

The relationship between teaching and research in higher education

Unity in diversity





Summary

In this report the Advisory Council for Science, Technology and Innovation (AWTI) addresses the question of how policy can help ensure that the relationship between teaching and research in Dutch higher education makes a strong(er) contribution to the quality of both teaching and research and to the future prospects of students.

Analysis: link between teaching and research under pressure

Traditionally, university teaching and research have complemented each other and exerted a positive mutual influence. For students, the research component of higher education is essential in helping them develop the skills to gather, synthesise and create knowledge, as well the various other skills they need in the 21st century.

The knowledge and skills that research staff gain through their teaching furthers their academic research, and students contribute to configuring research. The link between teaching and research need not always take the same form. While it is important that every student ultimately leaves higher education with some basic research skills, by no means every student is destined to become a professional researcher. However,, an enquiring attitude and the ability to understand research are important skills for all knowledge workers.

The view that the teaching-research nexus in higher education is beneficial for both students and teachers is generally accepted, but largely unstudied. To date it is unclear how the relationship between teaching and research can best be organised to achieve the desired results . Current university practice is the result of a long path of development. By contrast, research practice within universities of applied science (*hogescholen*), with their traditionally strong focus on education,

is relatively young and not yet fully crystallised.. The main issues *hogescholen* face when it comes to linking teaching and research relate to their limited volume of research and small number of research staff and teaching staff involved in research, The research volume is too limited to reach all students, and the research role of *hogescholen* is much less heavily emphasised than teaching.

Three developments

Several developments threaten to drive teaching and research apart in some areas of higher education. First, research staff experience high pressure at work ,which has a knock-on effect on their teaching quality. This pressure stems among other things from the declining funding per student and the growing prevalence of funding based on quantitative factors (number of students, throughput time and qualifications) – itself the subject of a current public debate.. In many cases, this emphasis has a negative impact on teaching quality, as institutions try to fast-track students through their courses in order to meet government requirements. In combination with the declining funding per student, over the years this has forced higher education institutions, especially those offering a broad range of curricula, to deploy fewer lecturers in larger ‘mass lectures’, with few contact hours and – in the eyes of many – poorer education as a result.

A second development is the (global) culture and practice that has developed, mainly at universities, of focusing on research, a trend that is reinforced to some extent by the funding system. A university is a teaching institution in the first place, but today a university career depends more on research output than on teaching. As a result, many university staff focus on research, sometimes even seeing teaching as an obligation that eats into their research time, even if they like or even prefer teaching Thus, it has become increasingly accepted for university staff to concentrate on research and, wherever possible, to transfer their

teaching tasks to (sometimes temporary) staff who focus almost entirely on teaching. This in turn means that a growing number of staff at universities are engaged in either research or teaching, and the two tasks function in largely separate silos. This can have repercussions on the relationship between teaching and research and can negatively impact the quality of the research component of higher education programmes. It was against this background that the Dutch government vision document on science (*Wetenschapsvisie 2025*) announced that the funds released from the introduction of student loans will be reinvested in higher education and in research directly linked to teaching. Universities then indicated that they will use the funds (as well as funds from their reserves) to finance smaller-scale teaching, facilitate more individual contact between teaching staff and students, review the incentives in the career paths of academics, and use temporary employment contracts to fulfil temporary tasks.

The third and final development is that research and teaching are subject to opposing dynamics. Research is increasingly concentrated at a limited number of (physical) sites. In the Netherlands this is due to the specialist profile being adopted by universities. On a world scale, too, top research is concentrated in academic hotspots. By contrast, teaching is more widely distributed (to guarantee accessibility). The number of students entering higher education is still growing, as more and more school-leavers enter higher education, and because of rising demand for post-initial education. Technological developments such as Massive Open Online Courses (MOOCs) make it easier to provide teaching across a wide geographical area.

Differentiation in practice

The way the development affect the teaching-research nexus, differs. Problems appears to be more apparent in undergraduate programmes and course with many students, especially in the humanities and social

sciences. But there are also programmes, mainly in science and technology disciplines, where students are taught by professors and (senior) university lecturers from the start of their studies. These differences have their origin in the complex, partially historical, way in which public funding is allocated between institutions and courses of study. The situation at *hogescholen* is different again; they will first need to increase their volume of research and work on strengthening the link with teaching. A start has been made: some institutions already offer programmes built entirely around practice-based research.

In addition, higher education is subject to a number of more or less exogenous trends: the growing importance of '21st-century skills', the demand for flexible and post-initial educational pathways, digitalisation, globalisation, democratisation of knowledge and the global concentration of top research. The AWTI believes that these developments also create four key challenges for higher education institutions: (1) striving for a better balance between research and teaching; (2) delivering customisation; (3) seeking innovative ways of engineering the link between teaching and research; and (4) organising more mutual collaboration, if possible in a regional context.

Conclusion

This report sets out from the premise that the link between teaching and research is of great importance. The first conclusion is that this importance is if anything growing rather than declining, as the labour market increasingly demands 21st-century skills. The second conclusion is that the link is under threat in various parts of the Dutch higher education system or (in the case of higher professional education (*hogescholen*)) is not yet fully formed. Research and teaching are becoming unbalanced, although there are important differences between master's and bachelor's programmes, universities and *hogescholen* and

between disciplines. Higher education faces the challenge of turning the tide where necessary and linking teaching and research in a way that is both focused on the future and differentiated.

The first move has to come from the institutions themselves, and they have already given a number of undertakings in this regard. It is of particular importance that they devote continuous attention to the quality and motivation of teaching staff, to raising their teaching performance through support, incentives and if necessary sanctions. The government can help by evaluating the incentives created by policy and by the funding system, and by making changes where necessary. But also through external incentives – the experiment with performance targets has, for example, undoubtedly impacted teaching quality. Once again, institutions need to make the first move, but external incentives must make the envisaged changes possible, and sustain and support them. The government would do well to evaluate existing policy incentives and make changes where necessary so that it is able to reward and value teaching as well as research.

Recommendations

To help institutions tackle the challenges identified above, the AWTI makes the following recommendations to the Ministry of Education, Culture and Science and, where relevant, the Ministry of Economic Affairs:

Recommendation 1: Analyse where the link between teaching and research is productive and strengthen it where necessary

Ask institutions to state explicitly for each programme type (researcher training, professional education), each discipline and each educational phase (bachelor, master's) what research contributes to teaching, and which research (by students, lecturers) is needed. Bear in mind that, in the light of labour market developments, every higher education programme must impart certain research skills to students and.

Encourage differentiation within institutions in the way in which, and the extent to which, students come into contact with research, depending on the objectives of their course of study.

Recommendation 2: Strengthen the link between teaching and research at universities by striving for a better balance in the value attached to teaching and to research

- ▶ Ask universities to focus more on teaching quality and less on quantity, using the resources released through the introduction of the student loan system. Develop quality indicators for teaching, adapt the direct government funding system accordingly and make agreements on this with universities. Also acknowledge the benefit of research for teaching in the indirect government funding (funding through independent public bodies). For example, ask the Netherlands Organisation for Scientific Research (NWO) to treat the involvement of researchers in teaching as a positive factor when assessing research proposals and stop providing replacement grants for teaching. At European level, seek adaptation of the regulations so that EU-funded doctoral students are funded for four years and can follow a course of

education as part of their doctoral programme; ask NWO to make a similar adjustment.

- ▶ Encourage universities to strengthen (the status of) their teaching activities through their personnel policy, among other things by basing rewards for academic staff on teaching performance as well as research, making career development (tenure tracks) partly dependent on teaching performance, making specialisation in teaching as a career path more attractive, and offering in-service training and career guidance to make good shortfalls in teaching quality.
- ▶ Work to improve the integration of teaching and research reviews, with the aim over time of bringing the review and accreditation processes together in a single system. Structure teaching reviews more along the lines of ranking and encouragement (comparable with research), initially at universities and later at *hogescholen*. The proposed reform of the accreditation system towards institutional accreditations lends itself to such an approach, as it will change the focus to encouraging better teaching quality and less on box-ticking inspections and supervision. In time, this offers opportunities for aligning with the SEP protocol that is used in research reviews. The supervisory role could in time be returned to the Inspectorate of Education.
- ▶ Stimulate a change in the culture surrounding teaching and research. For example, ask universities to elevate responsibility for teaching to the same level as responsibility for research, as the law intends. Refer to teaching as a mission rather than a burden. Abandon the use of the English terms 'research university' for *universiteiten* and 'university of applied science' for *hogescholen*, because they create the impression that institutions place research above education. Recognise and

exploit to the full the binary nature of the Dutch higher education system, including in English, by referring to *universiteiten* as universities and choosing a different term for *hogescholen*, for example 'colleges for professional higher education', which goes some way to reflecting the original Latin approach: *studium generale* for universities and *studium particulare* for *hogescholen*.

- ▶ Raise the profile of good quality teaching. Create national prizes or distinctions for top-performing lecturers. Promote the establishment of a national ranking for teaching in higher education which also highlights the link between teaching and research. Do all of this by collaborating to establish high international rankings for teaching and by seeking help and advice from the Royal Netherlands Academy of Arts and Sciences (KNAW).

Recommendation 3: Continue developing the research function of *hogescholen*

- ▶ Ask *hogescholen* to use the funds released by the introduction of the student loan system to provide research training for teaching staff and to increase the number of these staff.
- ▶ Ask *hogescholen* to give teaching staff more time and opportunity to perform research. To this end, encourage collaboration within regions, with local businesses, civil-society organisations and universities. Help them to link research to teaching by sharing good practices and through coaching and training.
- ▶ Ask *hogescholen* to bring in teaching staff assessments that take into account their involvement in research and the quality of their research output. To this end, facilitate the development of indicators which measure the importance and quality of applied research. Support this

by tailoring the funding of *hogescholen* accordingly.

Recommendation 4: Engage in cooperation to strengthen the link between teaching and research

- ▶ Support universities and *hogescholen* wishing to offer courses jointly in order to deploy teaching staff more efficiently and create shared research opportunities for groups of students.
- ▶ Ask institutions to extend their scope to include research within the region, so as to give students access to research skills that will be of practical use in their later careers.
- ▶ Aim to develop joint MOOCs and Small Private Online Courses (SPOCs). Use the resultant efficiency gains to further reinforce the research component in teaching.

Recommendation 5: Invest in systematic research to determine the importance of research for higher education

There is only limited scientific insight into the importance of research for teaching in higher education, and the understanding of the significance of teaching for research is if anything even more sparse. Strengthening the link between research and teaching where this is beneficial requires a more robust empirical basis. Take the initiative to develop this basis by funding the necessary educational and other research.