

## Overview research program

Teaching and Learning Principle		Theoretical Perspective(s)	Practical tools and support	ICLON research staff involved	Ongoing projects including content domain and level (secondary education (SE); higher education (HE))	Focus		Sector		Educational purpose domain			
						Student learning (ST)	Teacher learning (T)	Secondary Education	Higher Education	Qualification	Socialization	Personal development	
<b>Perspective based</b>	Learning is promoted when learners (learn to) use domain-specific ways of thinking (formulated in question agendas) to explore, structure and solve disciplinary or interdisciplinary tasks	Ecological	<ul style="list-style-type: none"> <li>Perspectives elaborated for many subjects.</li> <li>Mapping and sorting tasks for eliciting and assessing perspectives</li> <li>Perspectives as design tool (lessons, learning progressions and curricula)</li> <li>Perspectives as thinking tools for students</li> </ul>	<a href="#">Janssen Dam</a>	Landa: Chemistry/ Particle & Thermodynamical perspectives	x	x	x		x			
					Kraakman; Chemistry/Particle/Experimental Design perspective	x	x	x		x			
					<a href="#">Den Otter: Chemistry/Particle/Demonstration practicals</a>	x	x	x		x			
					Ottenhof: Biology/ Ecological perspective	x	x	x					
					<a href="#">De Boer: Biology / Multiple biological perspectives for lesson design</a>		x	x	x	x			x
<b>Whole task first</b>  <b>Scaffolding</b>	Learning is promoted when learners acquire component knowledge and skills in the context of (real-world) tasks.  Learning is promoted when support is adapted to learners needs	Situated Cognitive	<ul style="list-style-type: none"> <li>Toolkits for making a range of general and domain specific teaching approaches practical:               <ul style="list-style-type: none"> <li>Direct instruction</li> <li>Cognitive apprenticeship</li> <li>Inquiry based learning</li> <li>Adaptive teaching</li> </ul> </li> <li>Set of tasks to trigger intercultural sensitive teaching</li> <li>Guidelines for professional development of teacher in transnational higher education</li> <li>Metaphors of research and researchers</li> <li>TTQ: Teaching with technology Questionnaire</li> <li>Critical incident tasks</li> <li>Geographical mysteries</li> <li>Scrum scenario</li> <li>Overview of serious games</li> <li>Eye-tracking set</li> <li>Student perception research integration questionnaire (SPRQ)</li> </ul>	<a href="#">Janssen Dam</a> <a href="#">De Jong</a> <a href="#">Admiraal</a> Berry <a href="#">Meirink</a> <a href="#">Saab</a> <a href="#">Van der Rijst</a> Van Driel	<a href="#">Tran: intercultural awareness in EFL teaching</a>	x	x		x	x	x		
					Karkdijk: mysteries in Geography teaching	x	x	x		x			
					Van der Kamp: creative problem-finding in visual arts education	x	x	x		x			
					Vogelzang: The use of Scrum pedagogy in chemistry education	x	x	x		x			
					Huizenga: Games-based learning	x	x	x		x			
					Kragten: process diagram in biology	x	x	x		x			
					Landa: Chemistry/ Particle & Thermodynamical perspectives	x	x	x		x			
					Kraakman; Chemistry/Particle/Experimental Design perspective	x	x	x		x			
					<a href="#">Den Otter: Chemistry/Particle/Demonstration practicals</a>	x	x	x		x			
					Ottenhof: Biology/ Ecological perspective	x	x	x					
					<a href="#">De Boer: Biology / Multiple biological perspectives for lesson design</a>		x	x	x	x			x
					<a href="#">Wieringa: Biology / Lesson design</a>		x	x		x	x		x
					<a href="#">De Vrind: Foreign languages /Adaptive teaching of speaking skills</a>	x	x	x		x			x
					De Winde: Dutch /Paragraph writing	x	x	x		x			x
					<a href="#">Van Kampen: CLIL teaching / Teacher and students</a>			x		x			
<a href="#">Zee: teaching open online education / Teacher and student</a>							x	x					
<a href="#">Zwaanswijk: Kenniswerkplaats diversiteit</a>					x	x			x	x			

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					Lamers: transnational education and professional learning / Teacher				x	x		
					<a href="#">Theeuwes: intercultural sensitivity in teaching / Teacher and students</a>			x	x	x	x	
					<a href="#">Stollman: adaptive teaching / Teacher and students</a>			x		x		
					<a href="#">Vossen: Research and design in secondary science education</a>		x	x		x		
					<a href="#">NRO-project (PPO): Students learning to do research / Teacher and students</a>			x		x		
					NRO-projects (OPRO) Teaching with technology / Teacher and students			x		x		
					NRO-project (Lerarenagenda): Inquiry-based teaching / Teacher			x		x		
					Research lab Calvijn Goes: Teaching reading skills in Science and Social Sciences / Teacher and students			x		x		
					Research lab Lucas Den Haag: Teaching autonomy in primary education / Teacher and students							x
					NRO-project. Learning progressions for science teachers for inquiry-based teaching	x		x		x		
<b>Recognition based heuristic search</b>	Learning is promoted when learners (learn to) recognize problemtypes and (learn to) use heuristics (cost-effective procedures) to selectively search the remaining space.	Cognitive	<ul style="list-style-type: none"> <li>Tools for eliciting several levels of recognition and related heuristics</li> <li>Tools for designing education that support recognition based heuristic search for solving complex problems.</li> </ul>	<a href="#">Janssen</a>	<a href="#">Kop: Mathematics / Graphing formulas</a>	x	x	x		x		
					<a href="#">Pouwelse: Primitive functions</a>	x	x	x	x	x		
<b>Goal system based</b>	Learning is promoted when its builds on learners multiple goals (these goals are organized in a multilevel hierarchy of goals and means)	Ecological	<ul style="list-style-type: none"> <li>Laddering interview method for co-constructing goal systems</li> <li>PPA-CCT methodology for studying career choice for teaching</li> <li>See also bridging methodology (below)</li> </ul>	<a href="#">Janssen</a> <a href="#">Dam</a> <a href="#">De Jong</a> <a href="#">Tigelaar</a>	<a href="#">Wieringa: Biology / Lesson design</a>		x	x		x	x	x
					Oyserman: Sign language	x	x	x	x	x	x	x
					<a href="#">Zweiris: Balancing qualification, socialization and personal development</a>		x	x		x	x	x
					<a href="#">Jia: Mathematics / Chinese math reform</a>		x	x		x		
					<a href="#">Kuijpers: STEM / Teacher career choices</a>		x	x	x	x	x	x
					<a href="#">Ouden: Religious education / Practical knowledge for promoting religious identity development</a>		x	x		x	x	x

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<b>Bridging</b>	Learning is promoted when it allows learners to expand their repertoire by stepwise recombinations and adaptations of existing building blocks (modularity) in a way that enable them to see each step as better way to achieve their personally valued goals (satisfying).	Ecological	<ul style="list-style-type: none"> <li>Bridging methodology for developing learning trajectories for teachers to expand their repertoire (in the context of educational reforms)</li> </ul>	<a href="#">Janssen Dam De Jong</a>	<a href="#">Jia: Mathematics / Chinese math reform</a>		x	x		x				
					Soto Koelemeijer: Mathematics. Shaping Mathematics into stories	x	x	x		x	x	x		
					<a href="#">Den Otter: Chemistry/Particle/Demonstration practicals</a>	x	x	x		x				
					Ottenhof: Biology/ Ecological perspective	x	x	x						
					<a href="#">De Vrind: Foreign languages /Adaptive teaching of speaking skills</a>	x	x	x		x			x	
					De Winde: Dutch /Paragraph writing	x	x	x		x				
<b>Learning from success</b>	Learning is promoted when learners formulate resolutions based on reflection on positive experiences.	Ecological Cognitive	<ul style="list-style-type: none"> <li>Tools for learning from success experiences</li> <li>MECI-interview (motivating for educational change interview) to develop intentions for change in the context of educational reforms.</li> </ul>	<a href="#">Janssen Tigelaar</a>	<a href="#">Dam: Using a modular, success-oriented approach to make activating teaching methods practical for pre-service science teachers</a>		X	X		X	X			
					<a href="#">De Boer. Multiple perspectives and learning from success in lesson design</a>		x	x		x	x			
<b>Collaborative learning</b>	Learning is promoted when learners share ideas and experiences, assist each other and work together	Cognitive Situated Ecological	<ul style="list-style-type: none"> <li>Design tool for collaborative learning tasks in higher education</li> <li>List of open resources for HE</li> <li>SCAN Schools as PLC</li> <li>SCSS: Sense of Community in School Scale</li> </ul>	<a href="#">Admiraal Berry Meirink Saab Van der Rijst</a>	<a href="#">De Hei: collaborative learning</a>	x	x		x		x			
					<a href="#">Smit: Teachers and students as partners in research</a>	x	x	x	x		x			
					<a href="#">Van Schaik: Teachers' knowledge co-construction</a>		x	x					x	
					Rumiantsew: Learning labs in conservatoire education	x	x		x				x	
					<a href="#">De Jong: professional learning communities</a>		x	x						x
					Galikyan: collaborative learning in online settings	x	x		x	x				
					<a href="#">Guo: remote learning labs</a>	x			x	x				
					Baas: Teaching with Open Online Resource		x		x				x	
					NRO-project (OPRO): schools as professional learning communities									

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					<a href="#">NRO-project (PPO): teachers' knowledge sharing</a>							
<b>Feedback</b>	Learning is promoted when learners receive feedback that connects their needs and competency	Situated	<ul style="list-style-type: none"> <li>Tools for (peer) feedback</li> </ul>	<a href="#">Admiraal Berry</a> <a href="#">Meirink</a> <a href="#">Saab</a> <a href="#">Tigelaar</a> Van Driel	<a href="#">Jin: Novice-expert interaction in professional learning</a>	x	x	x		x		
					<a href="#">Zhang: University-school partnerships in professional learning</a>	x	x	x		x		
					Wurth: feedback in L1 teaching	x	x	x		x		
					<a href="#">Day: intermediate assessment</a>	x	x		x	x		
					<a href="#">Huisman: peer feedback</a>	x	x		x	x		
					NRO-project (PPO): Teaching with computer-based assessments	x	x	x		x		
					CEL-project: self- and peer assessment in teacher education	x	x		x	x		
<b>Interest</b>	Learning is promoted when it builds on students' interest both across contexts and time		<ul style="list-style-type: none"> <li>Tool for mapping students' interest</li> </ul>	Akkerman Bronkhorst	<a href="#">Ziegler: multiple interests pre-university and university education</a>	x		x	x	x	x	x
					<a href="#">Draijer: multiple interests general and higher education</a>	x		x	x	x	x	x
					<a href="#">Beek: multiple interests pre-vocational and vocational education</a>	x		x		x	x	x
					<a href="#">Vulperhorst: multiple interests from secondary to higher education</a>	x		x	x	x	x	x
					<a href="#">Slot: Multiple interest in and out of school over time</a>	x		x		x	x	x
<b>Engaging</b>	Learning is promoted when learners pay dedicated attention to their learning process and tasks	Cognitive Situated	<ul style="list-style-type: none"> <li>Taxonomy of MOOCs</li> <li>Tool to measure L2 motivation</li> </ul>	<a href="#">Admiraal</a> <a href="#">Meirink</a> <a href="#">Saab</a> <a href="#">Van der Rijst</a> Van Driel <a href="#">Mearns</a>	Kroneman: peer educator intervention in LGTB education	x	x	x			x	
					Hendriks: cognitive engagement in medical MOOCs		x		x	x		
					<a href="#">Vereijken: student engagement with research in medical education</a>		x	x	x	x		
					Pilli (postdoc): learning objectives and outcomes of MOOCs		x	x	x	x		
					De Heer: Teaching talent development in primary education		x		x			x
					<a href="#">NRO-project (Lerarenagenda): teacher research</a>		x	x				x
					NRO-project (PROBO): Teachers' professional space		x	x				x

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					NRO-project (PPO): Principals' support to engage teachers		x	x				x			
<b>Connecting</b>	Learning is promoted when learners feel connected to school and schooling	Cognitive Situated Ecological	<ul style="list-style-type: none"> <li>List of democratic values in education</li> <li>QTI-SE: Quantitative measurement of teachers' self-efficacy in interpersonal relationships with students</li> </ul>	<a href="#">Admiraal</a> <a href="#">Berry</a> <a href="#">Meirink</a> <a href="#">Saab</a> <a href="#">Tigelaar</a> <a href="#">Van der Rijst</a> Van Driel	<a href="#">Moses: student-teachers engagement with teaching</a>		x		x		x				
					<a href="#">Keijzer: rebound programs for at-risk adolescents</a>	x	x	x			x				
					Klunder: remote teaching with chronical-ill children		x								
					<a href="#">Le: democratic values in Vietnamese education</a>	x	x	x					x		
					<a href="#">Veldman: Interpersonal relationships of veteran teachers</a>		x	x						x	
					<a href="#">Wang: technology in rural schools</a>		x	x						x	
					<a href="#">Louws: Teachers' learning during their career</a>		x	x							
					<a href="#">Chen: Teachers' identity in language teaching</a>		x	x				x			