

Addressing Disparities in Reading and Writing Acquisition through Personalising Technologies: A Cognitive and Societal Perspective

Teacher Training National Course

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Iași, Romania

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Speakers: *Ramona Cirmsari, Dana Danaila, Alexandra Hanu – primary school teachers at EuroEd Primary School (solid expertise in the field of early and primary education, with a focus on developing literacy skills, understanding the cognitive, social and emotional factors that influence the acquisition of reading and writing, as well as designing teaching interventions adapted to the real needs of students, through the use of digital tools).*

Module 1: Early Literacy Development	
Topics covered	The Early Literacy Development training module is designed for primary school teachers and aims to develop the competencies needed to support early literacy through an integrated, student-centered approach grounded in current educational research. The module explores the essential pillars of literacy — phonological awareness, vocabulary, fluency, comprehension, and written expression — and their role in developing key literacy competencies. Participants will also examine approaches to assessing literacy competencies from the perspective of the PISA framework and its implications for educational practice. The module emphasizes the design of teaching and learning processes in relation to the factors that influence learning, such as motivation, self-regulation, individual differences, feedback, and classroom climate, while providing examples of effective instructional strategies adapted to students' needs. In addition, the course addresses aspects related to how students learn by promoting practices based on active learning, collaboration, reflection, and critical thinking, with the goal of creating meaningful and inclusive learning experiences in the field of early literacy.
Schedule	13:00-13:10 Pillars of Literacy and Literacy Skills & The Program for International Student Assessment (PISA) 13:10-13:20 Teaching and Learning from the Perspective of Factors Influencing Learning to Develop Literacy Skills 13:20 -13:40 Aspects Related to How Students Learn 13:40-14:00 Case studies & Group conversations
Teaching Methodology	Our approach has been developed on 4 pillars: 1. What we already know and what we want / need to know based on our context – connection between our knowledge and experience and the new content 2. Understanding the concepts – Having the same understanding for better implementation of any new intervention on reading and early functional literacy 3. What the studies tell us about reading, functional literacy – Our approach is evidence - based 4. What instruments / methods – How we make use if the theory in the real school contexts
Teaching Contents	Introduction to literacy difficulties. An overview of the impact of early literacy challenges on academic progress, emphasizing the importance of early identification and preventive strategies. Kids readiness for school (physical, emotional, social and cognitive development) Child evaluation instrument for school readiness Functional literacy competences Factors that influence students learning
Suggested Teaching	Early development of literacy competences and awareness regarding the importance of reading in the learning process (ppt presentation)

Material	
Suggested Bibliography	Conley, Mark W. (2019), Înțelegerea textelor și ariile curriculare, POLIROM Fisher, D., Frey, N., Brozo W., (2020), 50 de metode de instruire pentru a facilita înțelegerea unui text, POLIROM Hattie, J. (2018) Învățarea Vizibilă. Ghid pentru profesori, Editura Trei Citesc pentru a Învăța – program de formare acreditat, Asociația Română de Literație Experiențele de la clasă ale profesorilor formatori ARL, în domeniul literației
Online Resources	Test https://www.cognitrom.ro/produs/evaluarea-dezvoltarii-copii/ 3-6/7 year development assessment platform (PEDa) Evaluation tool https://prodidactica.md/wp-content/uploads/2024/04/Instrumente-copii.pdf Collection of tools for monitoring and evaluation of intercultural competence in preschool and school children. Methodological guide https://wearelumos.org/wp-content/uploads/2024/08/2. Evaluarea dezvoltarii copilului.pdf Assessment of Child Development Course support http://www.isjarad.ro/RED/SUPORT%20DE%20CURS.pdf How to identify and support students with learning difficulties? Article https://www.scribd.com/document/618872583/Psihopedagogia-copilului-cu-dificultati-de-invatare-final Psychopedagogy of the child with learning difficulties

Module 2: Cognitive Risk and Protective Factors for Reading Achievement

Topics covered	Cognitive risk factors play a crucial role in determining educational outcomes and a child's ability to learn effectively. This module aims to: 1) explore the concept of selective and sustained attention and its impact on learning; 2) examine the role of working memory in processing and retaining information; 3) analyze the role of executive functions specifically involved in reading.
Suggested schedule	14:00-14:10 Early Literacy: Fundamental Aspects 14:10-14:30 Literacy-relevant milestones in motor and language development in 5–8-year-olds 14:30-14:40 The role of executive functions in early literacy 14:40-15:00 Case studies & Group conversations
Teaching Methodology	- Interactive lectures, to provide foundational knowledge on societal and family contexts and their impact on learning. - Collaborative group activities and discussions, encourage teachers to connect course concepts to their own teaching practices. - Case studies & Group conversations, to practice applying inclusive approaches in diverse school environments.
Teaching Contents	- Motor and language milestones. Discuss how early motor development (e.g., hand-eye coordination) and language milestones (e.g., vocabulary acquisition) are foundational for early literacy skills, impacting children's ability to hold and manipulate writing tools, recognize letters, and form words. - Early literacy: definition, interventions, benefits of early literacy Fine and gross motor development, phonological awareness, written communication and their impact on early literacy - Attentional processes. Highlight the importance of selective and sustained attention in early learning. - Updating, cognitive control processes. Particularly, examine how children's e.g. ability to update

	information in working memory and impulse control help children's manage complex tasks in literacy learning, such as decoding and comprehending texts. - Executive functions: working memory, inhibitory control and cognitive flexibility on early literacy development.
Suggested Teaching Material	Module 2: Cognitive Risk and Protective Factors for Reading Achievement (ppt presentation)
Suggested Bibliography	Baddeley AD, Hitch GJ. Developments in the concept of working memory. <i>Neuropsychology</i>. 1994; 8:485–93. Bauerlein, M. (2022). The dumbest generation grows up: From stupefied youth to dangerous adults. Simon and Schuster Bowman, L. L., Levine, L. E., Waite, B. M., & Gendron, M. (2010). Can students really multitask? An experimental study of instant messaging while reading. <i>Computers & Education</i>, 54(4), 927-931. Carr, N. (2010). <i>The shallows: How the internet is changing the way we think, read and remember</i>. Atlantic Books Ltd. Catalano, H., Albulescu, I. (2024). <i>Educația timpurie digitală. Cadre teoretice și aplicative</i>. București: DPH Chassiakos, Y. L., Radesky, J., Christakis, D., Moreno, M. & Cross, C. (2016). Children and adolescents and digital media. <i>Pediatrics</i>, 138(5) Davidson MC, Amso D, Anderson LC, Diamond A. Development of cognitive control and executive functions from 4–13 years: evidence from manipulations of memory, inhibition, and task switching. <i>Neuropsychologia</i>. 2006; 44:2037–78. [PubMed: 16580701] Diamond A. Executive functions. <i>Annu Rev Psychol</i>. 2013;64:135-68. doi: 10.1146/annurev-psych-113011-143750. Epub 2012 Sep 27. PMID: 23020641; PMCID: PMC4084861. Fandakova, Y., & Hartley, C. A. (2020). Mechanisms of learning and plasticity in childhood and adolescence. <i>Developmental Cognitive Neuroscience</i>, 42, 100764. Garon N, Bryson SE, Smith IM. Executive function in preschoolers: a review using an integrative framework. <i>Psychol. Bull</i>. 2008; 134:31–60. [PubMed: 18193994] Haddock, A., Ward, N., Yu, R., & O'Dea, N. (2022). Positive effects of digital technology use by adolescents: A scoping review of the literature. <i>International Journal of Environmental Research and Public Health</i>, 19(21), 14009. Istrate, O., Velea, S., Ceobanu, C. (2025). <i>Pedagogia digitală</i>. Iași: Polirom Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. <i>Computers in human behavior</i>, 26(6), 1237-1245. Măirean, C. (2024). Modificarea profilului învățării individuale în era tehnologiilor digitale. În C. Ceobanu, C. Cucos, O. Istrate, & I.-O. Pânișoară (Coord.), <i>Educația digitală (ediția a II-a revăzută și adăugită)</i>, pp.197-206). Iași: Editura Polirom Miller EK, Cohen JD. An integrative theory of prefrontal cortex function. <i>Annu. Rev. Neurosci</i>. 2001; 24:167–202. [PubMed: 11283309] Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently?. <i>On the horizon</i>, 9(6), 1-6. Small, G. & Vorgan, G.(2008). <i>iBrain: Surviving the technological alteration of the modern mind</i>. New York, Harper. Smith EE, Jonides J. Storage and executive processes in the frontal lobes. <i>Science</i>. 1999; 283:1657–61. [PubMed: 10073923] Tapscott, D. (2009). <i>Grown up digital: How the net generation is changing your world</i>. New York, McGraw-Hill.
Suggested links to deepen the contents	American Academy of Pediatrics https://www.aap.org/?srsId=AfmBOoqE7-gSpwc5b8w9MXHroeWw7AJF7Pr4WtgMxp89-KMWWQKWMC3k The AAP's global mission is to attain optimal physical, mental, and social health and well-being for all children around the world. Kid Sense https://childdevelopment.com.au/contact-us Kid Sense offer educator-focused supports (including workshops, developing screening, and In-Education

	services to educational settings). Fine Motor Development Chart https://childdevelopment.com.au/resources/child-development-charts/fine-motor-developmental-chart Review the skills demonstrated by the child up to their current age. Gross Motor Development Chart https://childdevelopment.com.au/resources/child-development-charts/gross-motor-developmental-chart/ Review the skills demonstrated by the child up to their current age. Phonological (Sound) Awareness Development Chart https://childdevelopment.com.au/resources/child-development-charts/phonological-sound-awareness-developmental-chart-2/ Each stage of development assumes that the preceding stages have been successfully achieved. Written Communication Development Chart https://childdevelopment.com.au/resources/child-development-charts/written-communication-development-chart Written communication involves components of the physical performance of handwriting, typing, spelling, grammar and story planning. What Is Early Literacy, and What Are the Benefits? Wilson College, https://online.wilson.edu/resources/what-is-early-literacy/ Early literacy, or what young children do to begin understanding reading and writing before they receive formal education, is critical to children's development.
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Module 3: Societal Risk and Protective Factors for Reading Achievement

Topics covered	This module supports primary school teachers in understanding how societal, familial, school-based and policy-related factors influence children's reading achievement and the development of functional literacy. It explores the role of family educational resources, parents' attitudes toward reading, access to books, school culture, curriculum priorities, libraries, digital environments and national policies as either risk or protective factors in literacy development. Participants reflect on how contemporary challenges — including changing parenting practices, the effects of the pandemic, early digital exposure, attention difficulties and reduced tolerance to frustration — shape pupils' learning behaviours and engagement with reading. The module encourages teachers to look beyond visible behaviours, identify pupils' underlying needs, and design inclusive, motivating and psychologically safe learning environments that promote reading for pleasure, active participation, cognitive and metacognitive reading strategies, and equitable access to meaningful literacy experiences.
Suggested schedule	15:00-15:30 Factors influencing the level of functional literacy (Parents – the child's first teachers; The role of school in the lives of current generations; National educational policies; Supporting reading) 15:30-15:40 Learning resources 15:40-16:00 Case studies & Group conversations
Teaching Methodology	Interactive lectures to provide understanding of the concepts Good practices examples. Looking at the international approaches and our practices in schools Pair and group activities to better apply the theoretical knowledge to classroom practices
Teaching Contents	Exploring the factors that influence the reading process and students' literacy competences Educational resources in the families Minorities (Roma students) educational challenges (culture, inclusion, parents level of education) How reading time influences the learning journey of the students
Suggested Teaching Material	Module 3_Societal Risk and Protective Factors (PPT presentation)
Suggested Bibliography	European Literacy Policy Network (ELINET), May, 2015, Country Report Literacy in Romania
Suggested links to	Discover What's New from Reading Apprenticeship https://readingapprenticeship.org



deepen the contents	Reading Apprenticeship is a professional learning model that meets these challenges. Our approach is proven to develop student academic identity, engagement, subject-area knowledge, and disciplinary literacy.
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Module 4: Digital tools for learning disadvantages	
Topics covered	This training module is designed for primary school teachers and aims to develop a balanced understanding of the role of digital tools in supporting pupils who experience difficulties in acquiring reading and writing skills. The module explores how early exposure to technology shapes children's learning profiles, with particular attention to rapid information processing, preference for visual and interactive stimuli, the need for immediate feedback, and possible difficulties in sustaining attention during static or sequential learning tasks. Participants will analyse both the opportunities offered by educational applications, e-books, interactive platforms and multimedia resources for developing decoding, vocabulary and reading comprehension, as well as the risks associated with excessive or uncritical use of technology, such as dependence on audio-visual cues, reduced perseverance in printed-text reading, cognitive overload and weaker deep comprehension. A central focus will be placed on designing and evaluating effective, accessible and learner-centred multimedia materials, ensuring that images, text, sound, interactivity and feedback are selected purposefully to support genuine learning rather than momentary engagement. The module will also address the responsible use of artificial intelligence and digital design tools as support for teachers' work, while emphasising that teachers' professional judgement remains essential in adapting digital resources to pupils' needs. Through reflection, case studies and practical activities, participants will develop criteria and strategies for the balanced, ethical and pedagogically meaningful integration of digital tools into early literacy development.
Suggested schedule	16:00-16:10 The emergence of technology and early literacy 16:10-16:20 Peculiarities of the learning profile of preschoolers 16:20-16:30 The impact of digital tools on reading achievement: opportunities and risks & Collaborative group activity and discussions 16:30-16:50 Case studies & Group conversations 16:50-17:00 Review of Digital tools for training decoding and reading comprehension
Teaching Methodology	- Interactive lectures, to provide foundational knowledge on the impact of digital tools on literacy acquisition and the challenges they may pose. - Case studies, discussing real-world examples of digital strategies used in schools to support children with learning difficulties. - Collaborative group activities and discussions & Reflections, to engage teachers in exploring educational technologies for reading development.
Suggested Teaching Material	- Designing accessible educational technology for all children. Explore the importance of creating digital learning tools that are accessible to all children, ensuring inclusivity for those with varying needs and abilities. - Use of technology to support children in reading-writing development. Analyze how digital tools can enhance literacy skills, focusing on how they can aid in reading development while considering potential barriers. - Technology emergence and early literacy: opportunities and risks.
Suggested Teaching Material	Module 4: Digital tools for learning disadvantages (ppt presentation)
Suggested Bibliography	Fandakova, Y., & Hartley, C. A. (2020). The effects of digital learning on neural plasticity in children: Implications for literacy and reading comprehension. <i>Developmental Cognitive Neuroscience</i>, 45, 100839. Prensky, M. (2001). Digital Natives, Digital Immigrants. <i>On the Horizon</i>, 9(5), 1-6. Small, G., & Vorgan, G. (2008). <i>iBrain: Surviving the Technological Alteration of the Modern Mind</i>. Harper Collins. Kates, A. W., Wu, H., & Coryn, C. L. S. (2020). The effect of mobile learning on student performance: A meta-analysis. <i>Educational Research Review</i>, 30, 100325.

	Greenfield, P. M. (2009). Technology and informal education: What is taught, what is learned. <i>Science</i>, 323(5910), 69-71. Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. <i>Computers in Human Behavior</i>, 26(6), 1237-1245.
Suggested links to deepen the contents	Edutopia - The Dark Side of Educational Technology: https://www.edutopia.org/article/dark-side-educational-technology Common Sense Media - The Pros and Cons of Digital Tools in Schools: https://www.commonsense.org/education/articles/pros-and-cons-of-digital-tools-in-schools TeachThought - 10 Potential Disadvantages of Digital Learning: https://www.teachthought.com/technology/disadvantages-of-digital-learning/ Harvard Graduate School of Education - Screen Time and Learning: https://www.gse.harvard.edu/news/uk/20/07/screen-time-and-learning