Learning through Inquiry in Higher Education: Current Research and Future Challenges (INHERE 2018)

Munich, 08.-09.03.2018

Book of Abstracts

Editors: Harald A. Mieg, Wolfgang Deicke, Frank Fischer, Martin R. Fischer & Jan Zottmann

Host: Institut für Didaktik und Ausbildungsforschung in der Medizin
Klinikum der Universität München, LMU München
Pettenkoferstraße 8a
80336 München

Sponsorship: The INHERE 2018 conference was funded by the Federal Ministry of Education and Research (BMBF) under grant number 01PB14004.

SPONSORED BY THE

Federal Ministry of Education and Research

Please find the online publication of this book of abstracts in the portal German Medical Science: http://www.egms.de/en/meetings/inhere2018/

22

Scientific Inquiry in Health Sciences Education: Analyzing Junior Faculty's Teaching Portfolios

Peter Musaeus

Aarhus University, INCUBA, Aarhus Nord, Denmark

Background: Assistant professors in the health sciences (108 participants from biomedicine, clinical medicine, dentistry, sports, nursing and public health) submitted their teaching portfolio as part of the requirement for a pedagogical course for university teachers at Aarhus University, Denmark. The course introduced participants to concepts and methods to create constructive alignment and activating teaching and to a teaching portfolio as a means of reflecting upon inquiry and teaching.

Design: This study investigated assistant professors espoused beliefs about the role of scientific inquiry in teaching and supervision of students. The study was a discourse analysis of participants' written portfolios (each 1-10 pages).

Results: Scientific inquiry was constructed by participants as a means to increase students' motivation (e.g. to pursue a scientific career), emotions (e.g. curiosity) or as a mean to increase students' deep learning. A large group of participants took a disciplinary stand to inquiry: They saw the laboratory as an important site of learning inquiry in biomedicine or they taught about scientific findings in order to translate findings from biomedicine to clinical medicine. A small group of participants expressed the view that students need meta-cognitive skills to develop scientific inquiry. Furthermore, they subscribed to a minimally guided inquiry model whereby students should learn to question their own findings. Even fewer participants perceived of scientific inquiry in terms of a more systematic approach to higher-level thinking. Thus although participants cited one or more constructivist educational theorists, they did not express a well-articulated notion of inquiry and they provided limited concrete examples on how to design a conducive learning environment around inquiry or critical thinking.

Discussion: The value of this study is that it might enable educational developers to give junior faculty better guidance on teaching and specific feedback on their teaching portfolio in particular in regards to the design of learning activities that might use scientific inquiry as means and end in higher education.

Please cite as: Musaeus P. Scientific Inquiry in Health Sciences Education: Analyzing Junior Faculty's Teaching Portfolios. In: Learning through Inquiry in Higher Education: Current Research and Future Challenges (INHERE 2018). München, 08.-09.03.2018. Düsseldorf: German Medical Science GMS Publishing House; 2018. Doc22.
DOI: 10.3205/18inhere22, URN: urn:nbn:de:0183-18inhere221
This article is freely available from http://www.egms.de/en/meetings/inhere2018/18inhere22.shtml

23

Research-Oriented Learning in Teacher Education by Professional Simulation

Manfred Riegger

University Augsburg, Augsburg, Germany

Introduction: In teacher education there is a major discrepancy between theory and practice more precisely between research and learning-practice at university and classroom practice on the one hand and scientific knowledge at University and the need for professional knowledge to act at school one the other hand (cf. [1]).

Methods: The goal of the presentation is to introduce simulation to integrate theories and practices by research-oriented learning.

To reduce complexity we simulate classroom practice at university on the one hand and put students into simulated classroom practice at university on the other hand. This simulation-model is the basis for research-oriented learning and teaching (cf. [2]). Thus students can proof their understanding of scientific knowledge in action and give scientific-based reasons for their actions.

Results: Stages of simulation are: 1) preparation of the setting, 2) cooperation contract, 3) simulation, 4) reflexion on habitus, 5) evaluation (cf. [3]).

Research-oriented learning within simulation is an opportunity to improve professional teacher education inclusive learning by doing (cf. [4]).

Discussion: I will show: Research-oriented learning can help to relate both forms of knowledge.

References

1. Riegger M. Der professionalisierte religionspädagogische Habitus. In: Heil S, Riegger M (Eds). Der religionspädagogische Habitus. Professionalität und Kompetenzen entwickeln - mit innovativen Konzepten für Studium, Seminar und Beruf. Würzburg: Echter; 2017. p.33-62
2. Huber L. Forschungsbasiertes, Forschungsorientiertes, Forschendes Lernen: Alles dasselbe? Ein Plädoyer für eine Verständigung über Begriffe und Unterscheidungen im Feld forschungsnahen Lehrens und Lernens. Hochschulwesen. 2014;62:22-29.
3. Riegger M. Phasen. In: Heil S, Riegger M (Eds). Der religionspädagogische Habitus. Professionalität und Kompetenzen entwickeln - mit innovativen Konzepten für Studium, Seminar und Beruf. Würzburg: Echter; 2017. p.125-136
4. Mieg HA. Einleitung; Forschendes Lernen - erste Bilanz. In: Mieg HA, Lehmann J (Eds). Forschendes Lernen. Wie die Lehre in Universität und Fachhochschule erneuert werden kann. Frankfurt a.M.: Campus; 2017. p.20-31

Please cite as: Riegger M. Research-Oriented Learning in Teacher Education by Professional Simulation. In: Learning through Inquiry in Higher Education: Current Research and Future Challenges (INHERE 2018). München, 08.-09.03.2018. Düsseldorf: German Medical Science GMS Publishing House; 2018. Doc23.
DOI: 10.3205/18inhere23, URN: urn:nbn:de:0183-18inhere236
This article is freely available from http://www.egms.de/en/meetings/inhere2018/18inhere23.shtml

24

How do students learn through research? – Operating between know-how, methods, and attitudes

Katrin Rubel

FHP, Potsdam, Germany

The academic-didactic concept of research-oriented teaching strives to include students in the scientific cognitive processes in such a manner that they can actively (participate in) research. This way, students should (better) manage to adapt a scientific approach [1] that is characterised by an independent, methodologically substantiated, and reflective approach. These teaching and learning settings are challenging for all involved actors and at various levels [2], which led me to question how students perceive their own learning situation, which learning strategies they develop, and how they organise their learning processes and master the subject matter.

Within the sub-project "Learning" of the BMBF-supported cooperative project ResearchLearning, I have selected a qualitative research design, which is based on the Grounded Theory methodology [3]. The research data are gathered from group discussions [4] and problem-oriented interviews (Witzel 2000) with students from various institutes of higher education, various Master's and Bachelor's degree programmes of the social sciences and humanities in 2015 and 2016.

The analytical background of the subject-scientific theory of learning [5], with its theoretical conceptualisation of the analytical categories of the defensive vs. the expansive learning rationale patterns, allowed me to work out three central learning rationale types. The starting point for student learning processes are various problems of action, which can range from knowledge acquisition to the development of methodological competences and the development of a scientific identity, and are therefore related to distinct learning interests and challenges. Crucial differentiation criteria for the systematisation of the student learning strategies are the degree of reflective capacity and the assumption of responsibility for a student's own learning process.

Related to this, the question arises to which extent detailed knowledge regarding student learning strategies and patterns might aid the consulting support of student learning processes.

References

1. Huber L. Warum Forschendes Lernen nötig und möglich ist. In: Huber L, Hellmer J, Schneider F (Eds). Forschendes Lernen im Studium: Aktuelle Konzepte und Erfahrungen. Bielefeld: UniversitätsVerlag Webler; 2009. p. 9-35.
2. Brew A. Research and teaching: Beyond the divide. Basingstoke: Palgrave Macmillan; 2006.
3. Strauss A, Corbin J. Grounded Theory. Weinheim: Beltz; 1995.
4. Loos P, Schäffer B. Das Gruppendiskussionsverfahren. Theoretische Grundlagen und empirische Anwendungen. Opladen: Leske + Budrich; 2001. DOI: 10.1007/978-3-322-93352-2
5. Holzkamp K. Lernen. Subjektwissenschaftliche Grundlegung. Frankfurt am Main: Campus; 1993.

Please cite as: Rubel K. How do students learn through research? – Operating between know-how, methods, and attitudes. In: Learning through Inquiry in Higher Education: Current Research and Future Challenges (INHERE 2018). München, 08.-09.03.2018. Düsseldorf: German Medical Science GMS Publishing House; 2018. Doc24.
DOI: 10.3205/18inhere24, URN: urn:nbn:de:0183-18inhere248
This article is freely available from http://www.egms.de/en/meetings/inhere2018/18inhere24.shtml

25

Explorative vs classical practical course – How to inspire scientific thinking in medical students

Rudolf Schubert, Olga Zavaritskaya, Julia Eckel, Katrin Schüttpelz-Brauns

Medical Faculty Mannheim, University Heidelberg, Mannheim, Germany

Introduction: Recently, the skills of medical students in scientific thinking have been identified as an important and timely issue in medical education. Scientific thinking cannot be imparted by classic lectures, but require active involvement of students in courses. We modified a practical course in physiology. A study was designed to test whether the new course facilitates scientific thinking without impairing physiological knowledge transfer.

Methods: The study group consisted of 214 first year medical students of the Medical Faculty of Heidelberg University. Written consent for participation in the study was obtained from all participants. The group was randomly divided into 2 equal-numbered groups (traditional vs. modified course). Subject of both courses was a laboratory experiment in skeletal muscle physiology. In the traditional course the students addressed topics already presented in lectures. In the modified course students dealt with the same topics as in the traditional course, but the experiment was extended to include one issue not taught before. When working on this issue, the students were instructed in scientific thinking by the teacher. Both courses were run in parallel. Thereafter, all participants filled a questionnaire with 8 multiple choice questions, addressing the physiological background of the experiments, and 1 open question, addressing 4 criteria of scientific methodology.