

English Version

HOHENHEIM MEMORANDUM ON RESEARCH-BASED LEARNING

Occasion

Research-based learning has been a significant postulate of the academic reform for the past 50 years. The conference „focusURE“ provided an opportunity to discuss the aspirations involved, and to take stock. Crucial postulates that emerged from the discussions are summarized in this memorandum. The authors extend their gratitude for critical and constructive discussions and proposals to all participants.

Intention

The intention of this memorandum is to generate impulses for the further development of research-based learning, particularly at German-speaking universities and against the background of the expiring federally funded Quality Pact for Teaching by the end of 2020. The memorandum takes up the - in parts - unfulfilled postulates that arose from debates in previous years as well as insights of the conference with its interdisciplinary and international participants. The postulates address all stakeholders of higher education institutions in Germany. Our considerations in addition might provide suggestions for other higher education systems as well.

Research-based learning under changing conditions

The publication „Forschendes Lernen – Wissenschaftliches Prüfen“ (‘Research-based learning – scientific assessment’; BAK, 1970) launched research-based learning in the German-speaking communities. **Research-based learning involves students in research:** They pose a research question, develop own strategies and bear the risk of failure. They verify achieved results and present them in a comprehensible and verifiable manner. Finally, students reflect both the research process as well as their role as a researcher. The concept of research-based learning is quite demanding! Initially claimed by the above cited report some fifty years ago, this concept has shaped our understanding of research-based learning as well as the debate on education and higher education policy until today.

The **higher education landscape**, however, has **changed considerably** since then: it became more differentiated, diverse, and international. The competition for third-party funding in research and teaching as well as for the brightest minds has increased significantly. The same holds true for the exploitative pressures on academic insights, and the demands for immediate utility placed on them. University profiling is becoming increasingly important. This is reflected in a transformed governance of universities. “Unity of Teaching and Research” or “Education by Science” have remained guiding principles of the university’s self-conception. However, the ways of realization need to be re-evaluated – not the least because of the marked increase in student numbers and the changed modalities of academic knowledge production. The learning conditions for students have also changed, and they continue to do so, for example due to digitalization. “Continuity in change” has becoming the striking characteristic of both university parameters and learning conditions of students. In Europe, the **Bologna Reform** has significantly changed the study structures. The reform aimed at a harmonization of European university degrees, qualifications, and quality standards. Along this process, new requirements for study programs were laid

down: with regard to the acquired academic and social competences, regarding their professional utility (“employability”), or their international dimension.

According to various education policy documents and reports, **research-based learning is considered a response to such changing societal expectations towards higher education.** In Germany, a number of federally funded projects in the framework of the Teaching Quality Pact have realized this recognition. They have established cross-faculty concepts and structures to enhance research-based learning. In doing so, they have reinforced the research component of their university. Furthermore, research-based learning meets the demands of current developments in teaching and learning by drawing upon the multiple understandings of roles of lecturers and students. However, the development of structures across the university, the recruitment of committed lecturers as multipliers in their faculties, and the development of cross-faculty offers of support for both research-based teaching and learning do not run in an automatic manner. They need continuous maintenance and further development, which requires qualified personnel and other. In short: **Research-based learning is demanding – but it is worth the effort!** At the same time, research-based learning is not a magic formula as exaggerated claims in education policy publications frequently suggest. It is necessary to scrutinize the potential of research-based learning in order to fulfill it sustainably. **Measures need to be taken at the individual, curricular, university, and higher education policy levels.**

POSTULATES

1. Research-based learning asks universities to act according to their self-conception

Research-based learning calls universities to combine teaching and research. Generating academic knowledge during higher education programs by conducting research is an integral part of any study, regardless of the type of institution. However, the latter is an important parameter to be considered when realizing the institution-specific type of research-based learning.

What needs to be considered, what needs to be done?

Research-based learning is a concept of immersion: Students immerse in and experience the academic research environment. Enabling this experience requires curricular, didactical and organisational conditions. Existing resources should be used in ways that comply with the demands of research-based learning – from the first days of taking up a study program!

2. Research-based learning contributes significantly to achieve the decisive goals of higher education

Research-based learning creates room for initiative, testing and experimentation, but also confronts students with challenges such as imponderability and unforeseen results. In so doing, students become enabled to gain experiences and develop competences, which are necessary prerequisites for professional academic activities, both inside and outside the university. This also relates to the educational claim that combines personality development and scientific skills. Students benefit from research-based learning!

What needs to be considered, what needs to be done?

Research-based learning is very demanding for students. They must be ready for unforeseen results and uncertainties, that might be moderated by lecturers, but should not

be dispelled. Students need to take a leap of faith to their studies. On the other hand, those responsible for study programmes have the task to explain the concept of research-based learning to their students, and to familiarise them with goals and attitudes. In addition, the implementation of research-based learning must be integrated in a study structure that take the particular challenges for students into account, in a careful manner. This requires agreements between all stakeholders involved: from study coordinators to lecturers and support facilities.

3. Research-based learning promotes professionalism in teaching

Research-based learning (and teaching) reaches out to the rationality of lecturers who attach high priority to research within their perceived role. Through research-based learning, a genuine transfer from research to teaching takes place. Synergies between research and teaching compensate for the additional effort that likely accompanies research-based learning. Conversely, research-based learning boosts the acceptance of teaching as an integral part of science. Such a unity of teaching and research increases the professionalism in teaching. Thus, lecturers also benefit from research-based learning and teaching!

What needs to be considered, what needs to be done?

Research-based learning is a didactical concept. The successful implementation of research-based learning requires both didactical knowledge and practical wisdom. There are manifold challenges to be met while supervising research-based learning: ranging from methodological support to the discussion of results, from considering heterogeneous prerequisites for studying to handling of student experience of failure. Collegial sharing offers the possibility to reflect experiences discursively, and to refine one's own teaching behaviour due to didactical quality standards.

4. Universities are venues for science and areas for research-based learning

Universities are venues for science, its critic, and further development. Research-based learning integrates students into scientific debates, reciprocating between critical questioning, verification, and validation of knowledge. In areas of research-based learning, student considerations are taken seriously: an exploratory, critical – namely scientific – attitude is demanded at once. In this way, research-based learning fulfils a traditional higher education claim: the reproduction and sharing of expertise. Research-based learning pays off for universities!

What needs to be considered, what needs to be done?

Scientific thinking and acting requires freedom. This also holds true for students. Securing windows of opportunities that can freely be configured is thus important when designing a curriculum. The question to be considered is how student considerations and projects can be evaluated discursively in a scientific way. Any study program should provide opportunities to engage in research projects at an early stage. Such experiences are significant for students when considering a scientific career.

5. Continuous development of research-based learning is a prerequisite for continued success

The way research and teaching are performed change continuously. Concepts of research-based learning need to consider the changing modes of knowledge perception and production as well as emerging new media of teaching and learning. Disciplinary practices

matter, as do interdisciplinary claims. However, research and research-based learning remain social processes of discourse and dispute that require respective competences.

What needs to be considered, what needs to be done?

Research-based learning connects research to the educational system, i.e. two different reference systems. This poses several challenging questions, for example regarding the type of examination, or the understanding of roles of stakeholders in research-based learning. The current examination regulations often are unsuitable since they commonly favour biased and prescriptive forms of teaching, learning, and examination. Traditional roles in the teaching/learning relationship do not match with the goals of research-based learning. A culture of „common epistemic curiosity“ seems better suited for research-based learning. Lecturers and those responsible for study programmes need to be empowered to adapt existing structures to the goals of research-based learning.

6. Research-based insights and reflected experience are the basis of practical wisdom

Research-based learning implicitly claims the scientific character of teaching: it demands to take the insights of didactical research into serious account. On the other hand, the realization of research-based teaching relies on experiences which suggest certain approaches, without formal scientific proof.

What needs to be considered, what needs to be done?

Higher education didactical research is still neglected, at least in German-speaking countries. Considering the importance of teaching in higher education institutions, this neglect is astonishing. There is a need for establishing a system of higher education didactics and for new professorships that conduct didactical research, to actually comply with the self-conception of universities. Further, accumulated experiences need to be secured and stored, a necessity frequently jeopardised by precarious employment situations. A third aspect to be considered relates to how discussions about teaching can be promoted, including dialogue formats within universities as well as collaborative publication formats.

7. Research-based learning pays attention to societal responsibilities of research

Paying attention to the societal relevance and responsibility of research has always been part of research-based learning and continues to do so. This includes ethical questions that arise from new possibilities of knowledge exploitation. Research-based learning thus promotes the respectful and careful dealing with knowledge and contributes to academic education in a major way.

What needs to be considered, what needs to be done?

The societal relevance of research is reflected by various emerging discussions: from big data to data literacy, from transdisciplinary challenges to citizen science. Student research projects are ideally suited to illustrate and expose students to such topics. Being part of a scientific community and critical personalities at the same time, students take on different roles. They contribute to a comprehensive validation of the newly generated knowledge. Moreover, they can take on the role of „ambassadors of science“ in the context of the increasingly relevant communication between the scientific community and the general public.

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