



TexUnite

Project: 2024-1-DE01-KA220-HED-000253935 – TexUnite - Service Learning on Sustainability in Textile and Fashion Education

SL Project Title: Art Therapy for People with Autism Through Creative Recycling and Upcycling of Textiles

Partner University: 'Gheorghe Asachi' Technical University of Iași, Romania, Faculty of Industrial Design and Business Administration, Department of Knitting and Clothing

Name of the Stakeholders: 1. ANCAAR IAȘI, national organisation for people with autism, 2. 'Ion Holban' Technical College of Iași, school for high school pupils with autism.

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Executive Summary

The service-learning (SL) project implemented by TUASI, Romania, involved 17 students in developing creative projects for people with autism from two partner organisations. As part of the project, the students learned to design knitted materials with varied structures using Stoll automatic flat knitting machines and programmed them with the M1plus® specialised software. These materials were recycled and upcycled into decorative and functional objects during joint sessions with partners with autism. Special activities were organised for the Christmas season, including decorating a Christmas tree, making lavender bags, and creating customised blue clothing for people with autism. The highlight of the project was a charity concert, where university students and people with autism performed together on stage to raise funds for their therapy. Additionally, a virtual exchange with the University of Education, Freiburg, Germany, provided students with opportunities to enhance their intercultural, linguistic, and digital skills. Pre- and post-assessments indicate that the project significantly improved students' awareness of sustainability, as well as their empathy for people with special abilities and needs.

Background and Context

Art therapy has proven to be a valuable approach for people with autism, offering a range of therapeutic benefits. Through creative activities, people with autism can explore their emotions, enhance communication skills, and strengthen social relationships. Art therapy employs creative techniques such as drawing, painting, and collage to help people with special needs explore the psychological and emotional nuances expressed in their art. Knitted waste can serve as a versatile and engaging resource for creative activities for people with autism, due to its pleasant texture and the wide variety of yarn colours.

Objectives

- Design of knitted materials with various structures on the Stoll automatic flat knitting machine using the M1plus® software;
- Explore sustainable knitting methods;
- Develop solutions for reusing knitting waste generated during learning practices, including recycling and upcycling;
- Create and implement creative projects with people with autism and produce decorative and functional objects.

Methodology

Lectures on CAD systems for knitting technology covered topics such as designing knitted materials with various patterns on the automatic flat knitting machine, learning the specialised software M1plus® and its tools for

machine programming, and studying sustainable knitting solutions to minimise the pre-consumer waste. Additionally, students were encouraged to apply their creativity in reusing knitting waste through recycling, upcycling, reuse, and repurposing, and to prepare design projects. The project also introduced students to the EU strategy for sustainable and circular textiles in production and consumption, as well as the principles and implementation of SL. Within the project, the primary focus was on engaging with people with autism, planning and executing activities with them, and carrying out preparatory activities such as drawing, preparing templates, and assembling accessories.

The project began with a preparatory meeting of therapists working with autistic people, aimed at understanding how interaction between students and autistic individuals could be facilitated for shared activities in the knitting laboratory. In addition to the design projects, students created customised outfits for people with autism and participated in a fundraising event, performing alongside autistic individuals on stage at the Central University Library in Iași, Romania. The project concluded with a reflective session on the impact of the joint activities. Pre- and post-seminar evaluations allowed students to provide insights into their attitudes towards sustainability, project implementation, and VE.

Implementation Details

The project took place within the course Computer Aided Design for Knitting during the 7th semester of the Bachelor's degree in Knitting and Clothing Technology. Led by Prof. Dr. Mirela Blaga, the class involved 15 fourth-year BSc students and 2 PhD students. It took place during the winter semester of 2025/2026 and included 84 hours of seminars and practical work.

- ❖ Theoretical component: students deepened their knowledge of knitting technology, EU sustainability regulations, ecological and social challenges in the textile industry, and the circular economy principles, while also being introduced to SL methodology.
- ❖ Practical applications: students manufactured fabrics on the automatic flat knitting machine and prepared prototypes for recycled and upcycled objects. Examples include a friendship tree made from recycled yarns, lavender bags made from jacquard panels, Christmas decorations made from leftover materials, and outfits featuring the names of autistic individuals. Following the preparation of design projects and the collection of materials, students produced decorative objects in joint sessions with autistic people.

Results and Impact

Students reflected on the waste generated during textile production and learned how to mitigate its environmental and climate impact by reusing materials. They demonstrated creativity through sustainable practices and

civic engagement by participating in activities with two groups of people with special needs. Through artistic activities with individuals on the autism spectrum, students developed new communication skills and increased their empathy for others.

Challenges and Lessons Learned

A key lesson for students was recognising their role in recycling materials produced through various manufacturing technologies and using their creativity to develop new design projects that transform waste into valuable resources.

Besides the sustainability aspects, students faced the challenges of adapting to a different community, collaborating effectively, and communicating through artistic means.

For the lecturer, the main challenges were integrating SL activities into the curriculum, designing specific tasks, and facilitating meaningful interactions between students and people with special needs. Another challenge involved finding effective solutions to enhance communication and direct contact during VE.

Reflection and Feedback

Students gained self-confidence in design and communication, strengthened their teamwork skills, and slightly improved their English language proficiency during VE. Reflections emphasised that practical knowledge can be explored within a social context, and students became more aware of options for recycling and upcycling waste materials. This SL project is an example of an educational case study, providing real-world examples that enhance student learning and engagement in social causes. It helped students become more empathetic and responsible citizens. The partner organisations confirmed that the products created and the connections formed during joint sessions had a meaningful impact on both teenagers and adults with autism.

Future Directions

The project outcomes will inform future SL activities within the TexUnite framework. The OER materials will be completed and uploaded to the ZOERR and EPALE repositories for reuse and dissemination.