MODULE 2

INCLUSIVE TEACHING AND ASSISTIVE TECHNOLOGY

Upskilling Preservice Teachers to Support Young Children with Autism Spectrum Disorder through Digital Social Stories
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3. MODULE 2 - Inclusive Teaching and Assistive Technology

By the end of this module, students will:
- Explain how to adapt teaching strategies to different learning styles and cognitive profiles through individualized planning.
- Explain teaching techniques that increase attention and motivation for students with ASD.
- Gain knowledge about assistive technologies (AAC, applications, digital boards, etc.).
- Explain how to integrate digital tools to support social, emotional, and academic development.

Before starting this module, students are expected to have:
- A basic understanding of early childhood development.
- General knowledge of educational psychology, including key learning theories and behavior management principles.
- Foundational knowledge of autism spectrum disorder (ASD).
- Basic technological literacy, including the use of smart boards, tablets, and simple educational applications.

Modul 2	Contact hours		Self-study
	Lectures	Workshops/Seminars	
	2	3	9

Knowledge	K19 - Explains the basic principles of inclusive education in terms of the participation of individuals with special needs in education.
	K20 - Explains the cognitive and emotional needs of children diagnosed with ASD in their learning processes.
	K21- Classifies the functions of assistive technologies (AAC, mobile applications, visual aids) in the educational environment.
Skills	S17 - Develops teaching strategies tailored to different learning profiles and prepares individualized teaching plans.
	S18 - Establishes effective communication with students with ASD using alternative and augmentative communication (AAC) tools.
Competence	C17 - Ensures inclusive classroom management by structuring technology-supported teaching environments.
	C18 - Creates digital observation forms and reflective assessment tools to monitor the social-emotional development of students with ASD.
	C19 - Integrates assistive technologies into classroom routines by matching them with pedagogical goals and evaluates the effectiveness of the applications.

3.3 Syllabus & topics

	Type	Topic	Self-study activity	Resources	Hours
1	Lecture	Basic principles of inclusive education in terms of the participation of individuals with special needs in education. Cognitive and emotional needs of children diagnosed with ASD in their learning processes	Read UDL guidelines and write a 1-page reflection. Compare inclusive vs. traditional classrooms Complete a self-assessment checklist and write a 1-page reflective summary on your learning progress and participation in inclusive activities.	Florian, L., & Beaton, M. (2017). Inclusive pedagogy in action: getting it right for every child. *International Journal of Inclusive Education*, *22*(8), 870–884. https://doi.org/10.1080/13603116.2017.1412513 Roberts, J., & Simpson, K. (2016). A review of research into stakeholder perspectives on inclusion of students with autism in mainstream schools. *International Journal of Inclusive Education*, *20*(10), 1084–1096. https://doi.org/10.1080/13603116.2016.1145267 Kasari, C., & Smith, T. (2013). Interventions in schools for children with autism spectrum disorder: Methods and recommendations. *Autism*, *17*(3), 254-267. https://doi.org/10.1177/1362361312470496 Deppeler, J., Loreman, T., Florian, L., Smith, R., & Forlin, C. (Eds.). (2015). *Inclusive pedagogy across the curriculum*. Emerald Group Publishing.	1 hour
2	Lecture	Introduction to Assistive Technologies: Types and Applications and functions of assistive technologies (AAC, mobile applications, visual aids) in the educational environment.	Prepare a poster about assistive technologies and their benefits	Dumitru, C. (2025). Assistive Technology and Alternative and Augmentative Communication Options in the Language Skills Development of Students with Specific Learning Disorders. *Education Sciences*, *15*(2), 170. https://doi.org/10.3390/educsci15020170 Al-Azawei, A., Serenelli, F., & Lundqvist, K. (2016). Universal Design for Learning (UDL): A content analysis of peer reviewed journals from 2012 to 2015. *Journal of the Scholarship of Teaching and Learning*, *16*(3), 39-56. https://doi.org/10.14434/josotl.v16i3.19295 Andrade, H., & Valtcheva, A. (2009). Promoting Learning and Achievement Through Self-Assessment. *Theory Into Practice*, *48*(1), 12–19. https://doi.org/10.1080/00405840802577544	1 hour
3	Workshop	Designing Teaching Strategies and Learning Environments for Children with ASD (tailored to different learning profiles)	Create a concept map Prepare a teaching plan	Wong, C., Odom, S.L., Hume, K.A. *et al.* (2015). Evidence-Based Practices for Children, Youth, and Young Adults with Autism Spectrum Disorder: A Comprehensive Review. *J Autism Dev Disord* **45**, 1951–1966. https://doi.org/10.1007/s10803-014-2351-z	1 hour

				Ashburner, J., Ziviani, J., & Rodger, S. (2010). Surviving in the mainstream: Capacity of children with autism spectrum disorders to perform academically and regulate their emotions and behaviour at school. *Research in Autism Spectrum Disorders*, *4*(1), 18-27. https://doi.org/10.1016/j.rasd.2009.07.002	
4	Workshop	Alternative and augmentative communication (AAC) tools: Functions and Classroom Use	Analyse and compare 2 AAC tools Design using Canva, Book Creator, or similar tools Design a poster, story, or video with technology	Dumitru, C. (2025). Assistive Technology and Alternative and Augmentative Communication Options in the Language Skills Development of Students with Specific Learning Disorders. *Education Sciences*, *15*(2), 170. https://doi.org/10.3390/educsci15020170 Zaharudin, R., Izhar, N. A., & Hwa, D. L. (2024). Evaluating mobile application as assistive technology to improve students with learning disabilities for communication, personal care and physical function. *International Journal of Learning, Teaching and Educational Research*, *23*(8), 19-37. https://doi.org/10.26803/ijlter.23.8.2 Dell, A. G., Newton, D. A., & Petroff, J. G. (2012). *Assistive technology in the classroom: Enhancing the school experiences of students with disabilities.* Pearson Education. Beukelman, D. & Light, J. (2020). Augmentative and Alternative Communication: Supporting Children and Adults with Complex Communication Needs, 5th Edition. *eTextbooks for Students*. 588. https://stars.library.ucf.edu/etextbooks/588	1 hour
5	Seminar	Digital Emotional Coaching and Crisis Management 　Digital Observation and Reflective Report 　Creating a Digital Assistive Tool Prototype (e.g., timer, visual cue, social story app) 　Developing a strategy on how to integrate assistive technologies into classroom routines	Solve a case study and propose a tech-based support plan Fill observation sheet and write personal reflection Design a digital classroom support tool	Scarpa, A., White, S. W., & Attwood, T. (Eds.). (2013). *CBT for children and adolescents with high-functioning autism spectrum disorders*. Guilford Press. Papoutsi,C. (2023). Digital technologies and empathy for students with special education needs. *World Journal of Advanced Engineering Technology and Sciences*, *9*(2), 58-69. https://doi.org/10.30574/wjaets.2023.9.2.0197 Palermo, E. H., Young, A. V., Deswert, S., Brown, A., Goldberg, M., Sultanik, E., ... & Nuske, H. J. (2023). A digital mental health app incorporating wearable biosensing for teachers of children on the autism spectrum to support emotion regulation: Protocol for a pilot randomized controlled trial. *JMIR Research Protocols*, *12*(1), e45852. https://doi.org/10.2196/45852 Liu, R., Salisbury, J. P., Vahabzadeh, A., & Sahin, N. T. (2017). Feasibility of an autism-focused augmented reality smartglasses system for social communication and behavioural coaching. *Frontiers in pediatrics*, *5*, 145. https://doi.org/10.3389/fped.2017.00145	1 hour

3.4 Teaching & learning methods

- Interactive Direct Instruction
- Question and Answer
- Video Modelling
- Role Play
- Case-Based Teaching
- Cooperative Learning
- Demonstration with Guided Practice
- Reflective Practice
- Problem-Based Learning

3.5 Proposed Assessment methods

Method	Description	Weight
Digital Tool Prototype	Design and justify the use of one assistive technology (e.g., AAC app, visual schedule, timer)	30%
Case Study Reflection Paper	Analyse a real or hypothetical child's inclusive education needs and suggest tech-based interventions (2,000–2,500 words)	35%
Tech-Supported Lesson Plan	Create a mini-lesson plan integrating assistive tools and inclusive strategies + reflective commentary	20%
Active Participation	Assessment of active participation in workshops and group activities	15%

3.6 List of materials

*All materials are available in Appendix B.

1. Presentations

- Inclusive Learning Foundations (Appendix B.1.1)
- Assistive Technologies: Overview, Types, and Applications (Appendix B.2.1)
- Designing Learning Environments for Children with ASD: Tailored Approaches (Appendix B.3.1)
- Digital Emotional Coaching & Integrating Assistive Tools in Classrooms (Appendix B.4.1)
- Assessment and Self-Assessment in Inclusive Settings (Appendix B.5.1)

2. Worksheets & Templates
- Inclusive Classroom Design (Appendix B.1.2)
- Case Study Report Outline (Appendix B.1.3)
- Reflection Sheet (Appendix B.1.4)
- Assistive Tool Comparison Grid (Appendix B.2.2)
- Assistive Tool Checklist (Appendix B.2.3)
- Role-Play Scenario Cards (Printed Cards or Slides) (Appendix B.2.4)
- Peer Review Form (Appendix B.2.6)
- Concept Map (Appendix B.3.3)
- Lesson Plan Template (Appendix B.4.4)
- Self-Assessment Sheet (Appendix B.5.3)
- Group Reflection Grid Sheet (Appendix B.5.4)
- Exit Ticket Prompts Sheet (Appendix B.5.5)
- Reflection Log Template (Appendix B.5.6)

3. Guides & Handouts
- Mentoring Protocol: Roles, reflective questions, and session log (Appendix B.1.5)
- Starter Kit and Sensory Toolkit (Appendix B.4.3)

5. Visual Aids
- Sensory Processing Profiles Diagram (Appendix B.3.2)
- Emotional Regulation Tools Chart (Appendix B.4.2)
- Assessment Comparison Chart (Appendix B.5.2)

6. Resource Library (Articles & Links)
- Nelis, P., Pedaste, M., & Šuman, C. (2023). Applicability of the model of inclusive education in early childhood education: a case study. *Frontiers in Psychology*, *14*, 1120735. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2023.1120735/pdf (Appendix B.1.5)

- Beukelman, D. & Light, J. (2020). Augmentative and Alternative Communication: Supporting Children and Adults with Complex Communication Needs, 5th Edition. *eTextbooks for Students*. 588. https://stars.library.ucf.edu/etextbooks/588 (Appendix B.2.5)
- UDL Guidelines Summary Sheet (https://udlguidelines.cast.org/static/udlg_graphicorganizer_v2-2_numbers-no.pdf) (Appendix B.3.4)

3.7 Detailed Class Plan

Lecture - Inclusive Learning Foundations & Assessment Design

Segment	Learning Activity	Materials and Resources
Introduction to inclusive education in early childhood settings	Short presentation about inclusive learning foundations and guided discussion	Presentation - Inclusive Learning Foundations (Appendix B.1.1)
Applied Task	Group or peer work on the foundations of inclusive classroom design Work on a case study	Inclusive Classroom Design (Appendix B.1.2), Case Study Report Outline (Appendix B.1.3)
Reflection	Think–Pair–Share activity about "Why inclusive teaching" and reflection on the learnt concepts and principles.	• Reflection Sheet (Appendix B.1.4)
Assessment	Mini presentation about "Opinions on Inclusive Classroom Foundations" Mentor-mentee interviews	Course materials used in the lecture and Internet Article: Nelis, P., Pedaste, M., & Šuman, C. (2023). Applicability of the model of inclusive education in early childhood education: a case study. *Frontiers in Psychology*, *14*, 1120735. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2023.1120735/pdf Mentoring Protocol: Roles, reflective questions, and session log (Appendix B.1.5)

Lecture - Assistive Technologies: Overview, Types, and Applications

Segment	Learning Activity	Materials and Resources
Introduction to assistive technologies that can be used in early childhood education	Summary of the previous topic, short presentation about assistive technologies and guided discussion	Presentation - Assistive Technologies: Overview, Types, and Applications (Appendix B.2.1)
Applied Task	Scenario-based pair or group task – Role play through guided discussions – Towards more inclusive classroom and the support of assistive technologies	Assistive Tools and Tool Comparison Grid (Appendix B.2.2), Assistive Tool Checklist (Appendix B.2.3) Role-Play Scenarios (Appendix B.2.4)

Class discussion and Reflection	Think–Pair–Share activity "Why assistive technology matters for early intervention?" Class paper review and reflection on the activity.	Beukelman, D. & Light, J. (2020). Augmentative and Alternative Communication: Supporting Children and Adults with Complex Communication Needs, 5th Edition. *eTextbooks for Students*. 588. https://stars.library.ucf.edu/etextbooks/588 (Appendix B.2.5) Reflection Sheet (Appendix B.1.4)
Follow-up of Applied Task and Assessment	Form-based assessment regarding the selected assistive tools	Peer Review Form (Appendix B.2.6)

Workshop - Designing Learning Environments for Children with ASD: Tailored Approaches

Segment	Learning Activity	Materials and Resources
Introduction	Brief review of sensory, behavioural, and academic needs in ASD; interactive discussion on classroom barriers.	Presentation - Designing Learning Environments for Children with ASD: Tailored Approaches (Appendix B.3.1) Sensory Processing Profiles Diagram (Appendix B.3.2)
Group work	Create a concept map in groups showing design elements for a sensory-friendly classroom.	Concept Map (Appendix B.3.3) UDL Guidelines Summary Sheet (https://udlguidelines.cast.org/static/udlg_graphicorganizer_v2-2_numbers-no.pdf) (Appendix B.3.4)
Peer-work by exchanging ideas and reflection	Share one adaptation idea and justify its impact using Think–Pair–Share. Reflect on the activity.	Reflection Sheet (Appendix B.1.4)
Assessment	Work in groups and present your inclusive classroom design in pairs with rationale.	Students' Group Presentations

Workshop - Digital Emotional Coaching & Integrating Assistive Tools in Classrooms

Segment	Learning Activity	Materials and Resources
Introduction	Instructor-led demo of an emotional regulation app or wearable device; group discussion on triggers.	Presentation - Digital Emotional Coaching & Integrating Assistive Tools in Classrooms (Appendix B.4.1) Emotional Regulation Tools Chart (Appendix B.4.2)
Group work	Groups select one tool (e.g., visual timer, emotion tracker) and design a classroom integration plan.	Starter Kit and Sensory Toolkit Contents (Appendix B.4.3) Lesson Plan Template (Appendix B.4.4)
Peer-work and reflection	Pair sharing: "What could go wrong?" – Anticipating challenges with tech use in real settings. Reflection on the activity	Reflection Sheet (Appendix B.1.4)
Assessment	Design and pitch your digital classroom support prototype to peers.	Peer Review Form (Appendix B.2.6)

Seminar - Assessment and Self-Assessment in Inclusive Settings

Segment	Learning Activity	Materials and Resources
Introduction	Brief input on inclusive vs. traditional assessment; whole-group debate on fairness and flexibility.	Assessment and Self-Assessment in Inclusive Settings (Appendix B.5.1) Assessment Comparison Chart (Appendix B.5.2)
Group work	Groups analyse a student case study and complete a sample self-assessment form from the student's perspective.	Case Study Report Outline Template (Appendix B.1.3), Self-Assessment Sheet (Appendix B.5.3)
Group discussions and reflection	Discuss the question in Roundtable: How do assessment practices affect inclusion and engagement? Reflect on the activity.	Group Reflection Grid Sheet (Appendix B.5.4), Exit Ticket Prompts Sheet (Appendix B.5.5)
Assessment	Peer-assess each other's reflection logs and case analyses; brief instructor feedback session.	Peer Review Form (Appendix B.2.6), Reflection Log Template (Appendix B.5.6)