

# Curriculum Vitae Jeroen J. G. van Merriënboer

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## 1. General

Name	Jeroen Johannes Geertrudes van Merriënboer
Place of birth	Budel, The Netherlands
Date of birth	March 30, 1959
Marital status	Married, three children
Home address	Koninksemstraat 121 6215 KA Maastricht, The Netherlands Phone +31 43 3440960, Mobile +31 6 51047666
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## 2. Education

1977	Gymnasium β	Lyceum Fons Vitae, Amsterdam
1984	drs degree in experimental psychology (Dutch equivalent to MSc)	Free University of Amsterdam
	<i>Major:</i> Psychophysiology <i>Minors:</i> Human Factors (Technical University of Delft) and Multivariate Statistical Techniques (University of Utrecht) <i>Thesis:</i> The effects of fatigue on the efficiency of human information processing (supervised by prof. Dr. Co Orlebeke)	
1990	Doctor's degree, Cum Laude, in instructional technology	University of Twente, Enschede
	<i>Dissertation:</i> Teaching introductory computer programming: A perspective from instructional technology (supervised by prof. dr. Sanne Dijkstra)	

### 3. Working Experience

1977 – 1983	Several short-term appointments as teaching assistant and research assistant, Free University of Amsterdam, Department of Experimental Psychology
1983 – 1984	Junior Researcher, Free University of Amsterdam, Department of Experimental Psychology
1984 – 1987	Junior Researcher, University of Twente, Department of Instructional Technology
1987 – 1991	Assistant Professor, University of Twente, Department of Instructional Technology
1988 – 1995	Project supervisor and owner of Bijlstra & Van Merriënboer – Training Consultancy and Development
1991 – 1997	Associate professor of Instructional Technology, University of Twente, Department of Instructional Technology
1997 – 1998	Associate professor of Educational Psychology, University of Maastricht, Department of Cognitive Psychology
1998 – 2007	Full professor of Educational Technology and Research Program Director, Open University of the Netherlands, Educational Technology Expertise Center (OTEC)
2007 – 2009	Full professor of Educational Technology and Scientific Director, Open University of the Netherlands, Netherlands Laboratory for Lifelong Learning (NeLLL)
2009 –	Full professor of Learning and Instruction and Research Program Director, Department of Educational Development and Research / School of Health Professions Education, Maastricht University.

### 4. Awards and Honorary Chairs

1993	Outstanding Journal Article Award For the article Van Merriënboer, J., Jelsma, O., & Paas, F. (1992). Training for reflective expertise: A four-component instructional design model for complex cognitive skills. <i>Educational Technology, Research and Development</i> , 40(2), 23-43.	Division of Instructional Design (DID) of the Association for Educational Communications and Technology
1999	Outstanding Book-of-the-Year Award For the book Van Merriënboer, J. (1997). <i>Training complex cognitive skills</i> . Englewood Cliffs, NJ: Educational Technology Publications.	Association for Educational Communications and Technology
2000	World Leader in Educational Technology	Training Magazine, November issue, featuring in the article “Quiet Revolutionist”
2002	International Contributions Award	International Council of the Association for Educational Communications and Technology
2003	Best PhD Supervisor Award	Awarded by the PhD Student division of the Netherlands Educational Research Association (NERA)
2005	Honorary Chair Ererector prof. dr. L. Verhaegen	University of Hasselt, Belgium

### 5. Research Activities

Jeroen van Merriënboer started his research in the field of educational psychology and instructional design (ID) in the 1980s. His PhD project involved the design of introductory computer programming courses. He developed an instructional approach that became known as the ‘completion strategy’:

Learners start with the study of worked-out example programs, then complete increasingly larger parts of well-written, meaningful but incomplete computer programs, and finally design and write computer programs on their own. This approach lay the foundation for the development of the four-component instructional design model (*4C/ID-model*), which builds instructional blueprints from four interrelated components: (1) learning tasks (e.g., worked-out examples, completion tasks, conventional problems etc.), (2) supportive information, (3) procedural information, and (4) part-task practice. This model was first published in a prize-winning article in 1992 (van Merriënboer, Jelsma & Paas, 1992); a complete description was given in the prize-winning book *Training Complex Cognitive Skills* (van Merriënboer, 1997; also translated in Korean and Chinese), and a description of the model that provides the basis for a computer-based instructional design system was published in 2002 (Van Merriënboer, Clark, & de Croock; 2002). The latest version of the model is described in the book *Ten Steps to Complex Learning*, co-authored by prof. dr. Paul Kirschner (van Merriënboer & Kirschner, 2007). Nowadays, the 4C/ID-model is taught in many educational ID programs (both in the USA, Europe, Asia, and Australia) and broadly applied in educational practice (both in business and industry and schools for vocational and professional training). Recent descriptions of the model in study books can be found in Van Merriënboer 2007 and van Merriënboer & Kester 2007.

Since the beginning of the 1990s, van Merriënboer's research on the design of learning tasks (the first component of the 4C/ID-model) has been conducted in collaboration with John Sweller and his group at the University of New South Wales. Together with him a new version of Cognitive Load Theory (CLT) has been developed that includes the concept of 'germane' cognitive load, that is, load devoted to processes that are directly relevant for learning (Sweller, van Merriënboer, & Paas, 1998; van Merriënboer & Sweller, 2005). An article in *Educational Psychologist* describes a further integration of the 4C/ID-model with CLT (van Merriënboer, Kirschner, & Kester, 2003). While this research is not limiting itself to computer-based environments, one particularly important theme is how computers can improve design processes (e.g., van Merriënboer & Martens, 2002; van Merriënboer & Ayres, 2005) as well as learning processes in e-learning environments (e.g., van Merriënboer & Brand-Gruwel, 2005; van Merriënboer & Kester, 2005; van Merriënboer & Boot, 2005).

PhD project supervision	<ol style="list-style-type: none"> <li>1. Instructional control of cognitive load in the training of complex cognitive tasks (Fred Paas, March 5, 1993)</li> <li>2. Composing SQL queries: A study on problem-solving strategies in computer science education (Betsy van Dijk, August 23, 1996)</li> <li>3. The transfer paradox: Training design for troubleshooting skills (Marcel de Croock, June 18, 1999)</li> <li>4. On the proper treatment of learning and transfer: A study on introductory computer programming (Jan-Gerrit Schuurman, October 6, 1999)</li> <li>5. Efficient complex skill training into old age: Exploring the benefits of cognitive load theory (Pascal van Gerven, June 21, 2002)</li> <li>6. Student involvement in assessment: The training of peer assessment skills (Dominique Sluijsmans, June 28, 2002). <i>This dissertation received the 2003 dissertation award of the Netherlands Educational Research Association (NERA).</i></li> <li>7. The modality of text in multimedia instructions: Refining the design guidelines (Huib Tabbers, September 13, 2002)</li> <li>8. Timing of information presentation and the acquisition of complex skills (Liesbeth Kester, September 5, 2003)</li> <li>9. Process support for learning tasks in multimedia practicals (Rob Nadolski, March 5, 2004)</li> <li>10. Towards flexible program in higher education (Ad Schellekens, May 14, 2004)</li> </ol>
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	<ol style="list-style-type: none"> <li>11. Tools for the identification and description of competencies (Angela Stoof, March 4, 2005)</li> <li>12. Dynamic task selection in aviation training (Ron Salden, April 22, 2005)</li> <li>13. Building-block solutions for developing instructional software (Eddy Boot, December 9, 2005).</li> <li>14. Uncovering the problem-solving process to design effective worked examples (Tamara van Gog, April 28, 2006).</li> <li>15. Student perspectives on education: Implications for instructional re-design (Karen Könings, June 15, 2007). <i>This dissertation received the 2008 dissertation award of the Netherlands Educational Research Association (NERA).</i></li> <li>16. How to optimize cognitive load for learning from animated models (Pieter Wouters, December 7, 2007).</li> <li>17. Shared control over task selection – Helping students to select their own learning tasks (Gemma Corbalan Perez, April 25, 2008).</li> <li>18. Training complex judgment: The effects of critical thinking and contextual interference (Anne Helsdingen, november 7, 2008).</li> <li>19. Development portfolios in vocational education: Helping students to direct their own learning (Wendy Kicken, December 12, 2008).</li> <li>20. Individualized strategies for prior knowledge activation (Sandra Wetzels, December 18, 2009).</li> </ol> <p>Currently supervising PhD projects on metacognitive prompts in e-learning environments (Gerard van den Boom), reciprocal peer assessment in secondary education (Marjo van Zundert), design of development portfolios (Greet Fastre), acquisition of improvisation skills in music (Iwan Wopereis), future training in air traffic control (Ludo van Meeuwen), self-directed learning in the domain of system dynamics (Bettine Taminiau), segmentation of instructional animations (Ingrid Spanjers), and self-regulation in reading (Mariette van Loon). In addition, I am involved in several PhD supervision committees.</p>
Editorial work	<ul style="list-style-type: none"> <li>- <i>Educational Technology, Research and Development</i>, Editorial Board</li> <li>- <i>Journal of Computing in Higher Education</i>, Editorial Board;</li> <li>- <i>Computers in Human Behavior</i>, Consulting Board</li> <li>- <i>Educational Research Review</i>, Editorial Board</li> <li>- <i>Technology, Instruction, Cognition and Learning</i>, Editorial Board</li> <li>- <i>Journal of Educational Computing Research</i>, Editorial Review Board</li> <li>- <i>Educational Technology</i>, Contributing Editor</li> <li>- <i>Journal of Experimental Psychology – Applied</i>, Review Board</li> <li>- <i>International Journal for Virtual and Personal Learning Environments</i>, International Advisory Board</li> <li>- <i>Cognitive Processing – International Quarterly of Cognitive Science</i>, Editorial Board, Advisory Editor</li> <li>- <i>Tijdschrift voor Onderwijsinnovatie</i>, Chair of Editorial Advisory Board</li> <li>- <i>Tijdschrift voor Informaticaonderwijs</i>, Editorial Advisory Board</li> <li>- <i>Handboek Performanceverbetering</i>, Editorial Advisory Board</li> <li>- In addition, I am active as reviewer for major journals in the field of educational psychology and technology.</li> </ul>
Funding	<p>Since 2000, I acquired six projects as main applicant from the Netherlands Association for Scientific Research (NWO):</p> <ul style="list-style-type: none"> <li>- Personalized competence-based education through the dynamic selection of learning tasks (PROO)</li> </ul>

	<ul style="list-style-type: none"> <li>- Improving learning through adaptive design of instructional animations (Open Competition)</li> <li>- Learning control over task formats in competence-based education (PROO)</li> <li>- Objective and subjective powerful learning environments (PROO)</li> <li>- Observational learning from video-based expert models in multimedia learning (Open Competition)</li> <li>- Explorations in Learning and the Brain – PROO (with Jelle Jolles, Ton de Jong and others)</li> </ul> <p>Two of my PhD students acquired a VENI from NWO shortly after completing their dissertation (Liesbeth Kester and Tamara van Gog). Funding acquired from the European Commission includes the following projects: MODEM, Parleunet, ADAPTit, IPS_EE, Alfanet, Dipseil and others. Funding acquired from business and industry includes SPC Group, NLR, Arthur Anderson, ROC A12, and others. A recently acquired project (appr. 750 kEuro) in the domain of air traffic control is funded by the Knowledge Development Center (KDC) Mainport Schiphol. Funded studies have been conducted for the National Educational Council, NWO, and others.</p>
Long-term Visiting Professorships	<ul style="list-style-type: none"> <li>- 1995: University of Barcelona, Department of Educational Psychology, prof. dr. Begona Gros-Salvat (Spain)</li> <li>- 2003-2004: University of New South Wales, School of Education, prof. dr. John Sweller (Australia).</li> </ul>

## 6. Management Responsibilities

### *Maastricht University (2009-)*

- Research Program Director, School of Health Professions Education
- Member of the Management Team and Research Coordinator, Department of Educational Development and Research

### *Interuniversity Center for Educational Research (ICO)*

- Scientific Director (2007-)
- Educational Director (2005-2007)
- Member of the Management Team (1998-)
- Chair of the ICO division Innovative Learning Arrangements (2005-2007)
- Chair of the ICO division Instructional Design (1998-2005)

### *Open University of the Netherlands (1998-2009 )*

- Scientific Director of the Netherlands Laboratory for Lifelong Learning (2007-2009)
- Vice Dean (2003-2006) and Interim Dean (2006-2007) of the Educational Technology Expertise Center (OTEC)
- Research program director of the Educational Technology Expertise Center (1998-2007)
- Scientific director of the Netherlands Laboratory for Lifelong Learning (2007-2009)

### *Maastricht University (1997-1998)*

- Chair of the Department of Cognitive Psychology
- Member of the Educational Board of the Faculty of Psychology

### *University of Twente (1984-1997)*

- Faculty board member, responsible for the educational programs and public relations of the faculty (1991-1994)
- Vice-chair of the Teacher Training Program (1994-1997)
- Member of the board of the Department of Instructional Technology (secretary, 1995-1997)
- Member of the Educational Advisory Board of the University of Twente (1991-1994)

*Other*

- Member International Advisory Board Florida Center for Research in Science, Technology, Engineering and Mathematics (FCR-STEM) (2006-)
- Member of the scientific educational network of the National Science Foundation in Flanders (2002-)
- Member management team of the Netherlands Educational Research Association (NERA) (1998-2007)
- Chair NERA division Information and Communication Technology (2001-2007)
- Board member of the NERA-division Vocational and Business Training (1997-2005)
- Member of the Consortium for Teens and Technology (1999-2004)
- Member of the Research and Technology Group of the European Association for Distance Teaching Universities (EADTU, 1998-2002)
- Steering Committee Member of the European Prometheus network (1999-2001)
- Coordinator of the Special Interest Group Instructional Design of the European Association for Research on Learning and Instruction (EARLI, 1994-1998)

**7. Educational Activities**

<p>1987-1997 University of Twente</p>	<ul style="list-style-type: none"> <li>- Master's program in Educational Science and Technology</li> <li>- Teacher Education Program</li> <li>- International Master's program Educational and Training Systems Design</li> <li>- Master's program Communication Sciences</li> </ul> <p><i>1994: nominated for the University of Twente Teaching Award by the students of the Department of Education as the "most inspiring teacher".</i></p>	<ul style="list-style-type: none"> <li>- Responsible for courses in educational measurement, general and cognitive psychology, artificial intelligence, instructional technology, problem solving, motivation, instructional design, research methods, and others.</li> <li>- Member of curriculum development committee for Communication Sciences.</li> <li>- Teaching post-graduate courses for teachers (in cooperation with the University of Groningen) and designers in industry.</li> <li>- Supervision of about 50 master's theses.</li> <li>- Thesis advisor, which includes the acquisition of external thesis projects in business and industry.</li> </ul>
<p>1997-1998 University of Maastricht</p>	<ul style="list-style-type: none"> <li>- Master's program in Educational psychology</li> <li>- Master's program in Cognitive Ergonomics</li> </ul>	<ul style="list-style-type: none"> <li>- Responsible for setting up a new program in Educational Psychology, according to the Maastricht system of problem-based learning (PBL).</li> </ul>

		<ul style="list-style-type: none"> <li>- Teaching the courses Skills and Technology, Assessment in Education, Systems Thinking, Motivational design of instruction, and Simulations in training and human performance</li> </ul>
Interuniversity Center for Educational Research (ICO) 1992 -	<ul style="list-style-type: none"> <li>- PhD program in educational research</li> </ul>	<ul style="list-style-type: none"> <li>- Summer course on state-of-the-art in educational technology and design (with Peter Goodyear from Lancaster University)</li> <li>- Several thematic courses on cognitive load theory and educational design</li> <li>- ICO Introduction course (2004-)</li> </ul>
Open University of the Netherlands	<ul style="list-style-type: none"> <li>- Master's program Active Learning</li> <li>- Master Health Professional Education (MHPE)</li> </ul>	<ul style="list-style-type: none"> <li>- Involved in research courses of Active Learning; involvement in courses taught by the University of Maastricht in cooperation with the Open University of the Netherlands</li> </ul>

## 8. Memberships

- Dutch Educational Research Association (VOR)
- Dutch Psychonomics Society (NVP)
- European Association for Research on Learning and Instruction (EARLI)
- American Educational Research Association (AERA)
- Association for Educational Communications and Technology (AECT)
- International Research Network on Education and Training Design (IRNETD)

## 9. Software Prototypes

Many small prototypes have been developed for conducting experiments. Therefore, the list below only contains prototypes that have been used for a broad range of studies and that are documented in separate articles:

MacMFFT	An implementation of the Matching Familiar Figures Test (an instrument for measuring the cognitive style reflection-impulsivity) on the Apple Macintosh. Includes user manual and full documentation.
CASCO	Completion Assignment Constructor – an Intelligent Tutoring System for teaching computer programming, applying the completion strategy and using dynamic models for task selection and task construction.
Process-PC	A dynamical simulation of a water-alcohol distillery for training and research purposes. Includes full documentation and user manual. It is used in schools for middle vocational training, within educational programs in process technology.
Distiller	A system for building dynamical simulations of chemical processes, used for research and training on troubleshooting and fault management. Currently further developed at Florida State University.
ADAPT <sup>IT</sup>	Advanced Design Approach for Personalized Training – Interactive Tools. A

	computer-based design system for professional designers who develop training blueprints according to the 4C/ID-model. It is used for training design in professional organizations and institutes for professional education. A commercial version is available from <a href="http://www.enovateas.com">www.enovateas.com</a>
Care Village	An integrated system for the selection and assessment of learning tasks for students in senior vocational education. Has been implemented for students in nursing and care.
STEPP	Structured Task Evaluation and Planning Portfolio. A digital development portfolio for students in senior vocational education, with support for self-assessment and selection of future learning tasks. Has been implemented for hairstylist students.

## 10. Publications

### *Inaugural Addresses*

- Van Merriënboer, J.J.G. (2005, June). *Het ontwerpen van leertaken binnen de wetenschappen: 'Four-components instructional design' als generatief ontwerpmodel*. Inaugural address on the occasion of accepting the Honorary Chair Ererector prof. dr. L. Verhaegen at the University of Hasselt, June 8, Hasselt, Belgium.
- Van Merriënboer, J.J.G. (1999, June). *Cognition and multimedia design for complex learning*. Inaugural address on the occasion of accepting the Chair of Educational Technology Research at the Open University of the Netherlands, June 5, Heerlen, The Netherlands.

### *Authored Books*

- De Jong, T., van Gog, T., Jenks, K., Manlove, S., van Hell, J., Jolles, J., van Merrienboer, J. J. G., van Leeuwen, Th., & Boschloo, A. (2009). *Explorations in learning and the Brain: On the potential of cognitive neuroscience for Educational Science*. New York: Springer.
- Van Merriënboer, J. J. G., & Kirschner, P. A. (2007). *Ten steps to complex learning*. Mahwah, NJ: Erlbaum.
- Van Merriënboer, J. J. G. (2005). *4C/ID Model* [in Korean]. Seoul, Korea: Academy Press.
- Janssen-Noordman, A. M. B., & van Merriënboer, J. J. G. (2002). *Innovatief onderwijs ontwerpen: Via leertaken naar complexe vaardigheden* [Innovative instructional design: From learning tasks to complex skills]. Groningen, The Netherlands: Wolters Noordhoff.
- Van Merriënboer, J. J. G. (1997). *Training complex cognitive skills: A four-component instructional design model for technical training*. Englewood Cliffs, NJ: Educational Technology Publications.
- Van Merriënboer, J. J. G. (1990). *Teaching introductory computer programming - A perspective from instructional technology*. Enschede, The Netherlands: Bijlstra & Van Merriënboer.

### *Edited Books*

- Spector, J. M., Merrill, M. D., van Merriënboer, J. J. G., & Driscoll, M. P. (2008) (Eds.), *Handbook of research on educational communications and technology* (Third Ed.). Mahwah, NJ: Erlbaum/Routledge.
- Jochems, W., van Merriënboer, J. J. G., & Koper, R. (Eds.) (2004). *Integrated E-Learning*. London, UK: RoutledgeFalmer.
- Jochems, W., van Merriënboer, J. J. G., Koper, R., & Bastiaens, Th. J. (Eds.). (2004). *Een geïntegreerde benadering van e-learning* [An integrated approach to e-learning]. Groningen, The

Netherlands: Wolters Noordhoff.

- De Corte, E., Verschaffel, L., Entwistle, N., & van Merriënboer, J. J. G. (Eds.). (2003). *Unravelling basic components and dimensions of powerful learning environments*. Oxford: Elsevier Science.
- Lazonder, A., & van Merriënboer, J. J. G. (Eds.). (2003). *Probleemoplossen en instructie – Liber Amicorum voor prof. dr. Sanne Dijkstra* [problem solving and instruction – Liber Amicorum for prof. dr. Sanne Dijkstra]. Enschede, The Netherlands: Twente University Press.
- Van Merriënboer, J. J. G., Moerkerke, G., & Gros, B. (Eds.). (1998). *Instructional design for problem-based learning - Proceedings of the third workshop of the EARLI SIG Instructional Design*. Maastricht, The Netherlands: Maastricht University Press.
- Dijkstra, S., Krammer, H. P. M., & Van Merriënboer, J. J. G. (Eds.). (1992). *Instructional models in computer-based learning environments*. Heidelberg, Germany: Springer Verlag.

### ***Special Issues***

- Van Merriënboer, J. J. G., & Ayres, P. (Eds.). (2005). Research on cognitive load theory and its design implications for e-learning. *Educational Technology, Research and Development*, 53(3), Special Issue.
- Van Merriënboer, J. J. G., & Brand-Gruwel, S. (Eds.). (2005). The pedagogical use of information and communication technology in education: A Dutch perspective. *Computers in Human Behavior*, 21, Special Issue.
- Van Merriënboer, J. J. G., & Martens, R. (Eds.). (2002). Computer-based tools for instructional design. *Educational Technology, Research and Development*, 50(4), Special Issue.
- Van Merriënboer, J. J. G. (Ed.) (1994). Dutch research on knowledge-based instructional systems. *Computers in Human Behavior*, 10, Special Issue.

### ***Journal Articles***

- Corbalan, G., Kester, L., & van Merriënboer, J. J. G. (2009). Dynamic task selection: Effects of feedback and learner control on efficiency and motivation. *Learning and Instruction*, 19, 455-465.
- Corbalan, G., Kester, L., & van Merriënboer, J. J. G. (2009). Combining shared control with variability over surface features: Effects on transfer test performance and task involvement. *Computers in Human Behavior*, 25, 290-298.
- Fastre, G., van der Klink, M., & van Merriënboer, J. J. G. (2009). Onderzoek doen in de onderwijspraktijk, wat brengt het met zich mee? *Onderwijs en Gezondheidszorg*, 33(3), 6-9.
- Kicken, W., Brand-Gruwel, S., van Merriënboer, J. J. G., & Slot, W. (2009). Design and evaluation of a development portfolio: How to improve students' self-directed learning skills. *Instructional Science*, 37, 453-473.
- Kicken, W., Brand-Gruwel, S., van Merriënboer, J. J. G., & Slot, W. (2009). The effects of portfolio-based advice on the development of self-directed learning skills in secondary vocational education. *Educational Technology, Research and Development*, 57, 439-460.
- Van Merriënboer, J. J. G., Kirschner, P. A., Paas, F., Sloep, P. B., & Caniels, M. C. J. (2009). Towards an integrated approach for research on lifelong learning. *Educational Technology Magazine*, 49(3), 3-14.
- Van Merriënboer, J. J. G., & Sluijsmans, D. A. (2009). Toward a synthesis of cognitive load theory, four-component instructional design, and self-directed learning. *Educational Psychology Review*, 21, 55-66.
- Van Merriënboer, J. J. G., Wopereis, I., Bosker, R., Creemers, B., de Jong, A., Scheerens, J., & Simons, P. R. J. (2009). 20 Years Interuniversity Centre for Educational Research: A retrospective. *Pedagogische Studiën*, 86, 474-481.

- Wouters, P., Paas, F., & van Merriënboer, J. J. G. (2009). Observational learning from animated models: Effects of modality and reflection on transfer. *Contemporary Educational Psychology*, 34, 1-8.
- Boot, E., van Merriënboer, J. J. G., & Theunissen, N. (2008). Improving the development of instructional software: Three building-block solutions to interrelate design and production. *Computers in Human Behavior*, 24, 1275-1292.
- Boot, E. W., & van Merriënboer, J. J. G. (2008). Solutions for developing instructional software by creating and reusing learning objects. *Technology, Instruction, Cognition, and Learning*, 6(1), 1-28.
- Corbalan, G., Kester, L., & van Merriënboer, J. J. G. (2008). Selecting learning tasks: Effects of adaptation and shared control on efficiency and task involvement. *Contemporary Educational Psychology*, 33, 733-756.
- Jochems, W., & van Merriënboer, J. J. G. (2008). Reflecties op het programma onderwijsonderzoek 2008-2011. *Pedagogische Studien*, 85, 198-201.
- Kicken, W., Brand-Gruwel, S., & van Merriënboer, J. J. G. (2008). Scaffolding advice on task selection: A safe path toward self-directed learning in on-demand education. *Journal of Vocational Education and Training*, 60, 223-239.
- Klatter, E., & van Merriënboer, J. J. G. (2008). Het gevecht tegen de teloorgang van competentiegericht onderwijs. *Journaal voor Onderwijsvernieuwing*, 8(4), 38-39.
- Könings, K. D., Brand-Gruwel, S., van Merriënboer, J. J. G., & Broers, N. (2008). Does a new learning environment come up to students' expectations? A longitudinal study. *Journal of Educational Psychology*, 100, 535-548.
- Sluijsmans, D. M. A., Straetmans, G., & van Merriënboer, J. (2008). Integrating authentic assessment with competency based learning: the Protocol Portfolio Scoring. *Journal of Vocational Education and Training*, 60, 157-172.
- Van Gog, T., Paas, F., & van Merriënboer, J. J. G. (2008). Effects of studying sequences of process-oriented and product-oriented worked examples on troubleshooting transfer efficiency. *Learning and Instruction*, 18, 211-222.
- Wouters, P., Paas, F., & van Merriënboer, J. J. G. (2008). How to optimize learning from animated models: A review of guidelines based on cognitive load. *Review of Educational Research*, 78, 645-675.
- Boot, E. W., Nelson, J., van Merriënboer, J. J. G., & Gibbons, A. S. (2007). Stratification, elaboration and formalisation of design documents: Effects on the production of instructional materials. *British Journal of Educational Technology*, 38(5), 917-933.
- Boot, E. W., van Merriënboer, J. J. G., & Veerman, A. (2007). Novice and experienced instructional software developers: Effects on materials created with instructional software templates. *Educational Technology, Research and Development*, 55(6), 647-666.
- De Croock, M. B. M., & van Merriënboer, J. J. G. (2007). Paradoxical effects of information presentation formats and contextual interference on transfer of a complex cognitive skill. *Computers in Human Behavior*, 23(4), 1740-1761.
- Könings, K. D., Brand-Gruwel, S., & van Merriënboer, J. J. G. (2007). Teachers' perspectives on innovations: Implications for educational design. *Teaching and Teacher Education*, 23(6), 985-997.
- Könings, K. D., van Zundert, M. J., Brand-Gruwel, S., & van Merriënboer, J. J. G. (2007). Participatory design in secondary education: Is it a good idea? Students' and teachers' opinions on its desirability and feasibility. *Educational Studies*, 33(4), 445-465.
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### **Book Chapters**

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#### **Other Publications and Presentations**

- Van Merriënboer, J. J. G. (2009, January). *Adaptive Learning Environments based on Four-component Instructional Design*. Invited keynote for the Symposium Harnessing Collective Intelligence in E-learning Environments of ITEC (Interdisciplinary research on Technology, Education and Communication), January 8-9, 2009, Kortrijk, Belgium.
- Van Merriënboer, J. J. G., & Corbalan, G. (2009, April). *Scaffolding Self-Directed Learning through Shared Control*. Presentation at the Annual Conference of the American Educational Research Association (AERA), April 13-17, 2009, San Diego, USA.
- Van Merriënboer, J. J. G. (2009, May). 20 jaar ICO: *Een Retrospectief en Discussie over de Toekomst*. Presentation at the Onderwijsresearchdagen (ORD), May 27-29, 2009, Leuven, Belgium.
- Van Merriënboer, J. J. G. (2009, August). *Research on Instructional Design for Lifelong Learning*. Invited keynote for the Bi-annual Conference of the European Association for Research on Learning and Instruction (EARLI), August 25-29, 2009, Amsterdam, The Netherlands.
- Van Merriënboer, J. J. G. (August, 2009). Emerging Research Front article selection from the field of psychiatry/psychology: Cognitive load theory and complex learning: Recent developments and future directions, commentary by Jeroen J. G. van Merriënboer. *ScienceWatch*. See <http://sciencewatch.com/dr/erf/2009/09augerf/09augerfMerr/>
- Van Merriënboer, J. J. G. (2009, September). *Cognition and Instruction for Complex Learning*. Invited keynote for the Annual Educational Psychology Conference of the PAEPS, September 7-9, 2009, Saarbrücken, Germany.
- Van Merriënboer, J. J. G. (2009, September). *De vier componenten in competentiegericht onderwijs*. Presentation for MBO 2010, September 30, 2009, Nijkerk, The Netherlands.
- Van Merriënboer, J. J. G. (2009, December). *Met 4C/ID naar uitdagende leertaken: Cognitie, metacognitie en motivatie*. Presentation for Consortium Beroepsopleiding, December 10, 2009, Voorthuizen, The Netherlands.

- Van Merriënboer, J. J. G. (2009, December). *Competentieverricht onderwijs volgens 4C/ID*. Presentation for ARCUS College, December 17, 2009, Heerlen, The Netherlands.
- De Jong, A. J. M., van Gog, T., Jenks, K., Manlove, S., van Hell, J. G., Jolles, J., van Merriënboer, J. J. G., van Leeuwen, Th., & Boschloo, A. (2008). *Explorations in learning and the brain: On the potential of cognitive neuroscience for educational science*. The Hague, The Netherlands: NWO.
- Fastré, G. M. J., van der Klink, M., van Merriënboer, J. J. G., & Sluijsmans, D. M. A. (2008). Support in self-assessment in secondary vocational education. In G. Kanselaar, V. Jonker, P. A. Kirschner, & F. J. Prins (Eds.), *International perspectives in the learning sciences: Cre8ing a learning world*. Proceedings of the eight International Conference of the Learning Sciences, Part 3 (pp. 29-30). International Society of the Learning Sciences.
- Van Merriënboer, J. J. G. (2008). *Complex learning as a future challenge for educational research*. Keynote presentation for the ICO Winterschool, January 20-February 1, 2008, Jyväskylä, Finland.
- Van Merriënboer, J. J. G. (2008). *Het gevecht tegen de teloorgang van competentieverricht onderwijs [Fighting the loss of competence-based education]*. Invited presentation for Stichting Consortium Beroepsonderwijs, February 8, 2008, Nijkerk, The Netherlands.
- Van Merriënboer, J. J. G. (2008). *Instructional design for complex learning*. Invited presentation for East China Normal University, February 26, 2008, Shanghai, China.
- Van Merriënboer, J. J. G. (2008). *Ten steps to complex learning: A systematic approach to holistic instructional design*. Two-day workshop for East China Normal University, February 26-27, 2008, Shanghai, China.
- Van Merriënboer, J. J. G., & Sluijsmans, D. A. (2008). *Toward a synthesis between cognitive load theory and self-directed learning*. Presentation at the 2nd Cognitive Load Theory Conference, University of Wollongong, February 29-March 2, 2008, Wollongong, Australia.
- Van Merriënboer, J. J. G. (2008). *Four-component instructional design and self-directed learning*. Invited presentation for the School of Education at the University of Wollongong, March 3, 2008, Wollongong, Australia.
- Van Merriënboer, J. J. G. (2008). *Onderwijs innoveren voor een leven-lang-leren [Innovating education for lifelong learning]*. Invited presentation for the Amarantis Onderwijsgroep, October 7, 2008, Amsterdam, The Netherlands.
- Van Merriënboer, J. J. G. (2008). *Valkuilen bij het ontwerpen volgens 4C/ID [Pitfalls when designing with 4C/ID]*. Keynote presentation at the 4C/ID Gebruikersdag, November 13, 2008, Rotterdam, The Netherlands.
- Van Merriënboer, J. J. G. (2008). *Studenten prepareren voor een leven lang leren [Preparing students for lifelong learning]*. Invited presentation for the Nationaal Onderwijs Congres (NOC), November 20, 2008, Rotterdam, The Netherlands.
- Van Merriënboer, J. J. G. (2008). *Ten steps to complex learning*. Three-day workshop for Ludwig Maximilians Universitat, November 26-28, 2008, Munich, Germany.
- Van Gog, T., Van Hell, J. G., Jenks, K., Jolles, J., De Jong, T., Manlove, S., & Van Merriënboer, J. J. G. (2007). *Explorations in learning and the brain: A quick scan of the potential of neuroscience for education*. Quick scan for the Program Educational Research of the Netherlands Organisation for Scientific Research (NWO-PROO).
- Van Merriënboer, J. J. G. (2007). Voorwoord. In B. Hoogveld & H. Jansen (Eds.), *Opleiden voor de toekomst: Werken met het 4C-ID model in de praktijk* (pp. 9). Heerlen: Open Universiteit Nederland.
- Van Merriënboer, J. J. G. (2007, January). *Complex learning at the Open University of the Netherlands*. Invited presentation for the Festo Program for Applied Knowledge, January 8, 2007. Ludwig Maximilians University, Muenich, Germany.
- Van Merriënboer, J. J. G. (2007, January). *Ten steps to complex learning: A systematic approach to four-components instructional design*. Workshop for the European Patent Office, January 17-18, 2007. EPO, The Hague, The Netherlands.
- Van Merriënboer, J. J. G., & Boot, E. W. (2007, March). *Research on past and current training in the armed forces*. Invited presentation for the Development of Professional Performance Conference, March 2-4, 2007. Orlando, Florida, USA.
- Van Merriënboer, J. J. G. (2007, March). *Complex learning in Higher Professional Education*. Virtual Presentation for Utah State University and the ICLEPS consortium, March 15, 2007. Open University of the Netherlands, Heerlen, The Netherlands.
- Van Merriënboer, J. J. G. (2007, March). *CLT and self-directed learning: Systematic design of scaffolding*. Presentation at the First Cognitive Load Theory Conference, March 24-26, 2007. University of New South Wales, Sydney, Australia.
- Van Merriënboer, J. J. G. (2007, April). *A unified theory of cognition: Discussion*. Invited discussion at the Annual Conference of the American Educational Research Association (AERA), April 9-13, 2007. Chicago, Illinois, USA.
- Van Merriënboer, J. J. G. (2007, April). *Cognitive load theory and complex learning*. Invited presentation for the Port Security Project, April 16, 2007. Florida State University, Florida, USA.
- Van Merriënboer, J. J. G. (2007, April). *From cognitive load theory to self-directed complex learning*. Invited presentation for CyberMBA, April 26, 2007. Seoul, Korea.
- Van Merriënboer, J. J. G. (2007, April). *Ten steps to complex learning: A systematic approach to four-components instructional design*. Workshop for the 2007 International Conference of the Korean Society for Educational Technology (KSET), April 27-28, 2007. Seoul, Korea.
- Van Merriënboer, J. J. G. (2007, April). *Instructional design for the 21st century: From atomistic to holistic approaches*. Invited keynote for the 2007 International Conference of the Korean Society for Educational Technology (KSET), April 27-28, 2007. Seoul, Korea.
- Van Merriënboer, J. J. G. (2007, Mei). *Competentieverricht onderwijs: Uitgangspunten en misverstanden*. Invited keynote voor de Show & Share Studiedag, 9 mei, 2007. Hogeschool InHolland, Haarlem.
- Van Merriënboer, J. J. G. (2007, Juni). *ICT voor Complex Leren*. Invited keynote voor de OnderwijsResearchDagen (ORD),

- 6-8 juni, 2007. RUG, Groningen.
- Van Merriënboer, J. J. G. (2007, August). *The first principles: Conclusions and discussion*. Discussion at the Annual Conference of the European Association for Research on Learning and Instruction (EARLI), August 27-31, 2007. Budapest, Hungary.
- Van Merriënboer, J. J. G. (2007, August). *Trends in instructional design for complex learning*. Invited symposium at the Annual Conference of the European Association for Research on Learning and Instruction (EARLI), August 27-31, 2007. Budapest, Hungary.
- Clark, R., Feldon, D., van Merriënboer, J. J. G., Yates, K., & Early, S. (2007, August). *Cognitive task analysis for complex learning*. Presentation at the Annual Conference of the European Association for Research on Learning and Instruction (EARLI), August 27-31, 2007. Budapest, Hungary.
- Van Merriënboer, J. J. G., & van Gog, T. (2007, September). *Onderwijs innoveren met het brein in gedachten*. Presentatie voor het symposium 'Hersenen, leren en onderwijsinnovatie', t.g.v. de Opening van het Academisch Jaar, 3 september, 2007. Universiteit Maastricht, Maastricht.
- Van Merriënboer, J. J. G. (2007, September). *Kiezen en delen bij complex leren*. Invited keynote bij het 18e Nationale Decanensymposium, 13 september, 2007. Tropenmuseum, Amsterdam.
- Van Merriënboer, J. J. G. (2007, September). *The systematic development of competence-based curricula in VET: Ten steps to complex learning*. Invited presentation at the Conference Research on VET, 25-28 September, 2007. University of Göttingen, Göttingen, Germany.
- Van Merriënboer, J. J. G. (2007, November). *Vier componenten in competentiegericht onderwijs*. Lezing voor Fundeon, 9 november, 2007. Fundeon centrum voor de bouw, Harderwijk.
- Van Merriënboer, J. J. G. (2007, November). *In 10 stappen naar competentiegericht leren: Een systematische aanpak voor onderwijsontwerp conform 4C/ID*. Workshop voor Fundeon, 9 november, 2007. Fundeon centrum voor de bouw, Harderwijk.
- Van Merriënboer, J. J. G. (2007, November). *Wat is het nieuwe leren?* Lezing voor de SURF Onderwijsdagen, 14 November, 2007. Jaarbeurs, Utrecht.
- Van Merriënboer, J. J. G. (2007, November). *4C/ID: Verleden, heden en toekomst*. Presentatie voor de 4C/ID gebruikersconferentie, 30 november, 2007. Studiecentrum OUNL, Utrecht.
- Wouters, P., Van Gog, T., Van Merriënboer, J. J. G., De Koning, B., & Kirschner, P. A. (2007). Impressies van de AERA 2007 in Chicago: Divisie C 'Leren & Instructie' [Impressions of the AERA 2007 in Chicago: Division C 'Learning & Instruction']. *Pedagogische Studiën [Pedagogical Studies]*, 84, 315-317.
- Van Merriënboer, J. J. G. (2006). *Review: Succesfactoren voor instellingsbrede ICT-implementatie in het onderwijs*. Surf Edusite. Te vinden op <http://www.edusite.nl/edusite/publicaties/15859>
- Van Merriënboer, J. J. G. (2006, Januari). *Flexibilisering en de paradox van de keuze*. Lezing voor de themadag van de VOR-divisie ICT, 19 januari 2006, Saxion Hogescholen, Deventer.
- Van Merriënboer, J. J. G. (2006, Februari). *Vraaggestuurd leren in competentiegericht onderwijs*. Keynote voor de medewerkersdag van ROC A12, 9 februari 2006, ROC A12, Ede.
- Van Merriënboer, J. J. G. (2006, Februari). *Het construeren van leertaken voor competentiegericht onderwijs*. Workshop voor de medewerkersdag van ROC A12, 9 februari 2006, ROC A12, Ede.
- Van Merriënboer, J. J. G. (2006, March). *Innovative educational design: From the science of instruction to the art of teaching*. Keynote at the yearly CRWO conference, 31 March 2006, Oosterpoort, Groningen.
- Van Merriënboer, J. J. G., Corbalan, G., van Gog, T., Kester, L., & Kicken, W. (2006, Mei). *Vraagsturing en flexibilisering bij het gebruik van authentieke leertaken in het MBO*. Lezing gehouden bij de OnderwijsResearchDagen (ORD), 10-12 Mei 2006, Vrije Universiteit, Amsterdam.
- Van Merriënboer, J. J. G. (2006, Mei). *Van cognitieve architectuur naar onderwijsontwerp en –methoden*. Lezing voor de miniconferentie Master Active Learning, 19 mei 2006, Open Universiteit Nederland, Heerlen.
- Van Merriënboer, J. J. G. (2006, June). *Learning and teaching in the integrated curriculum*. Keynote at the ICLHE conference, 28-30 June 2006, University of Maastricht, Maastricht.
- Van Merriënboer, J. J. G. (2006, August). *The systematic development of integrated curricula in vocational and technical education*. Keynote at the international conference on Vocational and Technical Education (VTE 2006), August 17-18, Raffles City Convention Center, Singapore.
- Van Merriënboer, J. J. G. (2006, August). *Ten steps to complex learning*. Workshop for the Institute for Technical Education (ITE), August 16 2006, Institute for Technical Education, Singapore.
- Van Merriënboer, J. J. G. (2006, November). *Competentiegericht onderwijs: Van hapklare brokken naar leren met hoofd, hart en handen*. Keynote voor de VMBO-conferentie Competentiegericht Onderwijs Hoe-Zo? 14 november 2006, Oranje Nassaucollege, Zoetermeer .
- Van Merriënboer, J. J. G. (2006, November). *Van de leerling naar de meester in vraaggestuurd competentiegericht onderwijs*. Lezing voor de SURF Onderwijsdagen, 14-15 november 2006, Jaarbeurs, Utrecht .
- Van Merriënboer, J. J. G. (2005). Book review of H. Nelson & E. Stolterman, *The design way*. *British Journal of Educational Technology*, 36(1), 117-118.
- Van Merriënboer, J. J. G. (2005, April). *Het vier-componenten ontwerpmodel voor competentiegericht onderwijs*. Presentation for the management of Ons Middelbaar Onderwijs (OMO), April 13, Heerlen, The Netherlands.
- Van Merriënboer, J. J. G. (2005, June). *Het ontwerpen van leertaken binnen de wetenschappen: 'four-components instructional design' als generatief onderwijsmodel*. Inaugural address on behalf of accepting the Honorary Chair

- Ererector Verhaegen, June 8, University of Hasselt, Belgium.
- Van Merriënboer, J. J. G., & Kester, L. (2005, August). *Five design principles for Web-based learning: Their psychological basis and effects on transfer of learning*. Presentation held at the bi-annual conference of the European Association for Research on Learning and Instruction (EARLI), August 22-26, Nicosia, Cyprus.
- Van Merriënboer, J. J. G., Kester, L., & Paas, F. (2005, August). *Teaching complex rather than simple tasks: Implications for instruction and dynamic task selection*. Presentation held at the bi-annual conference of the European Association for Research on Learning and Instruction (EARLI), August 22-26, Nicosia, Cyprus.
- Van Merriënboer, J. J. G. (2005, August). *Extending Cognitive Load Theory and Instructional Design to the Development of Expert Performance*. Presentation held at the workshop of the International Center for Learning and Enhanced Performance Studies (ICLEPS), August 29-30, Heerlen, The Netherlands.
- Van Merriënboer, J. J. G. (2005, October). *Van de leerling naar de meester: Wat doet Merlijn de tovenaer?* Presentation for the annual educational meeting of Bouwradius, October 5, Harderwijk, The Netherlands.
- Van Merriënboer, J. J. G. (2005, October). *Learners in a changing learning landscape: Reflections from an Instructional Design perspective*. Presentation held at the yearly conference of the Association for Educational Communications and Technology (AECT), October 19-22, Orlando FL, U.S.A.
- Van Merriënboer, J. J. G. (2005, November). *Cognitive Load Theory and its influences on complex learning*. Invited presentation at the School of Education of the Georg-August Universität, November 1, Göttingen, Germany.
- Van Merriënboer, J. J. G., & de Croock, M. B. M. (2005, November). *Het construeren van leertaken voor opdrachtgestuurd onderwijs*. Workshop held at the University of Hasselt, November 16, University of Hasselt, Belgium.
- Van Merriënboer, J. J. G., & Sluijsmans, D. (2005, December). *Het vormgeven van autonoom leren in opdrachtgestuurd onderwijs*. Workshop held at the University of Hasselt, December 7, University of Hasselt, Belgium.
- Van Merriënboer, J. J. G. (2004, March). *4C/ID-model: Designing competency-based education*. Presentation for the Computing Ontologies Group of the Educational Board of the ACM, March 27, Heerlen, Open University of the Netherlands.
- Van Merriënboer, J. J. G. (2004, April). *Innovative ISD Methodologies*. Presentation for the Learning Systems Institute (LSI) at Florida State University, April 19, Tallahassee, USA.
- Van Merriënboer, J. J. G., Salden, R., Corbalan, G., de Croock, M., Kester, L., & Paas, F. (2004, October). *Dynamic selection of learning tasks according to the 4C/ID-model*. Paper presented at the annual conference of the Association for Educational Communications and Technology (AECT), October 19-22, Chicago, USA.
- Van Merriënboer, J. J. G. (2004, November). *Innovatief onderwijs ontwerpen met het 4C/ID-model*. Presentation for the department of InformatieTechnologie, Bibliotheek & Educatie (ITBE), November 8, Enschede, University of Twente.
- Van Merriënboer, J. J. G. (2004, November). *Competentieverricht opleiden*. Keynote presentatie op het Windesheim congres Vraaggestuurd Opleiden, November 9, Zwolle, Hogeschool Windesheim.
- Van Merriënboer, J. J. G. (2004, November). *The 4C/ID-model: Multimedia principles in environments for complex learning*. Presentation for the Department of Education at the University of Erfurt, November 11, Erfurt, Germany.
- Van Merriënboer, J. J. G. (2004, November). *Competentieverricht Onderwijs: Een Dilemma tussen Samenhang en Vraagsturing?* Keynote presentation at the Nederlands Onderwijs Congres (NOC), November 23, Eindhoven, The Netherlands.
- Van Merriënboer, J. J. G. (2004, November). *ICT en ontwerpprincipes bij competentieverricht opleiden*. Presentation at the VOR themaconferentie "Zin en onzin van leren met ICT", November 25, Heerlen, Open University of the Netherlands.
- Van Merriënboer, J. J. G. (2004, December). *4C/ID – 4 componenten, 10 stappen, en nieuwe ontwikkelingen*. Presentation at the Training Design Workshop 4C/ID, ADAPTIT, & ISM-LD, December 2, Amsterdam, National Aerospace Laboratory NLR.
- Van Merriënboer, J. J. G. (2003). Book review: Web-based training by Badrul H. Khan (Ed.). *British Journal of Educational Technology*, 34(1), 105.
- Van Merriënboer, J. J. G. (2003). Book review: Delivering Digitally – Managing the transition to the knowledge media by A. Inglis, P. Ling, & V. Joosten. *British Journal of Educational Technology*, 34(2), 233-234.
- Van Merriënboer, J. J. G. (2003, February). *De problematische relatie tussen instructie en probleemoplossen*. Presentation on behalf of the formal leave of prof. dr. Sanne Dijkstra from the University of Twente, February 27, Enschede, The Netherlands.
- Van Merriënboer, J. J. G. (2003, March). *Naar een didactiek voor e-leren: Onderwijsontwerp en ICT*. Presentation at the congres 'ICT en de succesvolle school', March 26, Utrecht, The Netherlands.
- Van Merriënboer, J. J. G. (2003, April). *4C/ID-model: 10 steps to complex learning*. Presentation at the European Patent Office (EPO), April 10, Munich, Germany.
- Van Merriënboer, J. J. G. (2003, April). *Research on information and communication technology in Dutch education*. Symposium organized at the annual conference of the American Educational Research Association (AERA), April 21-26, Chicago, USA.
- Van Merriënboer, J. J. G., & de Croock, M. B. M. (2003, April). *Adaptive e-learning: Adapting 4C/ID training programs to learner's learning capabilities*. Paper presented at the annual conference of the American Educational Research Association (AERA), April 21-26, Chicago, USA.
- Van Merriënboer, J. J. G. (2003, April). *4C/ID-model and Cognitive Load Theory*. Presentation for the Learning Systems Institute at Florida State University, April 28, Tallahassee, USA.
- Van Merriënboer, J. J. G. (2003, June) *Educational Foundations of ADAPTIT: The 4C/ID-model*. Presentation for the

- Conference 'Advanced design approaches for personalized training', June 3, Eurocontrol Luxembourg.
- Van Merriënboer, J. J. G. (2003, August). *Psychological perspectives on advanced technology in education*. Discussant for the symposium at the 10<sup>th</sup> Biennial Conference of the European Association for Research on Learning and Instruction (EARLI), August 26-30, Padua, Italy.
- Van Merriënboer, J. J. G. (2003, August). *Instructional design as the missing link between educational innovation and teacher development*. Symposium organized at the 10<sup>th</sup> Biennial Conference of the European Association for Research on Learning and Instruction (EARLI), August 26-30, Padua, Italy.
- Van Merriënboer, J. J. G. (2003, October). *4C/ID-model and Cognitive Load Theory*. Presentation for the School of Education of the University of New South Wales, October 29, Sydney, Australia.
- Van Merriënboer, J.J.G. (2002). Book review of Web-based Training by B.H. Khan. *British Journal of Educational Technology*.
- Van Merriënboer, J.J.G. (2002). Book review of Delivering Digitally – Managing the Transition to the Knowledge Media by A. Inglis, P. Ling & V. Joosten. *British Journal of Educational Technology*.
- Van Merriënboer, J.J.G., & Kester, L. (2002). EARLI Kroniek 2001: Learning and Technology. *Pedagogische Studieën*, 79(1), 76-77.
- Van Merriënboer, J.J.G., van der Klink, M.R., & Hendriks, M. (2002). *Competenties: Van complicaties tot compromis. Een studie in opdracht van de onderwijsraad* [Competencies: from complications towards a compromise – A study for the National Educational Council]. The Hague, The Netherlands: Onderwijsraad.
- Van Merriënboer, J.J.G., Kirschner, P.A., & Kester, L. (2002, January). *Taking the load of a learner's mind: Cognitive load and design for complex learning*. Paper presented at the International Workshop on Cognitive Load Theory, Erfurt, Germany.
- Van Merriënboer, J.J.G. (2002, January). *ICT en competentiegericht onderwijs* [ICT and competency-based education]. Paper presented at the meeting of the division ICT of the VOR, Heerlen, The Netherlands.
- Van Merriënboer, J.J.G., & de Croock, M.B.M. (2002, April). *From cognition to design: A computer-based ID tool for complex learning*. Paper presented at the annual meeting of the AERA, New Orleans, U.S.A.
- Van Merriënboer, J.J.G., Kirschner, P.A., & Kester, L. (2002, April). *Training for complexity: Dealing with cognitive load*. Paper presented at the annual meeting of the AERA, New Orleans, U.S.A.
- Van Merriënboer, J.J.G. (2002, April). *Competentiegericht onderwijs maken met het 4C/ID-model* [Developing competency-based instruction with the 4C/ID-model]. Paper presented at the "Samenscholingsdag ROC ASA", Utrecht, The Netherlands.
- Van Merriënboer, J.J.G. (2002, May). *De Ontbrekende didactiek van e-leren* [The missing didactics of e-learning]. Paper presented at the Onderwijs Research Dagen (ORD), Antwerpen, Belgium.
- Van Merriënboer, J.J.G. (2002, May). *Onderwijsinnovatie: algemene didactiek en vakdidactiek* [Educational innovation: General didactics and subject-oriented didactics]. Paper presented at the Onderwijs Research Dagen (ORD), Antwerpen, Belgium.
- Van Merriënboer, J.J.G. (2002, June). *Instructional design for complex learning*. Invited seminar for the University of Freiburg, Freiburg, Germany.
- Van Merriënboer, J.J.G., & Paas, F.G.W.C. (2002, September). *Powerful learning and the many faces of instructional design*. Paper presented at the FWO Scientific Network on Design, Implementation and Evaluation of Powerful Learning Environments, Leuven, Belgium.
- Van Merriënboer, J.J.G., & Janssen, A. (2002, September). *Innovatief onderwijs ontwerpen* [Innovative Educational Design]. Invited seminar for the Hogeschool Arnhem-Nijmegen (HAN), Arnhem, The Netherlands.
- Tzanova, S., Mileva, N., Castra Gil, M.A., van Merriënboer, J.J.G., Mediano, M., Schaeffer, C., Nikolics, J., & Stefanova, K. (2002, November). *Internet-based performance support systems with educational elements (IPSS\_EE) for engineering education*. Paper presented at the ASEE/IEEE Frontiers in Education Conference, Boston, MA, U.S.A.
- Van Merriënboer, J.J.G. (2002, November). *Bruggen bouwen met competenties* [Building bridges with competences]. Paper presented at the AEQOR Conference "Competenties en Examinering", Ede, The Netherlands.
- De Croock, M.B.M., van Merriënboer, J.J.G., Paas, F.G.W.C., & Salden, R. (2001, May). *Computerondersteuning voor trainingsontwerpen in complexe domeinen*. Paper presented at the Onderwijs Research Dagen (ORD), Amsterdam, The Netherlands.
- De Croock, M.B.M., Paas, F.G.W.C., Schlanbusch, H., van Merriënboer, J.J.G. (2001, August). *Computerized tools for task analysis and instructional design in complex cognitive domains*. Paper presented at the bi-annual EARLI conference, Fribourg, Switzerland.
- De Croock, M.B.M., Paas, F.G.W.C., Schlanbusch, H., van Merriënboer, J.J.G. (2001, November). *ADAPTit: Training design methodology and tools for personalised training of complex cognitive skills*. Paper presented at the annual conference of the AECT, Atlanta, GA, U.S.A.
- Hoogveld, A.W.M., Bastiaens, Th., & van Merriënboer, J.J.G. (2001, September). *De vier componenten: Methodisch ontwerpen van competentiegerichte opleidingen*. Paper presented at the Nationaal Onderwijs Congres, Ede, The Netherlands.
- Kester, L., Kirschner, P., & van Merriënboer, J.J.G. (2001, April). *Just-in-time information presentation and the acquisition of complex cognitive skills*. Paper presented at the AERA, Seattle, WA, U.S.A.
- Kester, L., Kirschner, P., & van Merriënboer, J.J.G. (2001, May). *Just-in-time informatie presentatie: Wanneer kan welke informatie het beste worden aangeboden om leren te bevorderen?* Paper presented at the Onderwijs Research Dagen

- (ORD), Amsterdam, The Netherlands.
- Kester, L., Kirschner, P., & van Merriënboer, J.J.G. (2001, August). *Just-in-time information presentation in learning statistics*. Paper presented at the EARLI Conference, Fribourg, Switzerland.
- Kester, L., Kirschner, P., & van Merriënboer, J.J.G. (2001, November). *Timing of information presentation in learning statistics*. Paper presented at the BITE conference, Eindhoven, The Netherlands.
- Nadolski, R., Kirschner, P., & van Merriënboer, J.J.G. (2001, May). *Hoeveel stappen is genoeg?* Paper presented at the Onderwijs Research Dagen (ORD), Amsterdam, The Netherlands.
- Nadolski, R., Kirschner, P., & van Merriënboer, J.J.G. (2001, August). *Optimizing step size within problem solving instruction in self-contained competency-based multimedia practicals: How much is enough?* Paper presented at the EARLI conference, Fribourg, Switzerland.
- Salden, R., Paas, F.G.W.C., & van Merriënboer, J.J.G. (2001, November). *Selection of learning tasks based on performance and cognitive load scores as a way to optimize the learning process*. Paper presented at the annual conference of the AECT, Atlanta, GA, U.S.A.
- Schellekens, A., Paas, F.G.W.C., & van Merriënboer, J.J.G. (2001, August). *Flexibility in higher professional education: A survey in business administration programs in the Netherlands*. Paper presented at the EARLI, Fribourg, Switzerland.
- Sluijsmans, D., Brand-Gruwel, S., & van Merriënboer, J.J.G. (2001, August). *Training of peer assessment skills in teacher education*. Paper presented at the EARLI, Fribourg, Switzerland.
- Sluijsmans, D., Brand-Gruwel, S., & Van Merriënboer, J.J.G. (2001, May). *Het trainen van beoordelingsvaardigheden bij PABO studenten*. Paper presented at the Onderwijs Research Dagen (ORD), Amsterdam, The Netherlands.
- Stoof, A., Martens, R., & van Merriënboer, J.J.G. (2001, August). *Analyzing competencies in higher education*. Paper presented at the EARLI, Fribourg, Switzerland.
- Tabbers, H., Martens, R.L. & van Merriënboer, J.J.G. (2001, August). *The interaction of pacing and modality in multimedia learning*. Paper presented at the EARLI Conference, Fribourg, Switzerland.
- Tabbers, H., Martens, R.L., & van Merriënboer, J.J.G. (2001, August). *The modality effect in multimedia instructions*. Paper presented at the 23rd conference of the Cognitive Science Society, Edinburgh, Scotland.
- Tabbers, H., Martens, R.L. & van Merriënboer, J.J.G. (2001, May). *Hoe kan multimediale informatie effectief worden aangeboden in elektronische leeromgevingen?* Paper presented at the Onderwijs Research Dagen (ORD), Amsterdam, The Netherlands.
- Van Gerven, P., Paas, F., van Merriënboer, J.J.G., Hendriks, M., & Schmidt, H. (2001, April). *A multimedia strategy for efficient complex skill training into old age*. Paper presented at the AERA, Seattle, WA, U.S.A.
- Van Merriënboer, J. J. G. (2001, 22 februari). *Een ontwerpmethodiek voor competentiegericht opleiden*. Paper presented at the conference “Competenties en Performance”, Rotterdam, The Netherlands.
- Van Merriënboer, J. J. G., & Tabbers, H. (2001, March). *Cognitieve belastingstheorie en multimedia-ontwerp*. Paper presented at the NWO/PROO conference “Wat heeft onderwijsonderzoek het onderwijs te bieden?” Utrecht, The Netherlands.
- Van Merriënboer, J. J. G., & Tabbers, H. (2001, April). *Cognitive load theory and multimedia design*. Paper presented at the International Council for Distance Education (ICDE), Dusseldorf, Germany.
- Van Merriënboer, J. J. G., & van den Akker, J. (2001, 25-27 juni). *ICT-tools voor onderwijskundig ontwerpen*. Paper presented at the Onderwijs Research Dagen (ORD), Amsterdam, The Netherlands.
- Van Merriënboer, J. J. G. (2001, Augustus). *Instructional design for competency-based learning: Golden dreams make men awake hungry*. Paper presented at the EARLI conference, Fribourg, Switzerland.
- Van Merriënboer, J. J. G. (2001, November). *Computer-based tools for instructional design*. Paper presented at the AECT, Atlanta, GA, U.S.A.
- Hoogveld, A.M.W., Paas, F.G.W.C., Jochems, W.M.G., & van Merriënboer, J.J.G. (2000, August). *Teachers and instructional design: Antagonism or success formula*. Paper presented at the 12th annual Instructional Technology Institute at Utah State University, Logan, UT, U.S.A.
- Stoof, A., Martens, R.L., & van Merriënboer, J.J.G. (2000, May). *What is competence? A constructivist approach as a way out of confusion*. Paper presented at the Onderwijs Research Dagen (ORD), Leiden, The Netherlands.
- Tabbers, H.K, Martens, R., & van Merriënboer, J.J.G. (2000, February). *Multimedia instructions and cognitive load theory: Split attention and modality effects*. Paper presented at the annual meeting of the AECT, Long Beach, CA, U.S.A.
- Van Merriënboer, J.J.G. (2000, March). *Onderwijsvernieuwing en ICT: Een paradox?* Paper presented at the conference “Virtueel Leren in de Praktijk”, Rotterdam, The Netherlands.
- Van Merriënboer, J.J.G. (2000, May). *Web-based instruction and complex learning: A teachers' paradox*. Keynote presented at the 19th conference of the European Universities Continuous Education Network (EUCEN), Bergen, Norway.
- Van Merriënboer, J.J.G. (2000, May). *Het verwerven van complexe vaardigheden: Leren Onderzoeken*. Paper presented at the conference “Studiedag Onderwijsvernieuwing”. Leuven, Belgium.
- Van Merriënboer, J.J.G. (2000, July). *Complex learning with multimedia*. Keynote presented at the 2nd Jornades Multimedia Educativo, Barcelona, Spain.
- Van Merriënboer, J.J.G. (2000, July). *Instructional Design for Collaborative Learning Environments in Higher Education*. Paper presented at the 5th meeting of the EARLI Special Interest Group Instructional Design, Barcelona, Spain.
- Van Merriënboer, J.J.G. (2000, August/September). *Instructional sequencing for complex learning*. Paper presented at the 12th Instructional Technology Institute (ITI), Logan, Utah, U.S.A.
- Van Merriënboer, J.J.G. (2000, Augustus –September). *Training design for complex learning*. Keynote presented at the 12th

- Instructional Technology Institute (ITI) at Utah State University. Logan, Utah, U.S.A.
- Van Merriënboer, J.J.G. (1999). *Three worlds of Instructional Design: State of the art and future directions*. Paper presented at the EARLI/SIG-ID workshop "Philosophical implications for the design of instruction about complex systems", March 31, Enschede, University of Twente.
- Van Merriënboer, J.J.G. (1999). *Inductief Leren*. Discussant voor het symposium "inductief leren" op de Onderwijsresearchdagen (ORD), 20-21 mei, Nijmegen.
- Van Merriënboer, J.J.G., Schuurman, J.G., & de Croock, M.B.M. (1999). *Germane cognitive load and instructional design*. Paper presented at the 6th European Conference of Psychology (ECP), July 6-9, Rome, Italy.
- Van Merriënboer, J.J.G. (1999, August). *Training for strategic knowledge: From knowledge elicitation to case design*. Paper presented at the 8th European Conference for Research on Learning and Instruction (EARLI), Goteborg, Sweden.
- Winkel, W. te, Wiers, R., van Merriënboer, J.J.G., & Schmidt, H.G.M. (1999, August). *Differences in learning results due to the structuring of information*. Paper presented at the 8th European Conference for Research on Learning and Instruction (EARLI), Goteborg, Sweden.
- Van Gerven, P., Paas, F., & van Merriënboer, J.J.G. (1999, August). *Implications of cognitive load theory for the elderly*. Paper presented at the 8th European Conference for Research on Learning and Instruction (EARLI), Goteborg, Sweden.
- Van Merriënboer, J.J.G., Kirschner, P., & Jochems, W. (1999, September). *Models of expertise development and competency-based learning in higher education*. Paper presented at the workshop "Expertise development and instructional design", Heerlen, Open University of The Netherlands.
- Van Merriënboer, J.J.G. (1998, June). *Cognitive load theory and the design of problems in PBL*. Paper presented at the bi-annual meeting of the EARLI SIG Instructional Design. Maastricht, The Netherlands.
- Baumer, A., Van Merriënboer, J.J.G., & de Croock, M.B.M. (1997). Design guidelines for training troubleshooting skills with computer-based simulations. Poster presented at the EARLI, 26-30 augustus, Athens, Greece.
- Hensgens, J., van Rosmalen, P., Hovius, J., Mouthaan, T., van Merriënboer, J.J.G., Leemkuil, H., & Mzuzu, E. (1997). Network-based training for micro-electronics using simulation tools. Paper presented at the ICAM-EMRS Conference 1997, 16-20 june, University of Strasbourg, France.
- Schuurman, J., & van Merriënboer, J.J.G. (1997). Supporting knowledge transfer by means of computer-based learning environments. Poster presented at the EARLI, 26-30 august, Athens, Greece.
- Van Merriënboer, J.J.G. (1997). Instructional design and the efficiency of learning. Discussant voor het gelijknamige symposium, 26-30 augustus, Athene, Griekenland.
- Van Merriënboer, J.J.G. (1997). Instructional sequencing effects in simulation-based training of complex cognitive skills. Paper presented at the EARLI, 26-30 august, Athens, Greece.
- Van Merriënboer, J.J.G., & van Dijk, E.M.A.G. (1997). Use and misuse of taxonomies of learning: Dealing with integrated educational goals in the design of computer science curricula. Paper presented at the IFIP World Conference 1997, 18-20 august, University of Twente, Enschede, the Netherlands.
- Van Merriënboer, J.J.G. (1997). Cognitive load theory and the computation of instructional efficiency. Paper presented at the AERA Annual Meeting, 24 march 1997, Chicago, U.S.A.
- Van Merriënboer, J.J.G. (1997). Structural learning, instructional design, and learning efficiency. Discussant voor het gelijknamige symposium, AERA Annual Meeting, 25 maart 1997, Chicago, VS.
- Van Merriënboer, J.J.G., Trayhurn, D., & Leemkuil, H. (1996). MODEM preliminary evaluation report. Rapport voor de Europese Commissie (MODEM deliverable D7.1). Cork, Ireland: NMRC.
- Van Merriënboer, J.J.G. (1996). Instructional efficiency: Some issues related to instructional design and measurement. Paper presented at the bi-annual workshop of the EARLI-SIG Instructional Design, 14-15 june 1996, Dresden, Germany.
- Van Merriënboer, J.J.G. (1996). A "constructivist" perspective on sequencing instruction. Paper presented at the European Conference for Educational Research (ECER), 25-29 september 1996, Sevilla, Spain.
- Tekinerdogan, B., Krammer, H.P.M., & van Merriënboer, J.J.G. (1995). Design of a general planmatcher for diagnosing student programs. *Proceedings of AI-ED '95*, Washington DC, USA.
- Tekinerdogan, B., Krammer, H.P.M., van Merriënboer, J.J.G., & Schonewille, M. (1995). Design of a generic domain model for an imperative tutoring shell. *Proceedings of EUROCALL '95*, Valencia, Spain.
- Van Merriënboer, J.J.G. (1995). *Completion Assignment Constructor*. Lezing gehouden op de nationale dag van de VOR (Vereniging voor Onderwijs Research), 13 januari 1995, Enschede.
- Van Merriënboer, J.J.G. (1995). *Instructional methods to reach transfer of acquired skills*. Lezingencyclus gehouden voor het Departamento de Teoria i Historica de l'Educacio (THE), maart-mei 1995, Universidad de Barcelona, Spanje.
- Van Merriënboer, J.J.G. (1995). *Training complex cognitive skills with multimedia*. Paper presented at the World Conference of Educational Media and Multimedia (WCEMH), 17-21 june 1995, Graz, Austria.
- Van Merriënboer, J.J.G. (1995). *Computer-based instructional models that promote the simultaneous acquisition of skills and conceptual understanding*. Paper presented at the European Association for Research on Learning and Instruction (EARLI), 26-30 august 1995, Nijmegen, The Netherlands.
- Van Merriënboer, J.J.G. (1995). *On the acquisition of skills and concepts: Are there conflicting requirements to computer-based instructional models?* Symposium georganiseerd voor de European Association for Research on Learning and Instruction (EARLI), 26-30 augustus 1995, Nijmegen.
- Van Merriënboer, J.J.G. (1995). The integration of instructional system design models and constructivistics design principles. Discussant voor dit symposium. Association for Research on Learning and Instruction (EARLI), 26-30

- augustus 1995, Nijmegen.
- Van Merriënboer, J.J.G. (1995). *Research on theory and process of instructional design - symposium of the SIG instructional design*. Discussiant voor dit symposium. Association for Research on Learning and Instruction (EARLI), 26-30 augustus 1995, Nijmegen.
- Van Merriënboer, J.J.G. (1995). *Het vier-componenten instructie-ontwerpmodel*. Lezing verzorgd voor de vakgroep Onderwijsontwikkeling van de Rijksuniversiteit Limburg. 13 november 1995. Maastricht.
- Van Merriënboer, J. J. G. (1994, april). *Complexe cognitieve vaardigheden: Van psychologie tot trainingsontwerp*. Colloquium verzorgd voor de vakgroep Psychonomie van de UvA, 28 april 1994, Amsterdam.
- Van Merriënboer, J. J. G. (1994, mei). *Fuzzylogische instructiemodellen*. Paper presented at the Onderwijsresearchdagen (ORD), 24-26 may 1994, Utrecht, The Netherlands.
- Van Merriënboer, J. J. G. (1994, juni). *Recente ontwikkelingen in ID en de rol van de docent*. Colloquium verzorgd voor het Rijksopleidingsinstituut (ROI), 15 juni 1994, Den Haag.
- Van Merriënboer, J. J. G. (1994, juni). *How to model our knowledge of instruction and instructional design?* Paper presented at the annual meeting of the EARLI SIG Instructional Design, 17-19 juni 1994, Leuven, Belgium.
- Van Merriënboer, J. J. G. (1994, juni). *New directions for computer-based learning environments: Enabling the trainer easy modification of instructional strategies*. Paper presented at the third International Research Network for Education and Training Development (IRNETD), 23-25 juni 1994, Milan, Italy.
- Van Merriënboer, J. J. G. (1994, november). *Ontwerpen leren door completeren*. Paper presented at the Nationaal Informatica Onderwijs Congres (NIOC), 24-25 november 1994, The Hague, The Netherlands.
- De Croock, M. B. M., van Merriënboer, J. J. G., & Paas, F. G. W. C. (1994). *High versus low contextual interference in simulation-based training of trouble-shooting skills: Effects on transfer performance and cognitive load constructivist education* (IST-MEMO 94-03). Enschede: Vakgroep Instructietechnologie.
- Van Merriënboer, J. J. G. (1993, April). *Technological foundations of instructional theory*. Invited paper on behalf of the symposium "A dialogue on international perspectiveB in instructional theory" van de SIG structural learning, AERA Annual Meeting, April 12-16, Atlanta USA.
- Van Merriënboer, J. J. G. (1993, April). *Instructional design as ill-structured problem solving: Implications for theory and practice*. Symposium and paper, organized and presented at the AERA Annual Meeting, April 12-16, Atlanta USA.
- Van Merriënboer, J. J. G. (1993, May). *Het verwerven van expertise in complexe domeinen* [The acquisition of expertise in complex domains]. Discussiant on behalf of this symposium, Onderwijs Research Dagen, May 26-28, Maastricht, The Netherlands.
- Van Merriënboer, J. J. G. (1993, July). *CASCO: The dynamic generation of programming assignments based on fuzzy logic instructional models*. Paper presented at the NATO Advanced Study Institute (ASI) "Automating Instructional Design", July 12-23, Grimstad, Norway.
- Van Merriënboer, J. J. G. (1993, September). *Tools to support dynamic problem generation for the instruction of design-related tasks*. Invited paper presented at the symposium "Tools for instructional design", September 1-5, Congress of the European Association for Research on Learning and Instruction (EARLI), Aix-en-Provence, France.
- Van Merriënboer, J. J. G. (1993, September). *Instructional models in computer-based learning environments: Implementation Issues*. Paper presented at the NATO Advanced Research Workshop "Advanced Educational Technology: Research Issues and Future Potential", September 25-28, Grenoble, France.
- Van Merriënboer, J. J. G. (1993). *The four-component instructional design model*. Workshop held at the Department of Education, University of Thessaloniki, November 25-26, Greece.
- Maaswinkel, R. M., Krammer, H. P. M., & Van Merriënboer, J. J. G. (1992). *Samples of instructional models for intelligent tutoring systems* (memorandum ITSSSEL-92-3). Universiteit Twente: Faculteit der Toegepaste Onderwijskunde/Faculteit der Informatica.
- Van Merriënboer, J. J. G. (1992, maart). *Automating the planning and construction of programming assignments for introductory computer programming*. Paper presented at the NATO Advanced Research Workshop "Automating instructional design, development and delivery", 23-27 march 1992, Barcelona, Spain.
- Holsbrink-Engels, G. A., & Van Merriënboer, J. J. G. (1992, juli). *From the psychology of ill-structured problem solving to the teaching of creative problem solving skills*. Poster presented at the 25th International Congress of Psychology, 19-24 juli 1992, Brussels, Belgium.
- Van Merriënboer, J. J. G. (1992, juni). *Recent developments in instructional design*. Discussiant voor een symposium gehouden op de European Conference of Educational Research (ECER), 22-25 juni 1992, Enschede.
- Van Merriënboer, J. J. G. (1992, december). *Generation of instructional problems in ITS: An example in the domain of computer programming*. Invited paper, presented at the International Congress for Social Science Information Technology (SSIT), 2-4 december 1992, Amsterdam, The Netherlands.
- Van Merriënboer, J. J. G. (1991, april). *Training for reflective expertise*. Paper presented at the AERA Annual Meeting, Chicago, U.S.A.
- Van Merriënboer, J. J. G. (1991). Boekrecensie van het proefschrift van Th. J. M. Tromp, The acquisition of expertise in computer programming. *Tijdschrift voor Onderwijsresearch*, 16, 171-176.
- Van Merriënboer, J. J. G., & Krammer, H. P. M. (1991, juli). *A descriptive model of instructional processes in interactive learning environments for elementary computer programming*. Paper presented at the NATO Advanced Research Workshop "Instructional models in computer-based learning environments", 1-5 juli 1992, Enschede, The Netherlands.
- Van Merriënboer, J. J. G. (1990, april). *What cognitive science may learn from instructional design: A case study in*

- introductory computer programming*. Paper presented at the AERA Annual Meeting, Boston, U.S.A.
- Van Merriënboer, J. J. G. (1990, november). *Training strategies for introductory computer programming*. Paper presented at the NATO Advanced Research Workshop "Cognitive Modelling and Interactive Environments", 5-8 november 1990, Mierlo, The Netherlands.
- Van Merriënboer, J. J. G., (1989, september). *Teaching introductory computer programming: A comparison of instructional strategies for computer-based training*. Paper presented at the Third European Conference for Research on Learning and Instruction (EARLI), Madrid, Spain.
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