

Monitoring Report 2

Project Title: SEN Power

Expert Report on Educational Resource Development (WP3 – D2.3) – Bulgaria and Turkey

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1. Introduction

This report presents a summary of the monitoring, evaluation, and expert support provided for the development of inclusive lesson plans and accompanying materials in Mathematics and Nature Studies at the primary school level as part of the SEN Power project. In September 2023 35 teachers from Bulgaria, Turkey, and Portugal participated in a training event held in Entroncamento, Portugal. The focus of the training was to empower teachers to use the training resources from the first editions of the toolkits “Mathematics for all” and “Nature Studies for all”, but also to design and adapt lesson plans for students with Special Educational Needs (SEN) while improving overall student engagement and learning outcomes.

As an appointed experts, our responsibility included reviewing and providing constructive feedback on the educational materials created by teachers from Bulgaria and Turkey, ensuring alignment with inclusive pedagogical principles, curriculum requirements, and best practices in differentiated instruction.

2. Overview of the Process

After completing the training in Portugal, participating teachers:

- Identified challenging topics within their national Mathematics and Nature Studies curricula.
- Designed original lesson plans targeting these topics.
- Developed supplementary materials, including worksheets, games, visual aids, and presentations.
- Focused on inclusive strategies aimed at supporting SEN students while maintaining appeal for the entire classroom.

Teachers were encouraged to implement the founding principles from the SENPower Methodology and introduced during the trainings.

The following strategies and tools are described in the Methodology:

1. Strategies for developing social skills.

- Teaching and developing social skills in an appropriate environment.
- Peer education.
- Role games.
- Apps and PC.
- Using puppet communication.

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2. Behavioural Strategies.

Exposure and response prevention (ERP) interventions.

Electronic devices - computers, laptops, tablets, smartphones.

Sensory diet.

3. Academic Strategies.

- Individual study plan and programs.
- Adapted lessons.
- Shared reading.
- Learning in small steps.
- Establishing structured learning environments.
- Computers in the teaching and learning process for students with ASD.
- ADHD and Maths Help - Break instructions down into smaller parts; Give written directions; Check student work early and often; Use patterns and mnemonics; Provide real-life examples; Use technology and visuals for maths help.
- Approaches for organising the teaching and learning process of students with SpLD - Printing off any information that is crucial for the students to retain; Texts with highlighted main points of the content; Repeating; Colour coding; Four Letters; Reading in pairs; A multisensory approach to writing letters; Spelling grid; Pairing game; Provide lesson recordings; Provide alternatives (reading adaptations); Memory cards, pictures, dominoes and others.

In this way Section B of the Methodology provides a broad framework of strategies and approaches to support children with SEN. It offers teachers specific, step-by-step instructions for organising the teaching and learning process of the target group of children. There are models for planning and organising lesson units for teaching Mathematics and Nature Studies to students with different learning difficulties. Module B guides the teachers how to create plans for individual work with the particular child. The recommended approaches place the child's LD within the broader opportunities and skills that should be developed in the learning process. Particular attention is paid to the multiple intelligence and resilience approach, drawing attention to all the child's resources that may be involved and developed in the learning process.

The following strategies and tools are introduced during the trainings

- Universal Design for Learning (UDL),
- Multi-sensory and experiential learning,
- Use of ICT tools for visualization and interaction,
- Collaborative and game-based learning activities.

The Methodology contains a wide range of examples that teachers could use to make the teaching and learning process in Mathematics and Nature Studies at primary school level correspond to the needs of the students with specific learning difficulties (SpLD), students with Autism Spectrum Disorders (ASD) and students with Attention Deficit/Hyperactivity Disorder (AD/HD).

In the same time it should be borne in mind that there is no such thing as one general approaches for working with students with SEN. The approach to each child depends on the particularities in their development, individual and even momentary status and capability level. In this regard, every lesson plan gives specific solutions and recommendation, and enrich the knowledge of teachers and to lead them along the way to overcoming some difficulties in their everyday work.

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The inclusive learning process in classroom involves recognizing the individual differences, a commitment to inclusive values and practices in the wider school environment beyond the classroom and partnerships with resource teachers and other specialists in supporting education and inclusion.

3. Review and Evaluation of Bulgarian and Turkish Contributions

The materials submitted by Bulgarian and Turkish teachers were reviewed against the following criteria:

- **Clarity and Structure of Lesson Plans:** Objectives, steps, timing, differentiation strategies, and assessment methods.
- **Inclusion of SEN Strategies:** Adjustments for different learning needs, use of supportive tools, alternative tasks, and flexible grouping.
- **Creativity and Engagement:** Use of real-life examples, hands-on tasks, visual resources, and educational games.
- **Curricular Relevance:** Alignment with national and European learning standards.

Findings:

Strengths:

- Most lesson plans demonstrated a clear structure and alignment with curriculum goals.
- Teachers showed good understanding of differentiation, offering adaptations for students with mild to moderate learning difficulties.
- Use of visual aids and interactive elements (e.g., matching cards, role-play, and group work) was consistent and pedagogically sound.
- Some materials were innovative—particularly in integrating storytelling, gamification, and nature-based activities in STEM contexts.

Areas for Improvement:

- In some cases, learning objectives were too general or lacked measurable outcomes.
- Not all materials included a specific section outlining adjustments for SEN students.
- Some worksheets required simplification or visual enhancement for better accessibility (e.g., font size, use of color coding, image-text balance).
- Presentation slides sometimes included excessive text or lacked structure to support scaffolding for weaker learners.
- All lessons should offer an integrated approach to developing behaviour, cognitive skills, and emotions at an individual level, but also group relationships between all students.

4. Feedback and Editing Support

Following the review, we provided tailored feedback to each teacher. The support included:

- **Editing lesson plans** for clarity, consistency, and readability.

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- **Rewriting learning objectives** to follow the SMART criteria (Specific, Measurable, Achievable, Relevant, Time-bound).
- **Suggesting layout and design improvements** for worksheets and presentations, including accessibility tips (e.g., dyslexia-friendly fonts, visual cues).
- **Recommending alternative or additional SEN support strategies**, such as:
 - Pre-teaching of key vocabulary.
 - Use of tangible manipulatives in math.
 - Peer-assisted learning structures.
- **Encouraging cross-curricular links** to make lessons more context-rich and relevant.

Summary of feedback and recommendation:

Improving lesson plans and adapting them for children and especially for children with special needs in primary grades required a focus on **individualization**, **accessibility**, **multi-sensory instruction**, and **supportive learning environments**. Here are some detailed recommendations which were provided to the teachers in order to adapt their lesson plans for use by all students and especially for those students with special needs, requiring additional support:

- Get to know your students and their individual needs, strengths and learning styles

During our interaction with the Bulgarian and Turkish teachers we understood that all teachers are preparing individual learning plans for each student, where they set measurable and achievable indicators for successes as well as goals, and objectives to be achieved during each term of the school year. It is quite satisfactory to report that 100% of the teachers conduct informal and formal assessments at the beginning of the school year, review the ILP for each child on a regular basis during the school year and collaborate with families and other specialists – speech therapists, resource teachers, special educators, occupational therapists, psychologists, etc. in order to provide an in-depth, multi-faceted and comprehensive approach for each learner/student.

About 20% of the lesson plans M4All and NS4All (58 in total) needed some minor additional improvements in regards to:

- Differentiating Instruction
 - ✓ providing **multiple levels of tasks** (different mathematical comprehension for the same problem)
 - ✓ **breaking the tasks into smaller steps**, using more visual materials, conducting experiments, multi-coloured graphic organizers, etc.
 - ✓ **offering choices** on how students demonstrate the acquired knowledge -visually, orally, through demonstration, writing, drawing, or other means.
- Using multi-sensory teaching - children with special needs often benefit from engaging multiple senses.
 - ✓ **Visual**: pictures, diagrams, charts, color coding.
 - ✓ **Auditory**: songs, chants, read-alouds.

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- ✓ **Kinesthetic:** hands-on activities, movement games, experiments, demonstrations, etc.
- ✓ **Tactile:** textured letters, manipulatives (e.g., counters, blocks).
- Incorporating Universal Design for Learning (UDL) as it provides flexible ways for all learners to access content and show what they know. Teachers were advised to use more frequently:
 - ✓ **Multiple means of representation:** visual aids, audio support, simplified text.
 - ✓ **Multiple means of action and expression:** let students use drawings, speech-to-text, or assistive tech.
 - ✓ **Multiple means of engagement:** relate lessons to real life, use interests to motivate learning, connect lessons with other lesson subjects.
- Adjusting pacing and time such as:
 - ✓ Allow **extra time** for processing and completion.
 - ✓ Use **visual schedules** and **timers** to support transitions and attention.
 - ✓ **Chunk lessons** into shorter segments to reduce cognitive overload.
- Incorporating and **promoting social emotional learning** was a big part of the review process and the supporting experts from NART played a very important role to make sure that 100% of the developed materials for both M4All and NS4All contained the required characteristics, such as:
 - ✓ Integrate activities that build self-awareness, empathy, and communication.
 - ✓ Use **peer buddy systems** and **group work** with structured roles.
 - ✓ Teach **emotional regulation** through stories, role-play, and calming routines.
- Some of the presented materials (about 45% from all 58) needed only minor improvements in the use of **Clear, Simple Language, mainly in the following areas:**
 - ✓ Give **one direction at a time**.
 - ✓ Use **visual cues and gestures** to reinforce instructions.
 - ✓ Repeat and rephrase key concepts.

The recommendations provided by the experts from NART to all the participating teachers were to adapt the materials when and as necessary and needed, especially if used in the classroom where there were students with special needs, by using the following instruments:

- ✓ Using **larger print, picture-based instructions, or highlighted key words**.
- ✓ Providing **manipulatives or technology tools** (e.g., iPads with educational apps).
- ✓ Including **visuals in worksheets** and **use checklists** for tasks.

The experts from NART emphasized also on implementing the **regular feedback and reinforcement strategies and methods** in every lesson plan in order to:

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- ✓ **Provide immediate, specific praise** for efforts and successes.
- ✓ Use **behaviour charts, token systems, or positive reinforcement** strategies.
- ✓ **Encourage self-monitoring and goal-setting** with simple tools.

5. Conclusion

The review process confirmed the strong engagement and professional growth of participating teachers. Their efforts reflect a genuine commitment to inclusive education and innovative pedagogy. The Methodology and trainings clearly succeeded in equipping them with practical tools and motivation to design accessible and engaging lessons. The professional development opportunity and collaboration among the participating teachers enriched their understanding of the different teaching methodologies, inclusive practices and special education strategies targeting all students, including those with special needs.

The NART experts were pleased to highlight the professionalism and expertise of the participating teachers. The help and support provided by the educational consultants from NART to all 23 participating teachers proved to bring additional knowledge and hands-on experience in regards to the design and adaptation of new educational materials in mathematics and natural science in the primary school grades. Out of all the 58 lesson plans, 12 lesson plans needed to be redacted as detailed in the report above, 26 needed to improve the use of simple, clear language in the areas described in details above and only 6 lesson plans needed major improvements in nearly all the mentioned areas in point 4. The reflection, improvement and adjustment of the presented materials continued during the months from July through to September of 2024. Teachers are encouraged to use the SEN Power platform and methodologies as powerful and useful tools in their everyday work with the primary graders. The adaptation of the lesson plans is an ongoing and creative process for each user of the SEN Power Platform, as they should reflect the changing individual needs of each and every learner. The collaboration among the partners and the participating teachers will continue, using the Sen Power web site and various resources in all 4 languages. We encourage the sharing of materials and knowledge as well as building of any future partnerships and exchange of experience between the participating organizations and individual teachers.

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