

Aligning PhD Education with the Demands of the Modern Research Ecosystem

Introduction

Postgraduate research (PGR) by PhD students is integral to a flourishing research ecosystem. These students are not only at the forefront of expanding new knowledge but also pivotal in contributing to pioneering research that drives advances across various fields. Ireland's national research and innovation strategy, Impact 2030, emphasises PGR as a cornerstone of the country's future development. It aims to increase the number of researchers in the workforce from 9.52 per 1,000 in 2015 to 15 per 1,000 by 2030. This ambitious goal reflects growing recognition that PhD graduates are likely to pursue careers outside traditional academic pathways.

At Maynooth University, through broad and extensive engagement, a common and resounding need has emerged, which has led us to carefully reconsider how we equip PGR students for success. Our new Graduate Research Academy aims to address the evolving needs of our students by aligning our PhD programmes with the evolving research ecosystem. This will empower students to excel in their research by facilitating interdisciplinary and cross-sectoral research, building strong peer research communities, and equipping them with an integrated skill set necessary for successful careers in academia and beyond. This marks a significant shift in how research and higher education are intertwined with industry, policy, and societal impact.

Misalignment of the traditional PhD experience

Historically, the PhD experience has been centred on a deep, specialised research project in a narrowly defined field, typically conducted in a higher education institution (HEI) under the mentorship of an academic supervisor. It usually spans 3–6 years and involves not just research but often teaching responsibilities and participation in the



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The article discusses the need to align PhD education with the demands of the modern research ecosystem, recognising that PhD graduates increasingly pursue careers outside traditional academic pathways. It outlines Maynooth University's vision for its new Graduate Research Academy, and it advocates for a PhD experience that is more adaptable and supportive, allowing students to thrive in both academic and non-academic environments.

academic community. Its culmination is a doctoral thesis that contributes new knowledge to the field.

Some students are self-funded; others avail of scholarships by HEIs or funding agencies, receiving a modest stipend to cover living expenses. The intellectual rigor of the PhD, together with financial pressures, makes it particularly challenging. Traditionally, this was seen as appropriate preparation for a career in academia, where resilience and independence were valued.

However, the landscape of research and employment is continually changing. The traditional model is increasingly misaligned with the current research ecosystem, which demands that research outcomes – whether related to policy, innovation, health, or education – be planned with impact in mind and partially implemented during the course of the research.

Moreover, PGR education is no longer reserved for the privileged. Maynooth University is committed to supporting all students with the potential to undertake PGR studies. This commitment to inclusivity not only democratises research but also brings diverse perspectives, insights, and experiences into it, enriching the overall impact and expanding the talent pool.

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Addressing the challenges

To realise the full potential of a diverse PGR cohort, enhanced funding models are crucial. Expanding the number and diversity of students is meaningless if support structures are not adequate. Research by Grant-Smith et al. (2020) shows the importance of equity in postgraduate education: without sufficient support, efforts to widen participation may inadvertently widen existing gaps.

Completion rates and outcomes for PhD students are significantly influenced by factors such as student quality, academic environment, and financial conditions (Skopek et al., 2022). Non-completion is a personal and professional setback for students, and a significant loss of public resources. This emphasises the importance of providing robust support systems for students and their supervisors.

External factors such as economic shifts, job-market fluctuations, and housing availability can also impact students' ability to engage in and sustain their PGR. While these are often beyond the control of educational institutions, they highlight the need for more resilient and adaptable PhD funding models.

PhD training also needs to be re-evaluated given that around half of doctoral graduates gain employment outside academia, with two-thirds of these engaging in research as part of their work (Hnatkova et al., 2022). These statistics highlight the need to enhance PhD training to better prepare

graduates for careers in non-academic settings. This should include experiential learning opportunities, mobility inside and outside Ireland, collaborations with non-academic sectors, and career-focused development programmes. Such training is particularly crucial for graduates from disadvantaged backgrounds, who, on average, earn significantly less than their more affluent peers.

The need for intersectoral mobility is also emphasised in the OECD's *Skills Strategy Ireland* report (2023), which calls for stronger connections between academia and other sectors, including industry, public service, and the voluntary sector. In response, Maynooth University's vision is to develop doctoral programmes that are integrated with non-academic sectors while maintaining academic excellence.

Our vision

Our vision for PhD education in our Graduate Research Academy is one that is inclusive, flexible, and supportive of all students. This requires personalised support, beginning with tailored needs analyses that ensure that every student embarks on the programme that will empower them to succeed. We envision flexible and adaptable PhD programmes that enhance career opportunities in academia and beyond. These might include cross-sectoral supervision, international and sectoral mobility opportunities, and non-traditional study modes that accommodate the diverse needs of students.

To ensure that graduates are well equipped for the current research ecosystem, we propose the development of training pathways that focus on impact, policy, and innovation. These pathways will help students develop the skills to navigate and contribute to the complex landscape of modern research. Importantly, this vision also requires that staff receive adequate support and training to guide students effectively.

Flexibility in PhD programmes will allow students the time and space to support themselves financially. While the traditional model may remain the best option for some students and projects, for others a PhD that extends beyond the campus and integrates with the professional world may be more appropriate. For instance, work-based PhD programmes allow students to complete their studies part-time or full-time while remaining employed, focusing on research that is directly relevant to their field of employment. These programmes, often sponsored by employers, represent an investment in both the students and the knowledge generated through their research. This approach enhances the financial model for both student and employer and ensures that the research has immediate relevance and impact.

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A PhD experience that is more flexible, supportive, and integrated with relevant sectors will produce graduates who are better equipped to work in diverse environments and generate impactful research. This approach may extend the PhD but will ultimately lead to a more fulfilling and less stressful experience for students. By aligning PhD education with the demands of the modern research ecosystem and ensuring that all students have the opportunity to succeed, we can foster a new generation of researchers who can drive meaningful change.

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Enhancing the Employability of PhD Graduates



Dr Siobhán Mac Sweeney, Head of Research at MTU's Kerry Campus and Coordinator of the MTU Odyssey Programme. Photo by Pauline Dennigan

Munster Technological University (MTU) offers valuable opportunities for PhD students to engage with employers across academia, industry, government, and entrepreneurship.

Through its strong ties to regional business and innovation ecosystems, the University aims to enable postgraduate researchers to gain hands-on experience and build valuable industry connections throughout their studies.

MTU is a participant in the national roll-out of the Higher Education Authority (HEA) Odyssey Programme, a new initiative aimed at enhancing the career development of PhD students. In joining the programme, MTU is aligning with the national ambition of IMPACT 2030 – Ireland's Research and Innovation Strategy – which seeks to improve career pathways and maximise the impact of researchers across various sectors.