

Maastricht UMC+

School of Health Professions Education

Reaching out for another summit

Midterm Review

Assessment Committee Report

Jan Elen, Hans Gruber, Richard Reznick

October 2015

I. General section on procedures followed

The midterm review was initiated by the School of Health Professions Education (SHE) in view of the formal research assessment planned for 2018.

Since 2014, SHE has been a formally sanctioned graduate school in the Faculty of Health, Medicine and Life Sciences at Maastricht University. The Faculty has merged with the Academic Hospital into the Maastricht University Medical Center (UMC+).

The management team selected the reviewer committee which consisted of Jan Elen, KU Leuven, Belgium, Richard Reznick, Queen's University, Canada, and Hans Gruber, Universität Regensburg, Germany. The framework used for the midterm review report was the Standard Evaluation Protocol 2015-2021 (SEP) used for research assessments in the Netherlands. The review committee received and analyzed a self-assessment provided by SHE in September 2015. As stipulated in the guidelines of the SEP, the assessment report focused on the research in education activities of the school, the PhD program and the unit's valorization activities. The Assessment Committee conducted an on-site review on October 19, 2015 (see site visit program in the appendices).

II. Assessment of the research unit

a. Description of the research unit's strategy and targets

The School of Health Professions Education (SHE) and its research program *Research in Education* (RiE) have a mandate to provide 'research-based models and guidelines for improvement of health professions education'. This mandate is clearly stipulated in the self-report and was affirmed during the site visit. Although the primary focus is on application-oriented educational research, the research is based on strong and solid theories that contribute to its development. The RiE program concentrates on two main and broadly described research themes: 'Learning and Innovative Learning Environments' and 'Assessment and Evaluation'. A fundamental element of the RiE is a robust PhD program consisting of two streams, a 'regular stream' consisting of, for the most part, domestic students, and an international stream with students from around the world.

Based on a SWOT-analysis presented in the self-report, SHE identifies seven goals as major components of a future strategy. These include: (1) further expansion of international research collaborations; (2) further strengthening of its position and visibility in the national field of educational sciences; (3) the elaboration of stronger connections with 'paramedical' professions and relevant institutes for vocational and higher professional education; (4) the search for new funding possibilities in programs that focus on health rather than on education; (5) increasing the number of open access publications and more ample use of social media; (6) rendering SHE more attractive for young research talents also from developing countries, and (7) more attention for the internationalization of staff, recruitment of young talent and succession planning.

b. Qualitative and quantitative assessment

a. Research quality

It is the reviewers' observation that SHE has been very successful both in quantitative and qualitative terms. The committee concluded that SHE has well-deserved international reputation for its work in health professions education, and indeed, is regarded as one of the top centers in the world in its field. This was confirmed through benchmarking analyses with other well-regarded international units, through bibliometric analyses and through the array of national and international awards received by members of SHE.

The reviewers concluded that high quality research is being conducted in both of the research streams: 'Learning and Innovative Learning Environments' and 'Assessment and Evaluation'. The themes are general and inclusive which has resulted in a wide variety of studies both with respect to substance and with respect to methodology. The research strategy has been a deliberate and fruitful policy, which has allowed staff members to explore interesting topics through appropriate and diverse methodological approaches. Focusing on health professions education, SHE succeeds in establishing an impressive balance between studies that are educational in nature and studies that are more specifically directly oriented towards medical education. That balance is also seen in the journals in which the studies are

published. SHE members have succeeded in publishing in high level educational journals, in journals that focus specifically on medical education and as well, general medical journals which attract a wide readership across medical disciplines.

In line with the Standard Evaluation Protocol 2015-2021 which prescribes a scale of 1-4, the committee assigns a score of '1: World leading/excellent'.

b. Relevance to society

Relevance to society can be shown in very different ways. An important way in which SHE contributes to developments in society is by engaging in research that is meaningful to an improved understanding of educational theory that also translates to guiding improved educational practices. These improved educational practices ultimately lead to better quality outcomes in the training and education of future health care professionals. In the same vein, the PhD program (both the regular and international streams) contributes to society through the development of highly qualified personnel with a broad array of sophisticated research competencies related to educational improvement. The unit also contributes to society through its products, which include multiple course offerings of both a long and a short nature. These courses are organized by SHE staff members and delivered in the Netherlands as well as worldwide.

In addition to research and courses, SHE also has societal relevance through the development of specific instruments and approaches that are immediately useful for practice. All of these instruments and approaches are either a direct result of the research performed by SHE or have been inspired by its research findings. This has included the development of concrete products and procedures. The valorization activities associated with these products and procedures are highly esteemed and have proved to be marketable to both organizations and individuals. This, in turn, has generated a revenue stream that has further fueled SHE's research initiatives.

In line with the Standard Evaluation Protocol 2015-2021 which prescribes a scale of 1-4, the committee assigns a score of '1: World leading/excellent'.

c. Viability

In the Faculty a matrix structure for its governance has been elaborated with graduate schools and the educational institute on one dimension and the departments on the other dimension. While staff members belong to a 'department', they get their work from the schools (and/or the educational institute). For those unfamiliar with the structure, it is a bit difficult to understand, but in the case of SHE it seems to work very well. The structure allows for assigning the right tasks to the right persons. It allows for negotiation and stability.

The reviewers heard on multiple occasions, from multiple stakeholders, that the matrix structure is functioning very well, and that it facilitates the interactions within the organization. The reviewers were

also of the opinion that the unit benefited from strong leadership at three levels; the School, the RiE program and the PhD program. It is clear that both the structure and the strong leadership contribute to a robust organization and an engaging and productive work climate. This view was fortified by consistent and multiple expressions of high staff and student satisfaction at all levels: the faculty, the regular PhD students, and the international students.

SHE and RiE seem to be financially sound, and have been able to attract and retain talented staff. They have established interesting collaborations with other schools in the faculty, with the hospital and with other research centers, both nationally and internationally. While succession is regarded to be a potential issue, there is a strong talent-pool among existing staff and given SHE's strong international reputation, external recruitment would also be a viable option.

In line with the Standard Evaluation Protocol 2015-2021 which prescribes a scale of 1-4, the committee assigns a score of '1: World leading/excellent'.

c. Quality and organization

a. PhD program

The PhD program is well organized and students can actively participate in its governance. As indicated the PhD program has a regular stream and an international stream. For both streams there are clear structures that enrich the educational environment and ensure progression. These include: a PhD writing course as the starting point, coaching by supervisors and promotors, formal discussion of ongoing PhD research through Web-streamed sessions called 'SHE Presents', thrice yearly journal clubs, a biannual four-day building conference known as the 'SHE Academy', and an annual 'SHE Mini-Academy' in conjunction with the AMEE conference.

The reviewers observed that PhD candidates believe they are being held to the highest research standards, but commented on the positive learning environment, which includes ample task-based feedback and extensive opportunities to learn.

In general terms the organization for the two PhD streams is similar. Both streams have in common, a foundational PhD-writing course as a starting point. However, there are also marked differences. The 'regular PhD' candidates are employees of SHE and for the most part, reside in Maastricht. In contrast, the international stream students are a very heterogeneous group, many of whom are practicing health care professionals, and many who are engaged in the PhD on a part-time basis. That distinction deserves to be recognized. The 'regular PhD' students often work in the context of a project elaborated by one of the staff members. They are also encouraged to attend courses from national research schools. The number of total hours of formal course-work for the 'regular' PhD students is significant. In contrast, the international stream students often combine their research work with a job in one of the health professions, work on a project that has been self-initiated and have less immediate access to courses and professionalization initiatives. As mentioned, the international cohort is very heterogeneous, but ample efforts are made to accommodate their diverse needs. That being said, the reviewers were provided evidence that indicated higher success rates and fewer years to completion for the 'regular stream' students compared to the international stream.

Of importance, the program has made explicit attempts to bring students together, through the aforementioned programs (SHE Academy, SHE Presents) so that they can learn from one another and as well as from staff members and researchers from around the globe. Recently new interesting initiatives have been taken (e.g., blended learning programs) or are planned (e.g., scholarships) to provide even more educational opportunities.

b. Research integrity policy

With respect to research integrity SHE adopts and enacts the established principles of the Faculty of Health, Medicine and Life Sciences, and of Maastricht University. The reviewers found these research policies and procedures to be grounded in sound principles, and that these principles seem to be well established. SHE pays ample attention to research integrity in its own research and in that of its PhD students. It also draws attention to research integrity during workshops and supervisor meetings.

III. Recommendations

In its self-report, SHE elaborates seven strategies/actions that they believe will further strengthen what is an already high-performing organization. The committee encourages SHE to engage in each of the specified actions. They will help to make what is an excellent organization even better and serve to stimulate ongoing innovation. It is the reviewers' observation that the successes of SHE have been an affirmation of the unusual and strategic choice made by the faculty of establishing a graduate school devoted to health professional education.

As part of the seven strategies outlined in the self-report and in total alignment with the options taken and considering the different elements of the assessment protocol, the committee suggests the following:

- With respect to research policy, SHE and RiE should consider further specifying, within the two general research themes, areas of specific research in which SHE wants to have global impact.
- SHE and RiE should consider an accelerated program of fundraising, including general philanthropic efforts and those directed to specific initiatives.
- SHE and RiE should consider initiatives that would promote an international character for the staff and as such, include hiring international students for the 'regular PhD' track.
- With respect to international PhD students, the PhD program should consider interventions to encourage them to augment the protected time they have available for their PhD work (e.g., imposing of deadlines, dissertation to be submitted within six years).
- With respect to collaboration, consideration should be given to developing more structural links with entities in the hospital. For example, the reviewers learned that there are multiple simulation laboratories in Maastricht, and integration of efforts between the hospital and SHE and the faculty may yield beneficial synergies.
- With respect to societal relevance, SHE and RiE should consider to tracking the careers of their graduates.
- SHE and RiE should consider accelerating their use of social media communication vehicles.
- In consideration of the fact that PhD candidates who are health professionals, are for the most part, from the discipline of medicine, SHE and RiE should consider strategies to augment its reach to include other health professional disciplines.

Finally, the committee would like to strongly recommend that in addition to the more operational, incremental strategies and actions put forward, SHE engage in an initiative, such as a formal strategic planning process, to specify more transformative goals and to develop a plan to reach those goals. The elaboration of a transformative mission with clear and challenging strategic goals is a difficult endeavor for which external support might be useful.

It is the review committee's opinion that the extremely strong foundation on which SHE and RiE sits, enables them, at this time, to be thinking of bold and transformative next steps. SHE and RiE are already in a position of global leadership, and are at an inflection point that will allow them to reach out for the next summit.

IV. Compulsory appendices

a. CVs

Jan Elen, Licentiate Educational Sciences (KU Leuven), Teacher Certificate Higher Secondary Education: Behavioral Sciences (KU Leuven), Doctor in Educational Sciences (KU Leuven)

Working experience

2001-2006	Professor KU Leuven
2006-...	Full Professor KU Leuven

Managerial positions

1999-2004	Academic Responsible, Educational Support Office, KU Leuven
2003-2007	Coordinator EARLI SIG Instructional Design
2006-2010	Coordinator School of Education Association KU Leuven
2010-2015	Vicedean Education Faculty of Psychology and Educational Sciences, KU Leuven
2014-...	Academic responsible behavioral sciences teacher education program
2014-...	Director of the Master Educational Studies program

Overview current teaching assignments

- Learning and Teaching (Teacher Education KU Leuven)
- Orientation to Practice (Teacher Education, KU Leuven)
- Pedagogy of Teacher Education (Educational Sciences, KU Leuven)
- Instructional Psychology and Technology (Educational Sciences, KU Leuven)
- Topics in Educational Technology (Educational Sciences, KU Leuven, Leuven and Kortrijk)
- Designing Learning Environments (Educational Sciences, KU Leuven)
- Coaching of internships of students in teacher education
- Annually: coaching of about 7 master students for their masters' thesis

Overview of research activities

(co-)Supervisor of ten on-going dissertations projects

(co-)Supervisor of 12 successfully defended dissertations

- Juarez Collazo, Norma Araceli
Unravelling tool usage. Analyzing the functionality of tools and the variables influencing the use of tools in computer-based learning environments
- Lust, Griet
Opening the Black Box. Students' Tool-use within a Technology-Enhanced learning environment: An Ecological-Valid Approach
- Corradi, David
Understanding and Optimizing the Use of Multiple External Representations in Chemistry Education
- Callens, Jean Claude
Impact van reflectie-aanpak en learner control op kritisch reflecteren
- Briell, Jeremy
The conceptualization, measurement, and educational relevance of personal epistemology
- Jiang, Lai
Instructional Effectiveness of Scaffolds: Roles of Learner Variables
- Verburgh, An
Research integration in higher education: prevalence and relationship with critical thinking
- Wu, Xiaoli
Vocabulary learning from reading: Examining the interactions between task and learner related variables
- Sarfo, Frederick Kwaku
Developing technical expertise in secondary technical schools in Ghana: The effect of powerful learning environments with and without ICT and the moderating effect of instructional conceptions.
- Clarebout, Geraldine
The enhancement of optimal tool use in open learning environments.
- Iserbyt, Peter
Reciprocal Peer Tutoring with task cards: Fostering learning outcomes in psychomotor tasks
- Aly, Medhat
'Towards a macro-sequencing model for instructional multi-media programs in postgraduate orthodontic training'

Coaching of scientific assistants in multiple projects :

GOA GOA/12/010: Analysing and stimulating number sense (co-promotor)

FWO G-08-00256: Representational adaptivity in mathematical thinking and learning: analysis and improvement (co-promotor)

Current Editorial Work

Senior Editor: Instructional Science

Assistant Editor: Educational Research International

Reviewer of multiple international journals

Dr. Richard K. Reznick, MD, MEd, FRCSC, FACS, FRCS Ed (hon), FRCSI (hon)
Dean, Faculty of Health Sciences, Queen's University
Chief Executive Officer, Southeastern Ontario Academic Medical Association

Richard Reznick is married to Cheryl, and they have three children Joanna, Josh and Gabriel. Born in Montreal, he received his undergraduate university education and medical degree from McGill University, followed by a general surgical residency at the University of Toronto. He spent two years in fellowship training, first obtaining a Masters' degree in medical education from Southern Illinois University, followed by a fellowship in colorectal surgery at the University of Texas in Houston, Texas.

Since his first faculty appointment at the University of Toronto in 1987, Dr. Reznick has been active in both colorectal surgery and research in medical education. He was instrumental in developing a performance-based examination, which is now used for medical licensure in Canada. He ran a research program on assessment of technical competence for surgeons and supervised a fellowship program in surgical education.

At the University of Toronto Faculty of Medicine, he was the inaugural Director of the Faculty's Centre for Research in Education at University Health Network (The Wilson Centre) from 1997 to 2002. In 1999 he was appointed Vice President of Education at University Health Network. He served eight years as the R. S. McLaughlin Professor and Chairman of the Department of Surgery at the University of Toronto from 2002-2010.

In July 2010, Dr. Reznick assumed the position of Dean, Faculty of Health Sciences at Queen's University and Chief Executive Officer of the Southeastern Ontario Academic Medical Organization (SEAMO).

Dr. Reznick has received numerous awards for his work in education, including the Royal College of Physicians and Surgeons of Canada Medal in Surgery, the Association for Surgical Education Distinguished Educator Award, the National Board of Medical Examiners John P. Hubbard Award, the Daniel C. Tosteson Award for Leadership in Medical Education, the 2006 Inaugural University of Toronto President's Teaching Award and the Karolinska Institutet Prize for Research in Medical Education. In July of 2011 Dr. Reznick was awarded an honorary fellowship from the Royal College of Surgeons of Scotland, and in November of 2011, an honorary fellowship from the Royal College of Surgeons in Ireland.

Dr. Reznick is the author of over 120 peer-reviewed publications and has given over 200 lectures to hospitals, universities and scientific organizations around the world.

Dr. Dr. h. c. Hans Gruber (born August 24, 1960)

Full Professor of Educational Science at the University of Regensburg, Germany

Visiting Professor at the Faculty of Education, University of Turku, Finland

hans.gruber@ur.de

- Study of psychology at the University of Munich (Germany)
 - Post-graduate scholarship at the Max-Planck-Institute for Psychological Research, Section Developmental Psychology (group of Professor Weinert)
 - Doctoral dissertation 1990, Ph.D. training in Psychology, Education, and German Literature
 - Assistant professor for Educational Psychology at the University of Munich (group of Professor Mandl)
 - Habilitation (psychology and educational science) 1998, University of Munich
 - Honorary Doctorate 2015, Faculty of Education, University of Turku, Finland
 - Since 1998 full professor for Educational Science at the University of Regensburg
 - Since 2013 Senior Fellow of the Faculty of Education, University of Turku, Finland
 - Since 2015 Visiting Professor at the Faculty of Education, University of Turku, Finland
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- Main research topics: Professional learning, Expertise, Workplace Learning, Social Network Analysis, Higher Education
 - President of the European Association for Research on Learning and Instruction (EARLI)
 - Member of the Review Board "Educational Science" of the German Research Foundation (Deutsche Forschungsgemeinschaft) - reelected
 - Member of the Accreditation Commission of ACQUIN (Accreditation, Certification and Quality Assurance Institute)
 - Member of the Programme Commission of the VHB (Virtuelle Hochschule Bayern; Virtual University of Bavaria)
 - Reviewer for about 35 international journals and about 30 international research organisations
 - Reviewer for 25 different universities in professorship appointments
 - More than 50 different positions within academic self-administration (e.g. Vice-Rector, Dean, Director of the Centre for Higher Education)
 - Awards: Teaching Award of Bavarian State Universities (2000), E-Learning in Medicine / Medikinale (2000), Research Award of the University of Regensburg (2006), Research Award of the Feldenkrais and Somatic Learning Society (2006), Best Paper Award JURE (2008)
 - Board memberships: High Ability Studies, Vocations and Learning. Studies in Vocational and Professional Education, Zeitschrift für Pädagogische Psychologie, Centre for Learning Research at the University of Turku (Finland), Talent Development and Excellence, Book series Professional and Practice-Based Learning (Springer Verlag), Book series Innovation and Change in Professional Education (Springer Verlag), Educational Research Review
 - Funding: 11x Deutsche Forschungsgemeinschaft (DFG) (average per project: 200.000 €), several times ministerial funding
 - Completed supervisions: 11x „Habilitation“ (6 achieved full professorship meanwhile), 19 doctoral dissertations (first supervisor), 41 doctoral dissertations (second supervisor), more than 300 diploma/master theses
 - 2000-2008 Director of the Centre for Higher Education at the University of Regensburg
 - 2004-2010 Liaison Officer of the German Research Foundation (Deutsche Forschungsgemeinschaft) at the University of Regensburg
 - 2010-2012 Vice-Rector for Study Affairs of the University of Regensburg, Germany

- Founding chair of the Special Interest Group “Learning and Professional Development” of the EARLI (jointly with Professor Boshuizen)
- Visiting professorships at the University of Turku, Finland (2007), the Paris Lodron University at Salzburg, Austria (2012), and the University of Turku, Finland (2013)

b. Site visit programme

Sunday, October 18, 2015

19.00 Dinner with the Scientific Director of SHE (Cees van der Vleuten) and the Management Team of Research in Education (Jeroen van Merrienboer, Diana Dolmans, Anique de Bruin, Lorette Stammen).

Monday, October 19, 2015 (DocProf room, UNS 60 - N4.22)

8.45-9.00	Welcome and introduction to the SHE by the Research Director (Jeroen van Merrienboer) and secretary (Lilian Swaen)
9.00-10.00	Closed meeting of the audit committee, discuss self-assessment report, study available documentation in the room, and prepare questions for meetings.
10.00-11.00	Discussion with Management Team of Research in Education (Jeroen van Merrienboer, Diana Dolmans, Anique de Bruin, Jorrick Beckers)
11.00-12.00	Discussion with Staff Members of Research in Education
12.00-13.00	<i>Lunch</i>
13.00-14.00	Discussion on PhD coordination and PhD activities (Anique de Bruin, Diana Dolmans, Lilian Swaen)
14.00-15.00	Discussion with PhD candidates
15.00-15.30	Possibility to discuss final issues and remaining questions with Management Team of Research in Education
15.30-16.30	Preparation of first oral impression by review committee
16.30-17.00	Public presentation of first impressions
17.00	Informal end / drinks

c. Quantitative data on the research unit's composition and financing

Taken from the self-report

Table 1. Research staff at School level - RiE (FTE / year).

	2010		2011		2012		2013		2014		2015	
	#	FTE										
RiE												
Scientific staff ¹	31	8,4	32	8,6	29	7,7	26	6,9	27	7,1	27	7,9
Post-docs ²	0	0,0	0	0,0	0	0,0	0	0,0	2	1,1	3	2,0
PhD students (UM-appointed) ³	21	12,1	30	12,5	17	11,0	14	8,3	9	6,3	8	6,2
PhD students (international) ⁴	43	0,0	52	0,0	49	0,0	56	0,0	60	0,0	56	0,0
Total research staff⁵	52	20,6	62	21,1	46	18,8	40	15,2	38	14,5	38	16,1
Support staff	14	5,7	15	4,2	9	4,9	9	3,9	9	2,9	8	3,6
Visiting fellows	3	0,1	6	0,1	3	0,1	2	0,0	0	0,0	0	0,0
Total staff	69	26,3	83	25,4	58	23,7	51	19,1	47	17,4	46	19,7

¹Comparable with WOPI-categories *HGL*, *UHD* and *UD*, tenured and non-tenured staff.

²Comparable with WOPI-category *onderzoeker*, including postdocs.

³Regular PhDs (employed by Maastricht University).

⁴International/external PhDs (not employed by Maastricht University).

⁵International/external PhDs excluded.

Table 2. Funding of RiE.

	2010		2011		2012		2013		2014		2015	
	FTE	%										
<i>Funding:</i>												
Direct funding ¹	23,0	87,2	20,5	80,8	17,3	73,2	13,9	73,3	12,8	74,4	13,8	76,6
Research grants ²	1,9	7,2	1,8	7,0	2,3	9,6	2,4	12,6	2,2	12,9	2,1	11,7
Contract research ³	1,4	5,3	2,7	10,6	3,6	15,2	2,2	11,5	1,7	9,9	1,5	8,3
Other	0,1	0,3	0,4	1,6	0,5	2,0	0,5	2,5	0,5	2,8	0,6	3,4
Total funding	26,3	100	25,4	100	23,6	100	18,9	100	17,2	100	18,0	100
<i>Expenditure (Keuro):</i>												
Personnel costs	1.388,7	83,3	1.320,0	86,6	1.284,9	84,6	1.264,6	86,3	1.312,3	87,4	1.445,1	87,1
Other costs	278,7	16,7	204,7	13,4	233,6	15,4	201,3	13,7	189,3	12,6	213,3	12,9
Total expenditure	1.667,4	100	1.524,7	100	1.518,5	100	1.465,8	100	1.501,6	100	1.658,4	100

¹Direct funding by Maastricht University / FHML.

²Research grants obtained in national and international competitions (e.g., grants from NWO, ZonMw and ERC – see Appendix 6.2).

³Research contracts for specific research projects obtained from external organizations, such as industry, governmental ministries, European Commission, and charity organizations.