <p><input type="checkbox"/> Private Sponsorship / Public-Private Partnership</p> <p><input type="checkbox"/> Financial contribution of People using Services</p> <p><input type="checkbox"/> Other, please define:</p>
<p>Links to supporting documents: e.g. project website or report of the practice, articles</p>	<p>https://www.dgaspc-arad.ro</p>
<p>Comments and tips i.e. for people willing to implement your Practice in their service</p>	<ul style="list-style-type: none"> Integrating MUSE biofeedback technology in sensory therapy requires a strong multidisciplinary approach and collaboration between therapists, IT specialists, and families. Start with a pilot phase to familiarise staff with the device and data interpretation. Ensure continuous professional training and adapt interventions gradually, based on children's individual reactions. Even with limited resources, innovation is possible when professionals share the same goal: improving children's emotional regulation, attention, and quality of life.