

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

28 – 29 April 2025

Iași, Romania

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Day 1

Speaker: *Liliana ROMANIUC, Assoc. Prof. PhD (Faculty of Letters, UAIC), president of Romanian Literacy Association, 40 years of experience in teaching, school management, training and administration of schools' system at the regional and national level. The main areas of expertise include: educational management, literacy, teacher training, schools reform and learning programs designing for teachers and school leaders.*

Module 1: Early Literacy Development and Associated Risk and Protective Factors	
Topics covered	Difficulties in acquiring literacy skills affect a significant portion of children in Europe, extending beyond those with neurodevelopmental disorders or disabilities. An estimated 20-30% of students face learning challenges that place them at risk of academic struggles (PISA, 2018; PIRLS, 2021). This module aims to provide an overview of the early signs of literacy difficulties and associated risk and protective factors. Specifically, we explore school readiness, emphasizing emotional, social, and cognitive development, as well as approaches to learning such as curiosity. The module also addresses the readiness of families and schools in supporting children's learning. Finally, we discuss assessment needs and strategies to help teachers identify early literacy challenges in 1st and 2nd grade students and their associated factors.
Schedule	13:00-13:30 Warm up: knowing ourselves, our students and our readiness for learning for today 13:30-13:45 What we want to learn and why 13:45 -15:00 Speaker input 15:00-15:15 Group conversations 15:15-15:30 Think – Pair – Share about the themes we covered
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 Material	Early development of literacy competences and awareness regarding the importance of reading in the learning process (ppt presentation)



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

Module 2: Societal Risk and Protective Factors for Reading Achievement

Topics covered	<p>Factors influencing the level of functional literacy</p> <ol style="list-style-type: none"> 1. Parents – the child’s first teachers 2. National educational policies 3. Supporting reading <p>Learning resources</p>
Suggested schedule	<p>15:30-15:40 Group conversations regarding reading from the brain perspective</p> <p>15:40-16:00 Speaker input (1)</p> <p>16:00-16:30 Group activity: Dispositions for reading: Reading Apprenticeship</p> <p>16:30-17:00 Speaker input (2). Key factors in the process of transforming teaching practices to improve literacy levels</p>
Teaching Methodology	<p>Interactive lectures to provide understanding of the concepts</p> <p>Good practices examples. Looking at the international approaches and our practices in schools</p> <p>Pair and group activities to better apply the theoretical knowledge to classroom practices</p>
Teaching Contents	<p>Exploring the factors that influence the reading process and students’ literacy competences</p> <p>Educational resources in the families</p> <p>Minorities (Roma students) educational challenges (culture, inclusion, parents level of education)</p> <p>How reading time influences the learning journey of the students</p>
Suggested Teaching Material	<p>Reading Apprenticeship (PPT presentation)</p>
Suggested Bibliography	<p>European Literacy Policy Network (ELINET), May, 2015, Country Report Literacy in Romania</p>
Suggested links to deepen the contents	<p>Discover What’s New from Reading Apprenticeship https://readingapprenticeship.org</p> <p>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.</p>



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Day 2

Speaker: Florin-Vasile FRUMOS, PhD Associate Professor and doctoral supervisor in Education Sciences at Alexandru Ioan Cuza University of Iasi, Faculty of Psychology and Education Sciences, Teachers' Training Department. With over 25 years of experience in initial and continuous teacher training and advanced educational research. Areas of expertise include Educational Psychology, Learning Psychology and Epistemic Cognition emerging topic, with an emphasis on learning and metacognition for compulsory education.

Module 3: 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	<p>13:00-13:30 Speaker input (1) Early Literacy: Fundamental Aspects</p> <p>13:30-14:00 Speaker input (2) Literacy-relevant milestones in motor and language development in 5–8-year-olds</p> <p>14:00-14:30 Collaborative group activities and discussions</p> <p>14:30-15:00 Speaker input (3) The role of executive functions in early literacy</p> <p>15:00-15:30 Role-playing & Reflection</p>
Teaching Methodology	<ul style="list-style-type: none"> - 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. - Role-playing and Reflection, to practice applying inclusive approaches in diverse school environments.
Teaching Contents	<ul style="list-style-type: none"> - 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 <p>Fine and gross motor development, phonological awareness, written communication and their impact on early literacy</p> <ul style="list-style-type: none"> - 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 3: Cognitive Risk and Protective Factors for Reading Achievement (ppt presentation)
Suggested Bibliography	<p>Baddeley AD, Hitch GJ. Developments in the concept of working memory. <i>Neuropsychology</i>. 1994; 8:485–93.</p> <p>Bauerlein, M. (2022). The dumbest generation grows up: From stupefied youth to dangerous adults. Simon and Schuster</p> <p>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.</p> <p>Carr, N. (2010). The shallows: How the internet is changing the way we think, read and remember. Atlantic Books Ltd.</p>



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	<p>Catalano, H., Albulescu, I. (2024). Educația timpurie digitală. Cadre teoretice și aplicative. București: DPH</p> <p>Chassiakos, Y. L., Radesky, J., Christakis, D., Moreno, M. & Cross, C. (2016). Children and adolescents and digital media. <i>Pediatrics</i>, 138(5)</p> <p>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]</p> <p>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.</p> <p>Fandakova, Y., & Hartley, C. A. (2020). Mechanisms of learning and plasticity in childhood and adolescence. <i>Developmental Cognitive Neuroscience</i>, 42, 100764.</p> <p>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]</p> <p>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.</p> <p>Istrate, O., Velea, S., Ceobanu, C. (2025). Pedagogia digitală. Iași: Polirom</p> <p>Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. <i>Computers in human behavior</i>, 26(6), 1237-1245.</p> <p>Măirean, C. (2024). Modificarea profilului învățării individuale în era tehnologiilor digitale. În C. Ceobanu, C. Cucuș, O. Istrate, & I.-O. Pânișoară (Coord.), <i>Educația digitală</i> (ediția a II-a revăzută și adăugită, pp.197-206). Iași: Editura Polirom</p> <p>Miller EK, Cohen JD. An integrative theory of prefrontal cortex function. <i>Annu. Rev. Neurosci.</i> 2001; 24:167–202. [PubMed: 11283309]</p> <p>Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently?. <i>On the horizon</i>, 9(6), 1-6.</p> <p>Small, G. & Vorgan, G.(2008). <i>iBrain: Surviving the technological alteration of the modern mind</i>. New York, Harper.</p> <p>Smith EE, Jonides J. Storage and executive processes in the frontal lobes. <i>Science</i>. 1999; 283:1657–61. [PubMed: 10073923]</p> <p>Tapscott, D. (2009). <i>Grown up digital: How the net generation is changing your world</i>. New York, McGraw-Hill.</p>
Suggested links to deepen the contents	<p>American Academy of Pediatrics https://www.aap.org/?srslid=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.</p> <p>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).</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Written Communication Development Chart https://childdevelopment.com.au/resources/child-development-charts/written-communication-</p>



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	<p>development-chart Written communication involves components of the physical performance of handwriting, typing, spelling, grammar and story planning.</p> <p>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.</p>
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Module 4: Digital tools for learning disadvantages

Topics covered	Digital learning tools have transformed educational practice, but they can also present some challenges. This module aims to: 1) examine the impact of digital tools on reading achievement, analysing both the benefits and challenges associated with their use in educational settings; 2) reflect on how to evaluate and design effective multimedia materials for learning; and 3) explore digital tools for training decoding and reading comprehension.
Suggested schedule	<p>15:45-16:00 Speaker input (1) The emergence of technology and early literacy 16:00-16:30 Case Study & Speaker input (2) Peculiarities of the learning profile of preschoolers 16:30-17:00 Speaker input (3) The impact of digital tools on reading achievement: opportunities and risks & Collaborative group activity and discussions 17:00-17:30 Speaker input (4) Review of Digital tools for training decoding and reading comprehension 17:30-18:00 Speaker input (5) Evaluating and Designing Effective Multimedia Materials & Reflections</p>
Teaching Methodology	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<p>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.</p> <p>Prensky, M. (2001). Digital Natives, Digital Immigrants. <i>On the Horizon</i>, 9(5), 1-6.</p> <p>Small, G., & Vorgan, G. (2008). <i>iBrain: Surviving the Technological Alteration of the Modern Mind</i>. Harper Collins.</p> <p>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.</p> <p>Greenfield, P. M. (2009). Technology and informal education: What is taught, what is learned. <i>Science</i>, 323(5910), 69-71.</p> <p>Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. <i>Computers in Human Behavior</i>, 26(6), 1237-1245.</p>
Suggested links to deepen the contents	Edutopia - The Dark Side of Educational Technology: https://www.edutopia.org/article/dark-side-educational-technology



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READY

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Common Sense Media - The Pros and Cons of Digital Tools in Schools:

<https://www.common sense.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>



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