Autism Fit

AUTISMFIT

Inclusion and Wellbeing for Young People with Autism

Promoting physical, mental, and nutritional health through innovative digital tools

Grant agreement number: 023-2-DE04-KA220-YOU-00017880

Co-funded by the European Union

Table of contents

1. Introducing AutismFIT
- About the project
- Aims
- Key Results

2. Theoretical Basis and Benefits of Gamification and Social Stories Methodologies
- Gamification as an Educational Strategy
- The Role of Social Stories in Inclusive Learning

3. Benefits of Digital Tools in Learning
- The Power of Digital Tools in Education
- Virtual Reality and Autism
- Virtual Reality and Physical Health
- Makey Makey and Nutritional Awareness

4. Alignment with EU Strategies and Initiatives

5. How to Implement the Project
- The Role of Youth Workers (YWs)
- Implementing AutismFIT Activities

6. Transferability of the Project to Other Sectors and Target Groups
- Expanding AutismFIT to Other Contexts

7. References

8. Contact

Introducing AutismFIT

About the project

The AutismFIT project is focused on improving the physical and mental health of young people aged 13-18 with Autism Spectrum Disorder (ASD). By using cutting-edge tools like Virtual Reality and game-based learning environments AutismFIT encourages healthy eating and active living in an engaging and effective way.

Autism SpectrumDisorder affects 1% of the global population.As with all young people, maintaining a balanced diet and regular exercise is crucial for their well-being, yet these areas are often under-addressed for individuals with autism. The AutismFIT partnership, comprised of six partners from across Europe, will address this need by creating resources and support for a healthier lifestyle for teens on the spectrum.

Research shows that serious games (games designed for a purpose more than pure entertainment) and gamified learning environments are some of the most common ways of learning and enhancing a learner's engagement and performance. These methods can provide a structured and motivating environment that manypeople with autism may enjoy.

Partners

Ειδικό Σχολείο Λευκωσίας

Aims

SUPPORT TEENS WITH ASD

Empower, engage and connect young people with autism through skill development and promotion of healthy eating habits.

DEVELOP SKILLS OF PROFESSIONALS

Improve the skills and digital abilities of youth workers, volunteers, and trainers (such as social workers, educators, physical instructors, and clinical dieticians) through a validated training programme. This training will help them better support young people with autism using innovative non-formal methods and digital tools.

Key results

Virtual Reality game for young people with autism complete with a multimedia guide

Validated capacity building training for youth workers

Makey Makey Game Collection for young people with ASD

Digital repository of resources and best practices that promote the wellbeing of people with autism.

Theoretical Basis and Benefits of Gamification and Social Stories Methodologies

Gamification involves using elements from games—like levels, challenges, scores, and real-time feedback—in non-game contexts such as education and therapy. For autistic individuals, this approach has proven especially effective.

Research shows that gamified environments improve **motivation, emotional engagement and task completion** for children and youngsters with neurodevelopmental differences, including Autism and ADHD (Honorato *et al*, 2024). It also supports executive function, such as planning and attention control.

Why does it work? Because games offer clear rules, visual rewards, immediate feedback, short-term goals, and low pressure repetion. This is ideal for autistic youth, who often benefit from predictable, structured environments with visual and interactive cues.

Gamification as an Educational Strategy

Educational games can be divided in *3 types*: *simulation games* (real-life practice), *serious games* (story-driven challenges that test skills), and *digital gamified environments* (digital scenarios that turn the learning process into a game by adopting the mechanics, dynamics, and aesthetics of the video game).

Integrating all these elements has proved to be highly effective for Autism, as it **combines immersive and multisensorial technology** aligned with their interests – **with structure and adjustable support.**

The Role of Social Stories in Inclusive Learning

Social Stories are short, descriptive narratives that explain situations, activities, or social norms to help autistic individuals understand and respond appropriately (Gray and Garand, 1993)

When used in combination with gamification, they:

- Provide clarity and predictability
- Reduce anxiety around new or challenging situations (error-friendly learning)
- Enhance understanding of social expectations
- Encourage the development of coping strategies

Together, these methods create a safe, engaging space for learning that supports individual needs and reduces barriers (Camilleri et al, 2024)

Benefits of Digital Tools in Learning

The Power of Digital Tools in Education

Digital tools, such as Virtual Reality and interactive kits like Makey Makey, play a key role in AutismFIT.

Why digital tools help:

- Increase engagement and motivation (Honorato et al, 2024)
- Adapt to individual learning styles (Derks et al, 2024)
- Support for Visual and Multisensory Learning (Zhang et al, 2022)
- Provide a safe Environment for Repetition and Practice (Kandalaft et al, 2013)
- Support routine and structure, essential for many autistic learners (López-Bouzas et al, 2023)

These tools empower users by allowing them to be active participants, not passive recipients, in their learning journey.

Make learning multi-sensory and immersive

Adapt to individual learning styles

Encourage hands-on, safe , repetitive and gradual learning, reducing real-world trial and error anxiety

Support routine and structure, essential for many autistic learners

Virtual Reality and Autism

Digital tools like Virtual Reality (VR) are opening up exciting new opportunities for young people with autism. One of the biggest benefits is that VR can create safe and predictable spaces where they can explore and learn without feeling overwhelmed. For many autistic youth, the real world can sometimes be stressful, especially when it comes to social situations or unexpected changes. If something feels too difficult, they can pause, rewind, and try again until they feel more confident.

For youth with autism, who often learn best through visual and hands-on approaches, these immersive experiences can spark curiosity and make learning feel exciting rather than stressful. It allows young people to safely prepare for situations that might otherwise feel daunting—like joining a group activity. In this way, digital tools like VR don't just support learning; they also open doors for young people with autism to explore their full potential and feel more ready for the world around them.

Virtual Reality and Physical Health

Virtual Reality (VR) simulations in AutismFIT are designed to promote physical activity while maintaining a structured and enjoyable environment.

How VR supports physical wellbeing:

- Games include tasks that require movement and coordination
- Young people become the main actors of each VR scenario
- Repetitive and structured design promotes participation
- Provides a safe and motivating alternative by turning physical movement into a fun, interactive experience.

VR helps reduce sedentary behavior and can also help lower stress, according to research (Power et al, 2025). VR-based physical challenges motivate youth to engage in moderate-to-vigorous physical activity by embedding movement in fun gameplay. Studies report autistic participants being active for 25–80% of gameplay time, improving motor coordination and executive functioning (Finkelstein et al, 2010; Graham et al 2022; Hocking et al., 2022 ; Abdel Ghafar et al, 2025)

Makey Makey and Nutritional Awareness

Makey Makey is an interactive electronic board that turns everyday objects into touch-activated digital interfaces.

By connecting conductive materials like fruit, water or foil to a computer, it enables users to trigger sounds, play games and send commands, making interaction engaging and intuitive.

Its strength lies in bridging the physical and digital worlds in a creative, accessible way, making it especially useful for inclusive educational and rehabilitation activities.

In the AUTISMFIT project, Makey Makey powered interactive games around body, senses, and food. Activities include recognizing foods, creating balanced meals, promoting autonomy, and exploring emotions.

Examples range from playing a fruit-and-veg piano, blending virtual smoothies, and spotting healthy snacks, to soundboards for taste, emotion-based paths, and water music. These activities promote healthy nutrition, encourage informed decision-making and reduce food selectivity. However, Makey Makey's versatility also extends to daily life skills such as hygiene, routines and time management, all through play and shared experiences.

How Makey Makey encourages creativity, imagination and problem solving?

Using Makey Makey stimulates creativity, imagination, and flexible thinking by turning each activity into a small challenge—like making sounds with fruit, turning drawings into controllers, or completing circuits. These playful experiments encourage reasoning, adaptation, and curiosity, while building strategies that extend beyond the game itself.

For children with high-functioning autism, the device's simplicity allows them to design or adapt games, sometimes inventing entirely new solutions. Makey Makey thus becomes a co-creation platform where they can express ideas, collaborate, and take initiative. This active role fosters autonomy, critical thinking, and engagement in their own learning, while co-designing activities strengthens broader skills such as planning, communication, emotional regulation, and problem-solving.

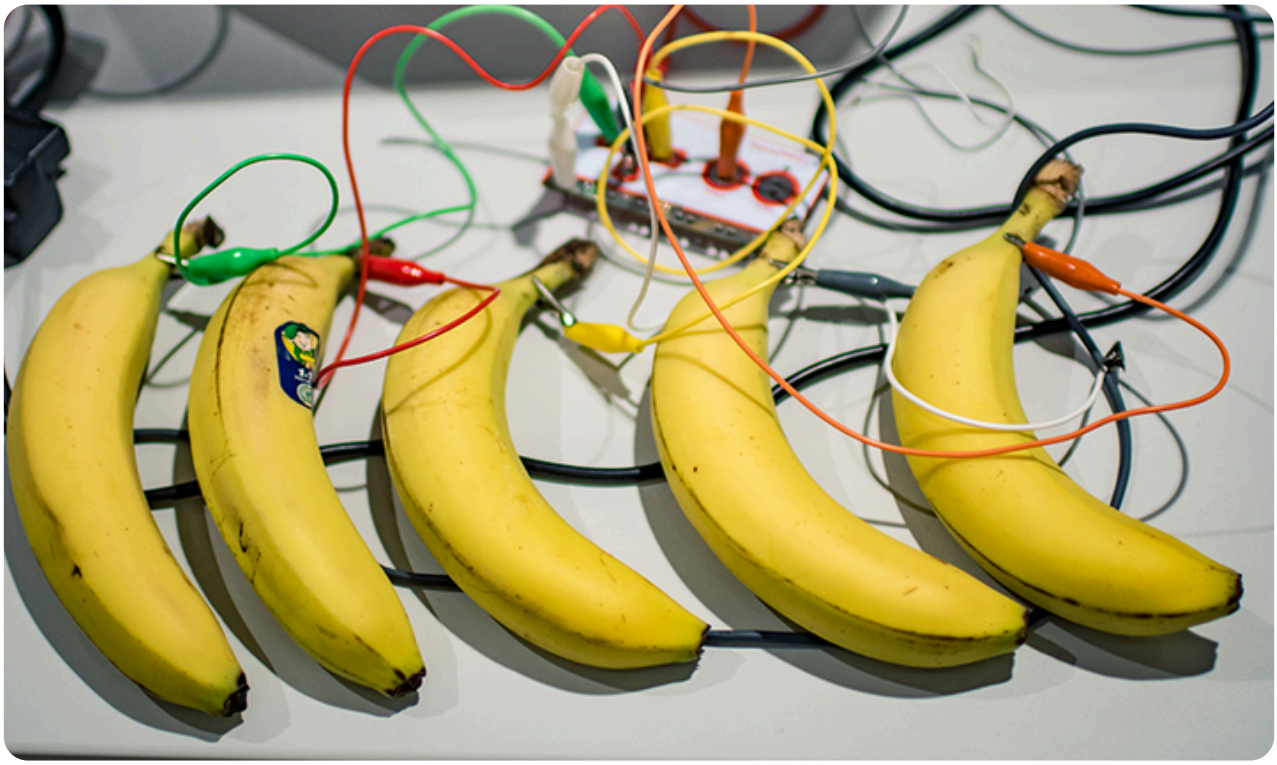

Photo by Sandra Schink, licensed under CC BY-NC-SA 2.0

Why is it important to transform everyday objects into digital interfaces?

Using everyday objects as tools to interact with the digital world is highly educational and symbolic. It involves appreciating what is familiar and establishing a connection between concrete experiences and abstract concepts. For children with autism, this type of interaction can facilitate access to learning, reduce anxiety, and support the generalisation of skills — that is, the transfer of what is learned in structured contexts to real life. Makey Makey enables familiar environments such as homes, schools and educational centres to become places where learning through play can take place, starting with simple and meaningful materials.

This approach encourages participation, transforming educational intervention into a shared experience. Educators, therapists and teachers can collaborate with children to create personalised activities that reflect their interests, skills and goals. For young people interested in technology in particular, Makey Makey can become a tool for expression, autonomy and leadership, opening up avenues for co-design and innovation. It's not just about learning with technology; it's about shaping technology according to one's needs and transforming everyday life into fertile ground for growth, play and active participation.

Alignment with EU Strategies and Initiatives

EU Strategy for the Rights of Persons with Disabilities (2021–2030)
Emphasizes inclusive health, access, and autonomy for persons with ASD

AutismFIT aligns by promotes equal access to health services, education, inclusive participation, and support systems for persons with disabilities—including those with autism. Plans include frameworks for social services, disability cards, and enhanced accessibility.

EU's Guidance on Independent Living and Inclusion in the Community of Persons with Disabilities
autonomy, inclusive support, and the right to live and participate fully in one's own environment

AutismFIT aligns by promoting autonomy, inclusive support, and participation through community-based interventions. Its approach reflects core principles of the UN CRPD and EU Charter, and can be assessed using the EU's self-assessment framework to ensure compliance with strategic EU priorities.

EU Youth Strategy (2019–2027)
Encourage healthy life style and mental health cupport for adolescents with ASD

AutismFIT aligns with the Youth Goal on "Health and Well-being," by promoting physical activity, healthy lifestyles, and mental health support for adolescents with Autism Spectrum Disorder. Through Virtual Reality and game-based learning, the project delivers engaging, motivating interventions that encourage active living and balanced nutrition—fully in line with EU priorities for improving youth health outcomes.

How to Implement the Project

The Role of Youth Workers (YWs)

Youth workers play a crucial role in implementing AutismFIT activities and supporting participants. Key responsibilities of YWs:

- Facilitate and adapt activities
- Guide young people through social and sensory challenges
- Offer emotional support and structure
- Encourage autonomy and self-confidence

They also gain valuable professional development in inclusive education, digital literacy, and soft skills.

Implementing AutismFIT Activities

The AutismFIT methodology is designed for easy adoption in youth centers, schools, and community programs. Steps for implementation:

1. Set up the VR and Makey Makey tools
2. Introduce gamified and story-based activities
3. Train youth workers and facilitators
4. Monitor engagement and adapt sessions
5. Encourage regular feedback and participation

AutismFIT promotes a flexible and inclusive approach, respecting individual pace and abilities.

Transferability of the Project to Other Sectors and Target Groups

Expanding AutismFIT to Other Contexts

The AutismFIT project has strong potential for transferability to other sectors and target groups, as its core principles—holistic support, inclusive practices, and accessible resources—are universally relevant.

While initially designed to promote well-being and balanced lifestyles for children with autism, the project's methodologies, such as structured training materials, adaptable activity plans, and family engagement tools, can easily be adjusted to support other neurodiverse groups, young people with different learning needs, or even wider community health initiatives.

By collaborating with schools, health institutions, youth organizations, and community centres, AutismFIT can expand its impact beyond its original focus, creating a model of inclusive well-being that addresses diverse audiences (i.e. children with ADHD; older adults with dementia and/or with neurological condition like multiple sclerosis or cerebral palsy) and topics (i.e. work transition). This flexibility ensures that AutismFIT is not confined to a single context but rather becomes a transferable framework for supporting physical and mental health across sectors and populations.

References

Gamification:

Honorato, N., Soltiyeva, A., Oliveira, W., & al. (2024). Gameful strategies in the education of autistic children: A systematic literature review, scientometric analysis, and future research roadmap. Smart Learning Environments, 11, 25.

Derks, S., Scherpiet, S., Hendriksen, J. G. M., et al. (2022). Improving adaptive and cognitive skills of children with an intellectual disability or autism using serious games: A randomized controlled trial. Computers in Human Behavior Reports, 5, 100079.

Kandalaft, M. R., Didehbani, N., Krawczyk, D. C., Allen, T. T., & Chapman, S. B. (2013). Virtual reality social cognition training for young adults with high-functioning autism. Journal of Autism and Developmental Disorders, 43(1), 34–44.

Zhang, M., et al. (2022). Virtual reality technology as an educational and intervention tool for children with autism spectrum disorder: Current perspectives and future directions. Behavioral Sciences, 12(5), 138. https://doi.org/10.3390/bs12050138

Sala, A., González-Vázquez, I., Görtz, S., & Marques, R. (2020). LifeComp: The European Framework for Personal, Social and Learning to Learn Key Competence. Publications Office of the European Union.

López-Bouzas, N., & Del Moral-Pérez, M. E. (2023). Gamified Environments and Serious Games for Students With Autistic Spectrum Disorder: Review of Research. Review journal of autism and developmental disorders, 1–13. Advance online publication.

VR:

Finkelstein et al. (Astrojumper Study, 2010) – VR exergame for children with autism
Finkelstein, S., Nickel, A., Barnes, T., & Sum, E. (2010). Astrojumper: Motivating children with autism to exercise using a virtual reality game. Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems, 4190–4195. https://doi.org/10.1145/1753846.1754124 ict.usc.edu+5illusioneering.cs.umn.edu+5Academia+5

Graham et al. (2022) – Review of exergaming benefits in autistic children
Graham, T. C. N., King, N., Coo, H., Zabojnikova, P., Gurd, B. J., & Samdup, D. (2022). Design and evaluation of an exergaming system for children with autism spectrum disorder: The children's and families' perspective. Frontiers in Virtual Reality, 3, Article 817303. https://doi.org/10.3389/frvir.2022.817303 Europe PMC

Hocking et al. (2022) – Combining VR with physiotherapy in children with ASD
Hocking, D. R., Ardalan, A., Abu-Rayya, H. M., Farhat, H., Andoni, A., Lenroot, R., & Kachnowski, S. (2022). Feasibility of a virtual reality-based exercise intervention and low-cost motion tracking method for estimation of motor proficiency in youth with autism spectrum disorder. Journal of NeuroEngineering and Rehabilitation, 19, Article 1. https://doi.org/10.1186/s12984-021-00978-1 Europe PMC+5jneuroengrehab.biomedcentral.com+5PubMed+5

Abdel Ghafar, M. A., Abdelraouf, O. R., Harraz, E. M., Seyam, M. K., Morsy, W. E., & Amin, W. M. (2025). Virtual Reality rehabilitation helps to improve postural balance in children with autism spectrum disorder: A randomized controlled trial. Physical & Occupational Therapy in Pediatrics. Advance online publication. https://doi.org/10.1080/01942638.2025.2466555 sciencedirect.com+11tandfonline.com+11medznat.ru+11

Power, M., Kennedy, S., Cleary, F., Mills, I., Kinsella, S., & Huertas Celdrán, A. (2025). A systematic literature review of XR interventions to improve motor skills development among autistic children. IEEE Access. Advance online publication. https://doi.org/10.1109/ACCESS.2025.1234567

Social stories:

Camilleri, L. J., Maras, K., & Brosnan, M. (2024). Effective digital support for autism: digital social stories. Frontiers in psychiatry, 14, 1272157. https://doi.org/10.3389/fpsyt.2023.1272157

Gray CA, & Garand JD (1993). Social stories: Improving responses of students with autism with accurate social information. Focus on Autism and Other Developmental Disabilities, 8(1), 1–10.

Scan the QR code to watch the **AutismFIT video**!

Contact

Ilaria Avagnina,
EASPD Communications Officer
ilaria.avagnina@easpd.eu

Disclaimer: 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.