

Executive summary

What are the particular features of student education in research-rich universities, and how is excellence in education conceived and practised? Drawing on data gathered via a qualitative questionnaire from the member universities of the League of European Research Universities (LERU) and a range of relevant academic literature, we examine the distinctive ways in which students are educated in research-rich institutions and the approaches being taken to develop educational opportunities to meet the needs of contemporary societies.

Relevant academic literature points to a number of key themes, including the nuanced relationships between research and student education within and beyond the curriculum, the complexities of defining research itself, the challenge of developing a quality culture and the importance of effective educational leadership. Data from the survey suggest that in research-rich universities students do not just learn about research; they also undertake research and enquiry within and across disciplines. Their active engagement with cutting-edge enquiry leads to a wide range of learning outcomes needed for professional life, including critical thinking, the ability to solve complex problems and ethical awareness. Examples of good practice from across LERU universities are presented, illustrating the ways in which students benefit by learning from researchers who are working at the cutting-edge of knowledge.

Barriers to the provision of excellent education are also explored. These include internal barriers, such as structures and processes, and organisational cultures that may traditionally have valued research more highly than student education. External barriers include limited funding in a time of massive growth in student numbers, lack of stability with funding and policy, and insufficient resources nationally and internationally for undertaking evidence-based studies into the effectiveness of higher education practices.

Within these challenging and changing contexts, research-intensive institutions are actively working to enhance their educational provision. Diverse approaches are being taken to enrich students' educational opportunities. These include re-framing curricula and student assessments to make them more research-rich and more directly relevant to local, national and global issues; developing academics as educators and as inspirational leaders in the domain of

student education; and rewarding those who invest their academic and professional expertise in student education and the student experience.

Conceptions of effective leadership are considered, and it is noted that those who take a lead on delivering high quality student education in general, and on developing excellent research-education synergies in particular, need to be recognised and rewarded for their vital contributions to the academic mission.

In conclusion, a number of principles which LERU universities support are characterised, including the need to:

1. Develop strategies that enhance the synergies between research and student education;
2. Work in partnership with students and other stakeholders, wherever possible, to implement research-rich curricula;
3. Regard excellent teaching and education-focused scholarship as activities on a par with excellent research;
4. Reward and promote excellent university teachers and education-focused leaders;
5. Inform teaching with the latest findings and practices of research and offer active research experience to all students from the undergraduate phase onwards;
6. Recognise that the skills, knowledge and attributes needed for research are vital for many citizens in the modern world, and articulate this clearly to students and employers;
7. Foster a culture of quality and enhancement, through dialogue and collaboration, with respect to student education and the student experience.
8. Empower students to become leaders and agents of change.

Finally a series of recommendations is presented that arise from the study. These relate to European, national and institutional policy and are designed to promote and enhance the excellence of education in research universities.

Recommendations

European policy

1. Better links between the European Research Area (ERA) and European Higher Education Area (EHEA) agendas should be built in the form of an integrated EERIA (a European Education, Research and Innovation Area), as mentioned in the LERU briefing paper *An Era of Change* (2014).
2. European Research Programmes such as Horizon 2020 should recognise the synergies between research and students' education by promoting the development of a strategy for a) transferring research results into teaching and b) enabling students to connect with and learn from research and researchers.
3. Teaching and professional development for teaching should become part of an academic career as early as possible, and promoted wherever appropriate, for example through research funding schemes at EU level.

National policy

1. National systems for funding universities should provide the greatest possible stability, in order to allow long-term planning.
2. National funding of the university sector must take into account the increase in student numbers, the growing demand for degree-level qualifications and the need to provide opportunities for lifelong learning.
3. Governmental evaluation systems should avoid reducing the quality of teaching and learning to simple metrics. They should recognise that the characteristics of teaching and learning in general, and research-based education in particular, can best be conveyed through qualitative case studies of impact on students and society.
4. In countries where career paths are nationally determined, a path should be opened for people who excel as scholarly teachers and who can take on an academic leadership role in the education domain.
5. National funding agencies should encourage all research proposals to build in a strategy for transferring research findings and innovative practices into effective educational opportunities for students.
6. National research funding schemes should promote teaching and professional development to become part of an academic career as early as possible.

Institutional policy

1. A university should develop an overarching education strategy together with policies that are congruent with that strategy.
2. Senior leaders should make the education strategy and policies clear to all those who teach and who contribute to student education, taking into account the different disciplinary and interdisciplinary cultures.
3. Universities should allocate an appropriate budget to education that takes into account the increase in student numbers, the growing need for the development of new educational technologies, and the need for professional staff to support this.
4. Universities should consider the diversity of their students, including their different levels of prior learning and preparation for undergraduate courses, and consider their different needs in the planning of teaching.
5. Universities should reward excellent teaching and create additional incentives for outstanding teaching and leadership of student education, providing high quality educational leadership programmes appropriate for different disciplines.
6. When hiring new personnel, an applicant's former teaching experience and success should be included and valued in the decisive criteria.
7. Universities should provide developmental opportunities for both early career and more experienced educators.