

# Book Review

## Research-Based Learning: Case Studies from Maastricht University

Edited by Ellen Bastiaens, Jonathan van Tilburg, and Jeroen van Merriënboer



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Reviewed by Susan Berry Brill de Ramírez,  
Bradley University, [brill@bradley.edu](mailto:brill@bradley.edu)

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*Research-Based Learning: Case Studies from Maastricht University*, edited by Ellen Bastiaens, Jonathan van Tilburg, and Jeroen van Merriënboer, introduces the university's honors program in research-based learning (RBL), the theoretical models and key concepts of RBL at the undergraduate level upon which the program is based, and case studies from a diverse range of departments and programs. The competitive and selective RBL program for third-year students at Maastricht University in the Netherlands was developed with national higher education funding "to create new educational formats to challenge excellent students" (174). Maastricht already had a strong track record of pedagogical innovation with problem-based learning (PBL) as a core educational model across the university, which was discussed in *CUR Quarterly* (E. Bastiaens and J. Nijhuis, "From Problem-Based Learning to Undergraduate Research: The Experience of Maastricht University in the Netherlands," 32.4 [2012]: 38–43). Through the book, the editors seek to encourage and assist other institutions and departments in their RBL initiatives.

The volume begins with Roeland van de Rijst's comprehensive "The Transformative Nature of Research-Based Education: A Thematic Overview of the Literature," which highlights the pedagogically transformative experiences of RBL when learning objectives are aligned with teaching strategies to develop "effective instructional design of RBL opportunities" (4–5). However, the evidence shows that "research-teaching links do not come about naturally, . . . [requiring] focused, purposeful, and persistent institutional strategies" to implement successful undergraduate RBL programs (13). The editors' second and third chapters turn to the development of the institutional commitment to and practice of RBL at Maastricht University. Chapter 2 lays out the historical process, beginning with the European Union's 1999 commitment to improved higher education

through establishing a cross-border higher education area by 2010. The university then developed the MaRBL (Maastricht Research-Based Learning for Excellence) programs that feature inquiry-based/problem-based learning. Chapter 3 introduces the "Three Educational Models for Positioning the Maastricht Research-Based Learning Programme." The next nine chapters provide case studies from the MaRBL programs at Maastricht.

In chapter 4, "Faculty of Psychology and Neuroscience: The Psychology Student as Researcher," Herco Fonteijn and Arie van der Lugt discuss how talented and motivated students are selected to build on their content-based learning and research methodology group experience and "plan, conduct, and present their own individual research project under the supervision of a faculty member" (49), which has led to a number of scholarly publications. Challenges included various levels of student commitment and limited resources such as insufficient lab space for undergraduate researchers. Chapter 5, "Faculty of Arts and Sciences: The Adventure of Doing Research," by Pieter A. J. Caljé turns to the programs in European studies and arts and culture that are largely content and textbook based. For humanities students, RBL was a foreign concept and required active peer review as part of a cohesive academic community of student researchers; faculty supervisors acted as collaborators who shared their own research methods and suggested possible topics for the students to pursue.

Chapters 6–12 present additional case studies, including RBL as part of small tutorials in which "students and their supervisors were co-learners in the process of academic inquiry" (82), collaborations where students conducted research with partners in the private and public sectors to work on real-world problems (such as sustainable sanitation), RBL initiatives where the student is viewed as an apprentice to a faculty researcher, science research beyond monodisciplinary boundaries, faculty projects involving undergraduates in higher level research, conference presentations of bachelor theses at university or external academic venues, and competitively selected student research for presentation at a university symposium. The institutional commitment broadened support and implementation of RBL opportunities across campus, including the fields highlighted in the volume such as psychology and neuroscience, arts and sciences, business and economics, and law.

The final chapters offer evaluations of the Maastricht program. In chapter 13, "The Effectiveness of the MaRBL Programme: Evaluation Findings," Bastiaens, Jimmie Leppink, and van Merriënboer explain that they were

interested in students' "social interaction with academic staff and the extent to which students felt motivated and enjoyed conducting research on a topic of their interest" (174), but the inconsistency of program assessment data collection limited the conclusions that could be drawn. The researchers affirmed that they "should have thought of evaluation methods that are sustainable in the long run at an earlier stage" (182). In chapter 14, "Reflection and Lessons Learned," the editors present their conclusions regarding the five-year program, noting the importance of dialogue at all stages, peer review for time management and task completion, research guidance and mentors, and external stakeholders for student motivation and research innovation.

At Maastricht, it was understood that successful research requires a substantive commitment. This meant that its MaRBLe program was targeted to the top 25 percent of students, along with selected others who fell below this level but who were highly motivated. Although there were concerns regarding elitism and desires for wider access to RBL, it was recognized that a viable program would depend on motivated students who were committed to the success of their research projects. This volume provides an invaluable introduction for educators and administrators interested in the implementation of institutional, departmental, and faculty-led RBL initiatives. The book also includes an appendix that lists many of the students' publications and other special achievements.

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Contact James T. LoPlant  
SPUR Editor-in-Chief  
Assistant Vice President for Research  
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