

**CQSD**

CENTRE | QUALITY SUPPORT  
FOR | & DEVELOPMENT



**FOCUS ON: CURRICULUM & LEARNING DESIGN**

**RESEARCH & ENQUIRY**



# INTEGRATING RESEARCH & ENQUIRY INTO THE CURRICULUM

We are a research-intensive university committed to enhancing the linkages between discipline-based research, the curriculum and student learning. This is evident in the University's Curriculum Framework which aims to develop graduate attributes, including the ability for students to:

- Appraise research and understand how knowledge is constructed and contested in the discipline.
- Develop research skills and techniques specific to the discipline.
- Design, undertake and present research as appropriate to the discipline.

This guidance provides a conceptual framework and practical strategies to support you in engaging students in discipline-based research and enquiry in the curriculum. Individuals can use it when planning teaching and learning activities that actively engage students with research; programme teams can use it to integrate research and enquiry progressively across the programme.

## Benefits of engaging students in research & enquiry

We assume that discipline-based research is valuable to our students – but how? The links between research and teaching are not automatic. Programme teams need to give thought to the nature of research in their disciplines. The ways in which this translates into learning experiences for students needs to be **planned, structured and scaffolded across a programme**. The opportunities that students are afforded, and what they gain from undertaking them, need to be well-articulated to students, and they need to be able to articulate this to others. If we do this there are many potential benefits, depending on the activities that students are engaged in.

“Research is central to contemporary democratic society. The complexity and uncertainty that characterise daily life in the twenty-first century demands that citizens are able to ...judge evidence, make critical judgements and present ideas clearly and unambiguously in democratic discussions. The ability to carry out research is thus a key characteristic of any citizen. It is absolutely essential for effective professional engagement. So learning research at university is vital.”

Brew (2015). Forward. In Guerin, Bartholomew & Nygaard, *Learning to Research, Researching to Learn* p. vii).

### Benefits for staff

- Bridges the gap between teaching and research
- Provides assistance with data collection and analysis
- Helps refine our thinking and evaluate methodologies
- Offers new perspectives through student interactions
- Generates ideas and issues for further research.

### Benefits for students

- Improves student outcomes and engagement
- Empowers students to ask and explore their own questions
- Fosters a sense of belonging within an academic community
- Connects students with the University's research
- Promotes students' independence and confidence
- Provides students with experience of working collaboratively
- Develops skills in finding, creating, synthesising and presenting information
- Develops skills in problem-solving and critical analysis
- Encourages reflexivity as they think about what they are learning and how
- Introduces key research methodologies and how knowledge is created and understood in their discipline (e.g. whether knowledge is certain, or tentative and interpretive).

## Research & enquiry in your discipline

It is at the level of the academic discipline that the links between research, teaching and student learning are most often made.

This is where programmes are planned and delivered, where staff time is organised and managed, and where research and research centres are often organised. It is where we have access to national and international networks of ideas from which we can draw, and where we can design and deliver programmes, projects or structures that foster links between research and teaching.

The nature of research will differ between disciplines, therefore the experiences we offer our students will necessarily differ (Jenkins, Healey & Zetter, 2007). It is useful **to discuss and articulate the nature of research** in your discipline before considering how this might translate into authentic experiences in the curriculum.

## A framework for linking teaching & research

There are a number of models that conceptualise the linkages between teaching and research. These models are useful as they give us a framework for discussing different pedagogies in relation to research and enquiry in the curriculum and for evaluating our own practice. The most commonly cited model is that of **Healey and Jenkins (2009)**.

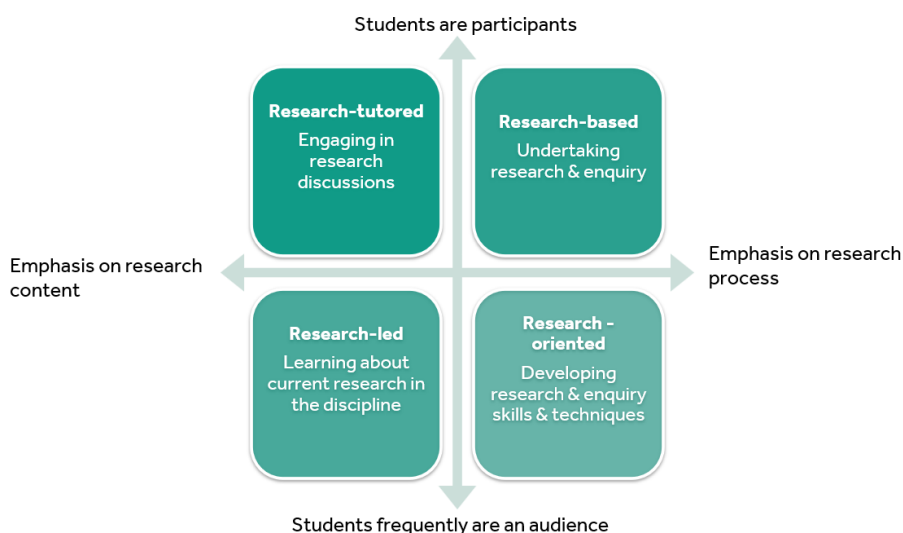


Figure 1. The nature of undergraduate research and enquiry. Source: Healey and Jenkins (2009, p7).

The vertical axis represents a continuum from a teacher focused approach where students are the audience of research, to a student focused approach in which students are active participants in research. The horizontal axis classifies approaches by their emphasis on the substantive content of research or the research process.

They outline four main ways of engaging undergraduates with research, noting that these approaches often overlap and are interlinked:

- Research-led: learning about current research in the discipline
- Research-oriented: developing research skills and techniques
- Research-based: undertaking research and enquiry
- Research-tutored: engaging in research discussions.

## Nature of research in your discipline: prompt questions

- What methodologies are most commonly used in our discipline?
- How is research undertaken in our discipline – for example by individuals or teams?
- How do we explicitly or tacitly position ourselves/our discipline in relation to knowledge creation?
- How and by whom is research funded in our discipline?
- In what ways is new knowledge in the discipline most often presented?
- How are research outcomes usually disseminated in our discipline?
- Are there other discipline specific issues concerning research? For example around equity, diversity, ethics, links to professional practice, or industrial involvement.

## Teaching & learning activities

The following table is organised according to Healey and Jenkins (2009) framework. It includes:

**A list of teaching and learning activities** illustrating different aspects of the research process with which we might engage students. Some may work for your discipline or context, while others may not. The challenge is to choose the ones that align with your learning outcomes.

**A set of complementary questions for programme teams** to identify where and how the curriculum is enhanced by research. Providing students with a modified version of the questions would also enable you to evaluate whether students experience research and enquiry as intended.

**Table 1: Potential teaching & learning activities and prompt questions**

	<b>TEACHING &amp; LEARNING ACTIVITIES</b>	<b>PROMPT QUESTIONS</b>
<p><b>Research-led:</b> learning about current research in the discipline</p>	<ul style="list-style-type: none"> <li>- Incorporate current research, debates, and data into your teaching.</li> <li>- Share your personal research experiences, including challenges and successes.</li> <li>- Introduce students to staff research by having them interview staff or read selected outputs.</li> <li>- Include recent research outputs on reading lists and guide students in reading and critiquing research articles.</li> <li>- Invite students to attend staff-led research seminars and participate in research groups.</li> <li>- Ask students to write an abstract of a research article or undertake a literature review of a given or chosen area.</li> <li>- Encourage students to follow research blogs, podcasts and social media.</li> <li>- Ask students to consider the media reporting of an issue and the original research on which it is based.</li> <li>- Ask students to consider the professional practices and the research on which they are based e.g. on placements.</li> </ul>	<ul style="list-style-type: none"> <li>- Where is current research in the discipline incorporated into students' lectures/seminars/workshops?</li> <li>- Where do students learn about current debates in research in the discipline?</li> <li>- Where is recent research data included in teaching?</li> <li>- How are students introduced to relevant research undertaken in the School?</li> <li>- Where are students introduced to relevant publications?</li> <li>- Do reading lists incorporate recent relevant research outputs?</li> <li>- How are students supported in learning to read relevant research critically?</li> <li>- Are students invited to attend staff-led research seminars? Research groups?</li> <li>- Where do students engage with public research debates e.g. blogs/podcasts/in the media?</li> <li>- What student led opportunities are there to discuss research? e.g. reading groups.</li> </ul>
<p><b>Research-oriented:</b> developing research skills and techniques</p>	<ul style="list-style-type: none"> <li>- Teach research skills and techniques within sessions, modules and programmes.</li> <li>- Provide opportunities for students to practice and/or reflect these skills in practical settings, such as laboratories or fieldwork.</li> <li>- Use skills-based audits to encourage students to reflect on their development of research skills.</li> <li>- Introduce students to methodological literature.</li> <li>- Get students working on current research questions, gathering or interpreting data, and developing or implementing research tools.</li> <li>- Give students opportunities to design research questions or enquiries.</li> <li>- Embed peer review into research activities to develop their capacity to critically appraise research.</li> </ul>	<ul style="list-style-type: none"> <li>- Where are students taught research skills and techniques?</li> <li>- Where do students have opportunities to practice research skills and techniques?</li> <li>- Where are students introduced to methodological literature?</li> <li>- Where are students given opportunities to design research questions/enquiries?</li> <li>- Where are students involved in working on current research questions? and/or interpreting/gathering data?</li> <li>- Where are students given the opportunity to develop/implement research tools?</li> </ul>

	<ul style="list-style-type: none"> <li>- Teach students about the limitations of data and of knowledge.</li> <li>- Provide access to research materials e.g. equipment, manuscripts)</li> </ul>	
<b>Research-based: undertaking research and enquiry</b>	<ul style="list-style-type: none"> <li>- Set small-scale independent research projects or involve students in 'live' research or industry-led projects.</li> <li>- Teach modules using an enquiry-based approach or set open-ended tasks that promote enquiry.</li> <li>- Incorporate flexibility and choice in what students learn and how they learn it.</li> <li>- Design activities that engage students in the entire research process e.g. bidding for research funds and presenting findings as well as conducting research.</li> <li>- Incorporate fieldwork into modules</li> <li>- Incorporate opportunities for students to undertake research/data collection during work-based learning opportunities.</li> <li>- Design interdisciplinary research projects.</li> <li>- Design dissertations or capstone projects as summative points of progressive engagement with the development of the range of skills across a programme.</li> </ul>	<ul style="list-style-type: none"> <li>- Where do students have the opportunity to undertake small scale independent research assignments?</li> <li>- Do students have the opportunity to participate in live research projects?</li> <li>- Do students have the opportunity to complete modules taught in an enquiry format?</li> <li>- Where do students have choice about what they learn and how they learn it?</li> <li>- What opportunities are there for students to engage in the whole research process?</li> <li>- Do students have research-based placement opportunities/fieldwork?</li> <li>- Do students have the opportunity to undertake a dissertation/final project? Is this the summative point of a progressive engagement with the development of a range of research and enquiry skills developed across the programme?</li> </ul>
<b>Research-tutored: engaging in research discussions</b>	<ul style="list-style-type: none"> <li>- Design learning activities which involve students engaging in research discussions with each other e.g. discussion fora.</li> <li>- Invite students to staff-led seminars and discussions.</li> <li>- Assign tasks that involve interaction with the wider research community e.g. emailing the author of a paper or participating in online research discussions.</li> <li>- Provide opportunities for students to write, review and discuss papers on research topics and processes.</li> <li>- Support a student journal club.</li> </ul>	<ul style="list-style-type: none"> <li>- What opportunities are there within sessions and/or modules which involve students in engaging in research discussions with each other?</li> <li>- What opportunities are there within sessions/modules for students to engage in research discussions with staff?</li> <li>- What opportunities are there for students to engage in research discussions with the wider research community? e.g. online.</li> </ul>

All of these examples require students to be supported through the process, with appropriate scaffolding of their learning. It is also important that we clearly articulate to students what they are learning and why.

## Research & enquiry across a programme

The challenge for us is to look at our programmes and identify where we already have strengths in research enhanced teaching. And then consider how we can build on this, for example, by creating more structured and progressive opportunities for students to engage directly in the research process, while providing opportunities for students to develop and articulate the necessary skills (in addition to knowledge) along the way.

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“All four ways of engaging students with research and inquiry are valid and valuable...curricula should contain elements of all of them. Our general view is that in much of higher education relatively too much teaching and learning is in the bottom half of the model, and that most students would benefit from spending more time in the top half...Course teams may find it useful to discuss whether they have the appropriate balance between the four activities...and how that balance may change as students progress through their programme.”  
(Healey & Jenkins, 2009, p7-8).

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## Dissemination and publication

The dissemination of research findings is an integral part of the research process. As such, as we develop opportunities for students to engage in research and enquiry in the curriculum, we should also integrate opportunities for them to disseminate and publish their work in ways that align with the disciplinary practices.

When presenting their work, students must communicate their findings clearly, using appropriate formats and styles for their chosen medium and intended audience. This process not only helps them refine their research but may also allow them to extend it through peer feedback and dialogue, and engagement with external audiences.

The work of Helen Walkington from Oxford Brookes University is a useful starting point for those interested in developing dissemination and publication opportunities for students. See for example Walkington, H (2015). [Students as researchers: Supporting undergraduate research in the disciplines in higher education](#). York: Higher Education Academy.

## Assessment

The methods of assessment that we use and the assessment tasks that we set are another way in which we can engage students with research and enquiry. If we are enabling students to engage in research and enquiry then we can also provide opportunities for them to be assessed in ways which are authentic to the research process. Some examples of this might include:

- Writing in the format of a journal article
- Writing a consultancy report
- Writing a research funding bid
- Designing a research proposal
- Engaging in peer review of the research of others
- Respond to peer feedback on their own research
- Presenting work at research conferences
- Writing for a particular audience of research.

## Examples of how students might disseminate or publish their research include:

- Websites
- Blogs
- Exhibitions and shows
- Videos
- Project reports
- Client presentations (e.g. for consultancy led projects)
- Poster presentations
- A collected volume of student work e.g. an edited collection of 'chapters' on different subjects under a theme
- Research conferences (within Schools, the University or nationally e.g. annual British Conference on Undergraduate Research (BCUR) and [Posters in Parliament](#)).
- Peer reviewed student journals e.g. [GEOverse](#) an undergraduate research journal for geographers, and [Reinvention](#) a journal of undergraduate research from a range of disciplines.

## Final year projects and dissertations

Almost all taught programmes have a dissertation or final year project as a key concluding and integrative part of the curriculum. While this experience is valued by both staff and students, it may be necessary for some programmes to review their provision in order to make the capstone project fit with changing student expectations and needs, as well as with departmental resources.

For design ideas see Healey M., Lannin L., Stibbe A. and J. Derounian (2013). [Developing and enhancing undergraduate final-year projects and dissertations](#). York: Higher Education Academy.

## References and Further Reading

See the Talis online [reading list](#) to accompany this guide.

## Co-curricular opportunities

The [Undergraduate Research Opportunities Programme](#) provides second year undergraduate students (and third year students on a four-year degree) with hands-on research experience. Students work on projects alongside staff for 6 weeks over summer or part-time over a longer period and receive a bursary. As well as funding from UROP, other sources of funding may be available via our [Doctoral training centres and partnerships](#) (e.g. [NERC Research Experience Placements](#)).

## Summary

Research and enquiry should be:

- Authentic to the research undertaken in the discipline
- Appropriate to the learning outcomes of your programme
- Deliberately planned
- Built progressively across a degree programme
- Across all Parts, building from supported to independent
- Articulated to students
- Engaging students in undertaking research, not just learning about it.

Explore Mick Healey's extensive [bibliography](#) and numerous [case studies](#) on linking research and teaching and engaging students in research and enquiry.

To contact us and explore other guides in our Focus On: series, please visit <https://www.reading.ac.uk/cqsd/teaching-resources>



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