



Research Programme

Education and Learning

A recent report of the Scientific Advisory Council to the national government pictures the future position of the Netherlands as a high-tech industrial, trading and services country with a strong international orientation¹. In these sectors, the traditional workplace with hierarchical line management and a high degree of labor division loses terrain rapidly and is increasingly replaced by work contexts that capitalize on professional autonomy, creativity, self-regulation and interdisciplinary collaboration. In addition, the cultural and linguistic diversification of society brings major challenges such as increasing educational inequality, cultural polarization and radicalization², but also opportunities pertaining to the advantages of growing up multilingual and to the need to bridge perspectives which promotes critical-constructive thinking and global citizenship. There is growing awareness that the education system is pushed to its limits in addressing these challenges and opportunities. For example, fostering skills to meet the new demands of the economy while also teaching basic academic skills, requires innovation of curriculum and pedagogy. Adapting to individual learners' needs and actualizing the full potential of learners of varied ability levels, requires innovative personalized learning arrangements and differentiation strategies. Initiatives focusing on integration of school-based education with informal education in extra-curricular programs, underscore the need to coordinate formal and informal education.

In order to address these challenges, we study the development of the knowledge, skills, and attitudes that individuals need for optimal participation in society, and how education can support this. We study how informal and formal education contexts from early childhood to adulthood can be coordinated so as to provide powerful environments for learning and development across contexts. More specifically, we aim to:

1. Study the development and education of basic skills in early and middle childhood.

We examine, in multi-ethnic and multilingual groups, how family and early education and care settings can support the development of basic cognitive, language, math and social skills, including executive functions, self-regulation, and creativity. This research addresses early disparities by socioeconomic, cultural and sociolinguistic background, and how to prevent or reduce them.

¹ WRR (2013), <https://www.wrr.nl/publicaties/rapporten/2013/11/04/naar-een-lerende-economie>

² Kleijwegt, M. (2016). *Twee werelden, twee werkelijkheden: Hoe ga je daar als docent mee om?* [Two worlds, two realities: how can teachers deal with that?]. The Hague: Ministry of Education, Culture, and Sciences.

Current investments in many countries in early education and family support to increase equity build on the knowledge base to which we contribute.

2. *Unravel the social and intercultural dynamics of classroom interactions.*

We study the factors that determine the quality of teacher-student and student-student relationships, and the role they play in knowledge and skill development, in teachers' and students' well-being, and in students' sense of belonging. Moreover, we study how social processes in classrooms and schools help (or hinder) the bridging of different cultural perspectives and creation of a critical-constructive intercultural space, which is essential to address current challenges of cultural polarization and radicalization.

3. *Identify principles of instructional design for powerful learning environments.*

We design and evaluate models of personalized learning trajectories and differentiated instruction at all educational levels. We study how to scaffold and train self-regulated learning skills, how to design effective (technology-enhanced) adaptive learning environments for students, and how to design support for teachers in implementing adaptive instruction in their classrooms. In addition, we study design principles to enhance cognitive, social, and motivational processes in multimedia learning environments.

4. *Improve professional development and learning in organizations.*

Professionals in society's care and education systems from early childhood to adulthood hold the key to the effectiveness of these systems. Our research focuses on dynamic models of continuous professionalization, involving recurrent cycles of feedback and reflection. We study professionals as embedded in (multidisciplinary) teams within particular organizational configurations and examine the impact of leadership, communication, and the organization's social mission on professional development and educational effectiveness.