Vol 14 | Issue 1 (2026) | pp. 170-189

JOURNAL OF
Perspectives in Applied Academic Practice

https://jpaap.ac.uk/

Strengthening the links between research and teaching: Using academic teaching colleagues' perspectives to enhance practice

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ABSTRACT

In this paper we provide an exploration of the conceptions of, and approaches to, research-teaching linkages (RTL) that are held by a group of research-active educators in our university. Teaching and research are at the heart of what universities do, but the relationship between the two is not always clear to staff or students. The work we report on is an institutional project to broaden and deepen engagement with RTL in a university that historically sits within a teaching–led context.

The project focuses on learning from creative ways to embed RTL principles and practices across a broad range of subject areas, learning and teaching environments, and curricula. A primary intention is to highlight how the intellectual work our students undertake and produce has a direct value to them, their future aspirations, and the needs of the wider communities the university serves.

This phenomenological study with a discussion of contextualised literature contributes to a field of qualitative research concerning RTL. The findings and pedagogic examples, aligned to Boyer's (1998) original classification, emerge from exploring the five academic participants' own conceptions and approaches to strengthening their research to teaching links. The examples reflect a focus on enhancing student learning and skill development, building critical thinking and using authenticity to stimulate engagement. In doing this, we offer a discussion of the findings and provide practical recommendations we hope others find useful.

Keywords: teaching, research, nexus, curriculum

Introduction

Our institutional context

Leeds Beckett University (LBU) is a large, two campus university based in Leeds, UK. LBU's current Strategic Plan (LBU, 2021) emphasises the importance of an aligned and connected community which strives for excellence in student educational outcomes, research and knowledge exchange. It also stresses the importance of a diverse and engaged staff community.

At LBU the interdependent relationship between research and teaching is at the heart of our practice. We ascribe to the principles of the Connected Curriculum (Fung, 2017) that research forms a fundamental component of course content and curricular options, that students benefit from undertaking research and inquiry throughout their time at university, and that research findings can inform the creation of innovative new pedagogical approaches. A Higher Education Policy Institute (HEPI) report (2023), by Dandridge, explores the relationship between teaching and research, stating that enhancing research informed teaching can add significant value and have a transformative impact on students, whilst noting that RTL remains poorly defined and implemented and that practice is not shared widely between staff and not always well understood by students. Stappenbelt's (2013) work also touches on the need to strengthen the effectiveness of engaging students in RTL activities so they can have tangible benefits, while Gros et al. (2020) discuss why RTL should be integrated into module and course design.

Our university has made a deliberate commitment to develop, extend and embed research-informed teaching and curricula, and to ensure a high-quality student learning experience. However, while many colleagues draw upon expert research in their teaching practice, it is recognised that there is scope to go even further in the alignment between, and integration of, research and teaching. If we do this, we will not only enhance learning and teaching with a knock-on benefit to students' continuation, completion and success (the key performance indicators for our HEI and many others in the Higher Education (HE) sector) but also cultivate an enhanced research culture that will ensure the continued relevance and currency of the curriculum. In this context and to further this aim, the Centre for Research and Scholarship of Teaching in HE (CRSTHE) was formed under the auspices of our main Centre for Learning and Teaching (CLT). One of CRSTHE's aims is to strengthen the links between research, scholarship, teaching and learning. Research and scholarship are different activities. If research is an activity to discover new knowledge and solve problems through systematic investigation then scholarship (Felten, 2013) is the examination, analysis and interpretation of existing knowledge to enhance our practice and the most useful tool for elucidating RTL. Felten's underpinning principles, which we used with our project participants, aligned to his definition and emphasis that such work must be contextualized around learning, methodologically sound, publicly disseminated and conducted in partnership with students. Other definitions of the scholarship of teaching and learning broadly align to Felten's with McKinney (2007,p. 23) emphasizing its "positive functions for individuals, courses, programs, institutions, and higher education more broadly" and Quinnell et al. (2010) recognising the importance of research that informs teaching in different disciplines as a way of benefitting the subject area, enhancing disciplinary narratives and improving the evidence for different teaching strategies which inherently will benefit the student experience.

The project, which this paper discusses, was launched during 2024-25. It followed a scoping activity to refine CRSTHE's initial terms of reference and to elicit its future priorities. Some academic colleagues involved in that activity raised RTL and its associated practice as a gap in their knowledge. Despite this,

however, it was noticeable that some other experienced researchers and active teaching staff had a wealth of knowledge to share about research informed course curricula and examples of RTL which had improved the student experience and this knowledge could be usefully shared across the university. This was certainly true of our more experienced pedagogic researchers who had contributions to share about their pedagogic practice and areas for strengthening RTL in curricula across many different disciplines and courses. We aimed to capture this knowledge.

There was a commitment to begin to share, stimulate and extend our explicit RTL activity, with the aim of strengthening our research-informed curricula in all courses, rather than just some. The multidisciplinary nature of the participants is the unique element of this project and its sampling process. They were able to share best practice ideas through the interviews and filmed resources about RTL to influence enhancement across, rather than within, disciplines (Dandridge, 2023).

Our purpose

The aims of this project were:

(a) to establish an understanding of the different ways in which RTL can be conceptualised and understood, including the potential value of RTL to students and colleagues in the institution and across the sector.

(b) to work with five intentionally selected colleagues who are both experienced teachers *and* researchers in a range of discipline areas, seeking ideas about the value of RTL, ways to enhance RTL in the curriculum through associated teaching activities, and explore the gaps and areas for perceived development.

(c) to develop and implement resources and interventions to support a wider approach to the development of RTL in our institution.

We recognised from the outset that a range of terms are used to describe activities associated with RTL, including 'research-informed teaching', 'the research teaching nexus', 'research-based learning and teaching' and 'the scholarship of teaching and learning' (SoTL). We use the term RTL as an overarching one that encompasses these practices. RTL, conceptualized by Rayner et al. (2020) integrates concepts from well-known work about students and curricula relating to 'students as producers' (Neary et al., 2014), students as partners (Cook-Sather, 2013, the Connected Curriculum (Fung, 2017), and the research teaching nexus (British Academy, 2022).

Context and background literature

The contextualised literature allowed us to understand RTL in HE more fully and provide grounding for our qualitative investigation into how our five selected colleagues conceptualised and practised RTL.

Defining the research teaching nexus

The linkage between research and teaching goes back to the Humboldtian idea of a university as one of the fundamental pillars upon which a modern university should be constructed. Dandridge (2023) emphasises the importance of maintaining both research and teaching functions and strengthening the bond between them to benefit both universities' reputations in the HE sector and for the transformative effect exposure to research through teaching has on students.

In literature, RTL is often referred to as the research teaching nexus - an extensive, visible, and institutionally supported series of productive, interlocking and often bidirectional connections between teaching and research within and across all subjects. The nexus has gained visibility and significance for the HE sector in recent years (British Academy, 2022) for good reason. HEPI (2022), Dandridge (2023) and the extensive British Academy (2022) report explore various reasons for the lack of connectedness between research and teaching in the classroom. They discuss the increased marketisation and internationalisation of the HE sector and point explicitly to the greater emphasis being placed on league tables focusing on research measurables rather than teaching-focused performance. These reports explore the reasons for this citing a lack of funding to prioritise the connection between teaching and learning, that more academic staff are being issued with teaching-only contracts with little opportunity for them intertwine their teaching and research, that sector bodies do little to promote and value the interrelationship between teaching and research and that academic promotion schemes in many universities are still predominantly tied to research impact rather than teaching impact.

As teachers and practitioners, we are aware that the effective integration of research and teaching requires proactive and informed effort, with the curriculum designed so that appropriate links can be cultivated at an early stage in courses. Tight (2016) has explored the importance and value of the research teaching nexus and others indicate that there is much to be done in building strategies and knowledge to strengthen it for enhancing cutting edge knowledge, building graduate skills, currency, dynamic teaching activities, and applied case studies (McKinley et al, 2018; Billot et al., 2017; British Academy, 2022;QAA, 2008). Building a learning culture which is explicit about evidence in a post truth world where 'experts' are distrusted, populism reigns and news and information is fake is also crucial (Clark & Hordosy, 2019; Barzilai & Chinn, 2020) and RTL can play a role in this. Although there is a well-established body of theoretical and conceptual knowledge on how teachers experience their own HE teaching, there is minimal literature that focuses on exactly how researchers (who also teach) understand, practically, how they bring research (theirs and others') into their teaching to enhance curricula and benefit students. Thus, in this project, with a specific institutional lens, we specifically focused on this gap by exploring how colleagues used their own original disciplinary research in their teaching and how they used it with their students in their specific module activities.

The scholarship of teaching and learning (SoTL) culture and practice is well established as a scholarly approach to developing teaching practice, enhance curricula and improving student learning through reflection, evaluation and dissemination of findings (Waller & Prosser, 2023). There is considerable research demonstrating that staff engagement in SoTL leads to improvement in students' learning experiences by encouraging students to become reflective, critical, integrative, and active learners in the classroom, which can, in turn, feed back into their own pedagogic research (Graff et al., 2007; Akerlind, 2008; Tinberg et al., 2007).

There are a range of useful holistic lenses for thinking about the integration of teaching and research. Boyer's (1998) model of 'integrated scholarship' is a classic framework that considers RTL from a teacher's point of view. We ultimately used this to classify the ideas generated by this project. However, we also considered other prevalent typologies of RTL activity, including Healey's widely cited (2005) framework which describe four types of teaching via their relationship to research from the student perspective and Smith's (2021) newer model which refers to pedagogical research involving student voices, so student learning experiences are reflected in efforts to improve the quality of teaching. There is a body of work that explores useful pedagogic activity for bringing research into teaching and engaging students such as

analytical journalling (Kingsbury, 2019) enhancing critical thinking and active learning (Golden, 2023) and inquiry-based activities (Aditomo et al., 2011).

As this project approached RTL from a teachers' point of view, however, we used Boyer's (1998) model to structure our findings and examples. Boyers' model considers the integration of teaching and research in these four parts (see Table 2):

- Discovery – encouraging students to undertake research projects within modules and programmes.
- Integration - contextualising research by incorporating it into teaching.
- Application – demonstrating how research serves to contribute to knowledge and skill development
- Teaching – students and teachers working together on research as a process of shared learning.

Despite various critiques and proposals to update the original framework, for example the addition of a domain for co-creation (Garnett & Ecclesfield, 2011), and domains for creative practitioners (Ardzejewska et al., 2025), Boyer's framework remains relevant as a useful foundation for scholars and its recognition of diverse contributions is particularly useful for our project.

This project aims to explore what active researchers who teach at LBU do to strengthen this nexus. It focuses on identifying, categorizing and discussing realistic, practical pedagogic ideas and actions for students and colleagues.

Perceptions of research-teaching linkages

Smeby (1998) and Malcolm (2014) differentiated between four areas of RTL theory and research concerning: (1) Perceptions of staff, students and other stakeholders on the link between research and teaching; (2) Principles that articulate what the link ought to be, and what activities can be classified as linking research and teaching; (3) Productivity through which evidence for a positive connection between research activity and teaching is established; and (4) Practice (and praxis) concerning the wider effects or impacts of linking research and teaching.

Rayner et al. (2020) explore many of the issues relating to RTL presenting a range of mixed perceptions. For example, they explore Ramsden and Moses' (1992) work about its intuitive linkage that "few beliefs in the academic world command more passionate allegiance than the opinion that teaching and research are harmonious and mutually beneficial" (p. 273). This beneficial connection is supported by Stanton et al. (2009) and Hathaway et al. (2002), who believe more students are encouraged to enter postgraduate education if they are exposed to research as part of their teaching. Other authors reveal mixed views about the benefit of linking research with teaching (Robertson & Bond, 2001). Further studies support a perceived separation of research and teaching in the lived experiences of academics (e.g. Kyvik, 2013; Cabral & Huet, 2015) and, although this paper focuses on staff perceptions of RTL, many students also have mixed views. Some students understand the benefits of being taught by staff who are active researchers and that this makes their teaching more exciting and interesting (Lindsay et al., 2002; Healey et al., 2010; Healey & Jenkins, 2009) while others feel their academic staff can focus too much on their research which takes time away from concentrating on their teaching activities (Hajdarpasic et al., 2015). There is also some evidence that student perceptions are different from those of staff in relation to the fundamentals of the nature of research itself (Buckley, 2011; Clark & Hordosy, 2019), with staff viewing research as the pursuit and

generation of new knowledge, but some undergraduate students focusing on the process of enquiry rather than the product (Healey et al., 2010).The student focus will be our follow up research to this piece.

Our methodology

Phenomenology and Interpretivism

Phenomenology and interpretivism are qualitative research approaches and differ slightly in their focus and goals. Both were useful to us. We adopted a phenomenological approach to investigate the differences, or the variations, in the way that individuals within a specified population experience a particular phenomenon (Marton, 1981; Tight, 2016) in this case how participants linked research and scholarship to their teaching. This can be a particularly useful way of examining different perspectives on an issue. The interpretivist approach (Pervin & Mokhtar, 2022), complements this and examines individual perspectives and makes sense of the issue. Both are well suited to educational inquiry (Stoltz, 2020) as they can help educators identify and foster learning approaches that facilitate a better understanding of the subject material that students and academic teachers are engaging with.

We filmed individual semi-structured interviews of five intentionally selected academic staff. These were specifically selected because they are active researchers in their subject area, experienced teaching staff, took part in the initial scoping exercise outlined above and expressed knowledge about the value of SoTL and how evidence might enhance teaching practice, disciplinary work and curricula. (see Table 1). They all represented a different subject area, had more than ten years HE teaching experience, and had held a range of roles that encompassed both teaching and research practice.

Questions and the analysis

We generated a template of indicative questions based on the literature about the nexus focusing on the following broad areas of inquiry: The semi structured approach (Brown & Danaher, 2017) was particularly useful for us to explore emergent themes across the different disciplines and offering us flexibility and authenticity in hearing about colleagues' practice. As part of the pre-interview information, participants were given the questions below in advance along with some broad definitions of research and Felten's (2013) principles which underpin good SoTL practice.

- What are your main areas of research and scholarship?
- How do you bring your own research and scholarship into your teaching?
- How do you incorporate the latest findings from your research into your teaching activities?
- Why is it important to embed research and scholarship into teaching?
- How do you adapt your teaching activities to accommodate different student groups?
- How do you share your own knowledge about undertaking research with your students and do you think this is necessary/worthwhile?

A stepped thematic analysis (Braun & Clark, 2006) of the interview transcripts was then undertaken to generate themes from all the interviews. This analysis consisted of reading, analysing and categorising the

information with the goal of identifying a set of qualitatively distinct, logically related, ways of experiencing the phenomenon being investigated (Daniel et al., 2016). This was a gradual iterative process of reviewing and refining until we reached two core themes (the first (1) relating to the value of embedding research as part of teaching and the second (2) about the unexpected benefits for teaching staff involved in strengthening RTL pedagogies and practice. The first theme had five distinct unchanging subcategories (a-e).

The films were then edited in consultation with the participants into short mini films focused on specific questions. A separate workstream was generated to collate, categorise and disseminate the films through events, workshops and our CLT communications bulletin to all internal colleagues as bite sized, accessible teaching resources.

Ethical considerations

The project was ethically approved by the University. To ensure ethical rigour, the following practices were adhered to. Firstly, the interviews were conducted by the same researcher for consistency. The interviews were voluntary, with written informed consent gained prior to them taking place. Confidentiality may not be maintained because deductive disclosure, also known as internal confidentiality (Tolich, 2004), is present, as the traits of our participants make them identifiable (Kaiser, 2009). To protect participants as much as possible, anonymity of individual contributions is provided in this paper. Although participants' identities remain anonymous for this paper, the categorised filmed resources identified them on our webpages for our own internal university colleagues as representations of good practice and to enhance contact and collaboration between our participants and other university colleagues. Our participants were able to withdraw at any time before, during or after the interviews, though no one wished to do so. The interviews were recorded and Microsoft Teams transcriptions were generated and subsequently edited to ensure that they did not include identifiable information. Data security was maintained through password protected systems and adherence to GDPR rules.

Table 1 Roles and disciplines of the teacher researcher participants

Participants	Discipline	Specific Research area	Length of time in HE as an educator	Length of time at LBU	Role
Participant A	Music	Performance Practice, Analysis, and History	19 years	10 years	Professor and Course Leader
Participant B	Sport, Exercise and Health Sciences	Interpersonal expectations and impression formation; Game-based learning	20 years	16 years	Head of Subject
Participant C	Media and Cultural Studies	Anti-racism in sport	15 years	9 years	Course Director and Reader

Participants	Discipline	Specific Research area	Length of time in HE as an educator	Length of time at LBU	Role
Participant D	History	Modern British History	14 years	9 years	Acting Course Director
Participant E	Built Environment	Communities of Practice in L&T	39 years	8 years	Principal Lecturer

Findings and discussion

The findings emerged from analysis of the perspectives of academic colleagues and focus on exploring the value of using research, the range of benefits for student learning, and the additional unexpected benefits for the teaching staff themselves.

The value of using research and the range of benefits for students in a teaching context

Enhancing student learning through aligned activities and assessment

There was a strong sense from all our participants that discussion and linked activities about research belongs and "sits naturally" in the classroom, and how insights from findings and processes can enhance student learning about the discipline. Participants emphasised the need to make the "facts", "research issues" and "the challenges of the research process itself" visible and explicit in the classroom. By actively articulating the benefits for learning, and making their activities fun, relevant and current, they felt students "then actually realise and know they are using and applying research findings". Both they and their students felt that using evidence and its application was what "higher education is all about" at its core, and this sort of knowledge gave the learning enhanced credibility. This supports Healey's (2005; 2010) work and begins to address some of the challenges Stappenbelt (2013) raises in terms of finding useful activities that might improve student engagement and learning about RTL. They accomplished this in a range of different ways – for example interrogating academic papers which apply theory clearly, by analysing robust scientific reports linked to current issues in the media, or by facilitating the debate about policy documents linked to current social and political issues.

They emphasised the importance of strong course design using constructive alignment (Biggs, 1996) and having learning outcomes focused on research, critical thinking and application for their modules, so expectations of intention are clear for students and assessment can verify these outcomes. This then means that assessment can focus on the process and outcomes of using and doing research. Students can then 'construct' knowledge for themselves through the process of what they do supported by the staff through relevant and aligned activities. Assessment matters, as it shapes students' approaches to learning (Sambell et al., 2013; McArthur, 2023). Participants were also clear that constructive alignment has other benefits - it is also concerned with assessment for learning - assessment processes which are a learning experience in and of themselves, rather than just a measure of learning. They stated that authentic assessment activities, which mirror the kinds of tasks students may be engaged in when they move into the workplace or further study, often allow them to be engaged in deep, useful learning experiences. Any assessment mode, not *just* dissertations, but posters, presentations, podcasts can all be aligned, research informed and authentic.

Building professional knowledge and practice

The participants believed research inquiry is essential for building professional practice and engaging students in current issues relevant to life, societal contribution and the workplace. Participants discussed the value of currency, interesting pertinent theory and research findings, and used the discussion of very recent journal articles in workshop activities to illuminate up to date thinking about a contentious or divisive issue in an industry or organisation. They discussed how progression into graduate jobs could be enhanced by students being prepared for interviews and career paths by having a clear knowledge of the processes and requirements for detailed and meaningful profession-specific theory and inquiry. New graduates can be prepared to have a robust understanding of the wider research informed issues affecting their chosen career path and thus be better equipped to perform well. This aligns with the content of both the British Academy report (2022) and the QAA enhancement report (2008) on how RTL can enhance graduate skill building.

Differentiating and 'stepping' of activities

They discussed the importance of differentiating the activities used for each level of student considering prior knowledge and background and linking thinking across modules and into the wider world. This can also be related to assessment presentations, for example offering a scaffolded stepped approach to dealing with audiences and thus dealing with potential workplace expectations. They were aware that student engagement with conventional employability opportunities outside the curriculum can be underwhelming often due to financial pressures, caring commitments and time management issues (Bradley et al., 2021) thus the more current relevant authentic activities that could be included in the classroom the better. For example, student peer group formative developmental work, moving onto pre-recorded presentations, individual and group in-person project presentations and final year research inquiry project presentations to alumni and future employers.

Building critical thinking

They all mentioned having a responsibility, as academic teachers, to encourage critical thinking and enhance their students' curiosity particularly in this age where evidence and information can be turned into misinformation. They discussed facilitating student debate where free speech based on evidence, could be practised. They discussed the challenges of generating a safe learning environment where issues and opinions could be raised and critiqued supportively. They gave examples of different activities which illuminated the difference between real and fake news and processes students could use to correlate and cross reference the authenticity of information. Authentic TikTok and Facebook fake content were used to engage the students to show how credible evidence-based research could be manipulated into fake content to misrepresent issues and accelerate misinformation. These classroom activities engaged the students to demonstrate these issues effectively. All participants gave examples of how they encouraged students to more deeply understand the benefits and challenges of using AI for information gathering compared to more traditional source material. The deep value our participants placed on activities that engage students in critical thinking aligns with recent work (e.g. Clark & Hordosy 2019, Barzilai & Chinn, 2020) which addresses the urgent need to facilitate learning in the most robust and engaging ways possible, to enhance students' deep thinking in our challenging post-truth world.

The strength of authenticity of the content of the material

Our participants talked about the value of authentic examples and how they "brought the classroom and the subject to life". They describe using real historical artefacts, digital representations, and classic case

studies of social history. For practice-based research in the creative arts, performances of bands and solo artists were analysed on video to enhance student understanding and exploration of musical technique and performance aesthetics. Music students also collaborated in joint inquiry with Broadcast Media students to live stream performances and research sound recording with old microphones and older filming technologies in a variety of Leeds music venues. Original hard-hitting and affecting reports on public enquiries (Grenfell, the Hillsborough football tragedy, and various national and global race riots and demonstrations) were used to illuminate issues, catalyse discussion points on wider social and ethical issues and encourage students to emotionally connect with the content. The tutors taught students to dissect parts of the reports and designed problem-based activities and assessment tasks around the material. Using these techniques to teach current affairs is evident in some of the disciplinary pedagogic literature (Kingsbury, 2019; Griffiths, 2004)

One participant used "reflective letter writing to their younger selves" very effectively with students to explore their self-reflection on their own journeys of inquiry, building analytical skills and research understanding.

Two participants discussed their own stories of individual professional research challenges and how they used their own pitfalls and the journey of discovery (including unexpected outcomes) to bring research and learning to life. The participants used anecdotes about their own research projects "failing" and surprising outcomes and hurdles to allow students to understand the relevant processes more and engage with different perspectives.

Unexpected benefits for academic teaching staff

Colleagues were aware that using research as part of group work, authentic assessment, active learning, experiential learning and inquiry/enquiry-based learning, became a useful and essential part of any sort of research informed teaching so essential to higher education teaching, and that it should not just be confined to research methods or dissertation modules. Some stated that it took time for them to understand the RTL themselves as sector definitions and terminology relating to RTL links were often confusing and overly theoretical.

There were also some other unexpected benefits for all the academic teaching staff who participated in the interviews. They appreciated the way the students became active learners who brought an "untainted mind", "a fresh eye" and asked new questions about the subject, offering ideas to the academic teacher that they had not previously considered. They explored ideas relating to collaborative learning where they did not have to impart knowledge but where the students participated in knowledge co-creation. Some liked the students' interaction with the research so much they wrote and reflected on their sessions as part of their scholarly activity, their pedagogic research into teaching and learning and their Fellowship applications and annual reviews.

Other staff participants felt personal satisfaction when those students who had shown a deep level of learning went on to undertake postgraduate research degrees in their discipline or engaged in writing up, or co-producing, outputs from their curricular activities and projects.

Discussion of our findings

Whilst our project focused specifically on pedagogic activities to strengthen RTL, it is worth mentioning that broader issues about the links between research and teaching were raised as part of the emergent discussion. Our own findings align with the broader literature. Some participants felt that any trajectory that moved towards greater separation of research from teaching meant that fewer students would be able to benefit from exposure to research activity and this supports the content of the British Academy (2022) report. This could impact students from disadvantaged backgrounds, with potential consequences for the numbers and diversity of the postgraduate cohort and the subsequent composition of the academic workforce. This reflected some of the discussion in the Dandridge (2023) report from HEPI.

Our qualitative analysis revealed findings that sat within the structure of Boyer's (1998) classic original framework (See Table 2). The framework is dynamic with some ideas sitting across two domains, showing both the active nature and scope of both the framework and the depth and breadth of the examples.

Table 2 Our own RTL examples mapped to Boyer's (1998) framework

DISCOVERY **Encouraging students through activities to undertake research projects to discover new information embedded within modules.** Examples cited by our participants: - *Scholarly activities such as mini group projects and sharing new ideas, approaches and findings.* - *Embedded module activities.* - *Encouraging students to explore and understand digital sources and real artefacts.*	**INTEGRATION** **Contextualising research by incorporating it into teaching.** Examples cited by our participants: - *Using their own disciplinary research findings to bring the content to life.* - *Using relevant theory and research to explore future workplace/industry/organisational issues a student might encounter in their future career.* - *Building in activities that promote discussion on their own and other's specific research findings.* - *Doing historical artefact research in the environment to which they are relevant (external to the university, in the city, on field trips, in local museums).* - *Interpretive activities shared across disciplines which can be expanded across the institution or to a larger scaled-up context (e.g. between Broadcast Media students and Music students or between Sports and Psychology students.*
APPLICATION **Demonstrating how research serves to contribute to knowledge and achieve impact.** Examples cited by our participants:	**TEACHING** **Students and teachers working together on research as a process of shared learning.** Examples cited by our participants:

- *Using in depth, public inquiry reports to show students how findings can actively feed progress and action.* - *Using disciplinary expertise of staff and students to improve the locality, academy and wider society.* - *Staff colleagues using fake news reports shared through from the internet and publications to learn about society, improve evaluation skills, understand truth and critique different types of evidence.* - *Staff and students using participatory research methods to seek understanding and give voice to a group, for example, who are concerned with a specific pressing issue.*	- *Students and their teachers exploring different ways of teaching, and developing resources and artefacts together, for future students.* - *Students and teachers examining module and student satisfaction surveys to explore pedagogic themes and make enhancements based on discussion of the findings (action research).* - *Students examining their own arts and music performances through video making, evaluating and creating shared resources.* - *Joint student-led publications and student resources from inquiry-led assessment outputs.*

Our sample of participating colleagues felt that their teaching sessions were made more interesting, and the content felt more "substantial", by using research and evidence to support its presentation. They also noted how, in their academic course teams, early career researchers were using their increasing excellence and confidence in their teaching practice as a springboard for discussing and undertaking new pedagogic and disciplinary research, often starting with small internal projects and then moving into wider external collaborative activity and bringing their findings back into shaping their curricula.

In addition, they felt that student competencies could be developed in parallel through activities that helped the students engage directly with research practices. This facilitated the development of the student as a researcher and a two-way interconnectedness where teaching enhances research, and research enhances teaching (Brennan et al., 2019). These perceived benefits provide a new insight into the research and teaching nexus from which the opportunity exists to foster these approaches and develop institutional policy to grow and sustain the research-teaching interactions.

There was evidence of our participants encouraging the students to develop a more robust critical approach to their studies and think more in 'research mode' (Robertson & Bond, 2001; Buckley, 2011). The predominance of our own examples reflected similar features from these other studies wherein staff identified the following activities as evidence of the link: i.e. teachers offering the latest knowledge from their and others' research to their students; teaching about the processes of research using anecdotes; challenges, surprising findings, and encouraging students to reflect on their sense of both progress and perceived failures.

Many of our examples are mapped to Boyer's (1998) dimensions (See Table 2) and are informed by the work of Vygotsky (1986), Cook-Sather (2013) and Neary and Winn (2009). For Vygotsky (1986), learning must be attached to practical tasks to lead to learning and development in the student. For Cook-Sather (2013), 'Students as Partners' is a pedagogical approach where students and academic staff work reciprocally, with respect and with shared responsibility for learning with the result that there is improvement through collaboration to improve teaching and learning experiences. Neary and Winn's (2009) work about students as producers builds on this, exploring how students should not just consume

'ready-prepared' knowledge that is packaged up and presented to them by teachers. They focus on students being actively engaged in practical tasks through which true learning can occur and where much of it can be done in collaboration with the academic teaching staff. In addition, our participants felt committed to using pedagogies that included students undertaking fun and engaging research related, investigatory, activities linked to the subjects, feeling this allowed students to improve their competencies in research, increased their motivation for doing research, improved their own learning process and clarified their professional aspirations. This angle is also supported in some studies about the links between research and teaching and strengthening this nexus (Seymour et al., 2004; Vereijken et al., 2018). Our findings also reflected other useful research about creative arts and the value of practice-based activities (Candy & Edmonds, 2018). We particularly noted that participants had many practical examples of how using research in the curriculum can touch on employability and future career issues and Healey et al. (2010) have shown the positive effects research can have on students' graduate outcomes, career success, and confidence, especially those from disadvantaged backgrounds. Although this was ultimately mapped to the Integration domain of Table 2, its broad, applied nature meant it could have aligned with other parts of the framework too.

This aligns with our participants' recognition of the value of linking research to curricular activity, aligning to Fung (2017), particularly in relation to the importance of designing inquiry and research explicitly into each course, overtly setting up the opportunity for students to make connections across subjects and out into the world, ensuring students connect academic learning with skills for the workplace through evidence-informed applied assessments. Whilst our institutional findings broadly support the contextual sector literature on RTL, there is new thinking emerging, in the light of the huge expansion in the use of GAIT in higher education. This explores the importance of teaching explicit critical thinking, the need to drive and model deep thinking, (Gómez et al, 2025; Golden, 2023), higher order thinking skills such as metacognition (THES, 2025) and evaluative thinking. This will help students to interpret, understand, analyse and synthesise information and cope with the tide of misinformation and fake news. Using different types of research and linked teaching activities can support students to see information from every angle and many of the strategies we outline contribute to this. These are applicable across disciplines and for colleagues in other universities.

Gunn (2023) has shown the students do not always understand RTL and what it means to them, and there was a recognition that exploring our own students' views in the future about RTL would be useful as the next stage for our work. This was balanced with an acknowledgement that there were also many excellent examples of students as active learners, co-producers and problem solvers who had a clear understanding of module outcomes and how research was informing their teaching and assessment.

Conclusion, practical recommendations and some future food for thought

We offer ideas and recommendations for pedagogies to strengthen the link between research and teaching whilst recognising that the examples we use here are regarded as useful by our relatively small sample and are contextualised to this university. It is important that colleagues understand how they can integrate the relationships between their research and teaching to have a positive impact on their students' learning and their own scholarly credibility.

Recommendation 1: RTL is cherished and seen as integral to HE. This is important to both historically teaching focused universities as well as historically research focused ones. Despite challenges within the

sector, our participants were enthusiastic about RTL and felt it was gaining in strength, interest and momentum. Boyer's (1998) model remains a useful way to understand and map this enthusiasm in practice.

Recommendation 2: Exploring student views on RTL further. This project focused on the views of the academic teachers, but future work could include an exploration of the students' views which our staff participants began to describe, and which was elucidated through some of our initial scoping work about students' understanding of RTL. We would specifically wish to investigate which curricular activities generated the best understanding of RTL for the students. This could extend the work of both Howell (2021), Clark and Hardosy (2019) and Buckley (2011), who showed students and academics differed radically in their perceptions of RTL and often struggled to engage with it. While neither party is 'right', greater understanding of student and staff views on this could lead to a more engaged student cohort and a more tailored suite of valuable activities.

Recommendation 3: Phenomenology is a useful methodological approach for exploring how people conceptualise education in different ways. It helped us to understand more deeply how the academic teacher participants think about and enacted RTL in their own contexts. This led us to identify practical steps and interventions that are now supporting our progress. From these we identify the following specific practical recommendations for others seeking to enhance RTL at institutional or departmental level.

Practical Recommendations

a) We need to make RTL more explicit to academic staff colleagues and students

This is an argument to examine the nature of communication. We think there is a real need for staff to transparently explain RTL in their staff and student-facing curricular documents and explore in person how students will benefit from undertaking interesting and applied activities as part of their learning experience to understand research as reflected by the British Academy (2022) report and Gros et al. (2020).

Practical ways of doing this were articulated by our participants. The academic teaching staff need to see it is manageable to implement ways of linking research to teaching activity practically and consistently in a range of simple ways. For example, RTL can be articulated at the beginning and throughout every session, explained during level and module induction sessions, explicitly foregrounded during classroom activities and through assessment tasks. The context and currency and applicability of specific research papers and their findings can be concisely and clearly summarised by teaching staff, and questions can be routinely sought from students about specific RTL issues that may be raised directly. University prospectus and course outline content and handbooks should emphasise the value of having our teaching informed by research and how this makes learning at university current, relevant, credible, evidence based, engaging, and prepares students for critically thinking in the workplace. In addition, our Advance HE Fellowship descriptors reinforce these recommendations for all our internal staff undertaking this continuing professional development programme.

b) We need to use plain English

We will aim to simplify our language and definitions about RTL, moving away from theory and using simple terminology and examples for staff colleagues. Our Initial scoping work and the participant interviews revealed that references to "research informed teaching" are frequently invoked but do not always translate into reality for students and are differently understood by both staff and students. This supports

Dandridge (2023), who feels this can be misleading for students, can imply a hierarchy of research over teaching, and obscure a proper focus on teaching quality.

We are committed to making our key university and policy education focused documents clear with simple language that makes RTL more explicit. For example, our internal pedagogic project funding stream documentation has just been revised to simplify the language, strengthen the student-centred active learning elements of curricular embedding, and make sure potential staff applicants for funding explicitly understand and are aware of how research (their own and others') underpins their proposal for changes and innovations in teaching. We have also made it explicit to include RTL in course validation documents and curricular guidance. If this approach can be sustained, it will bring content to life and strengthen RTL for the future.

c) We need to share best practice more effectively

We identified a need to share both best and unusual RTL practice to embed practice more consistently between our different Schools. This is something CRSTHE is equipped to do through our pan-university educational development programme of workshops and curricular design work. While some academics may understand or perceive the broad nature and many of the benefits associated with RTL, the reality is that explicit RTL practice may just be localised around some research methods modules (which still, of course, require staff to use and link research to their teaching practice) and participants felt this might not always be 'spread' more consistently throughout more applied disciplinary modules in all Schools .

Since being initiated, the project has generated a bank of accessible film resources. Staff colleagues are appreciating real examples to bring the subjects to life and enhance application. We are committed to promoting and using tangible resources and real-world examples of best practice in RTL in our CRSTHE best practice workshops and for using more foregrounded, actively promoted and accessible online internal resources. Colleagues are supported to explore and share their RTL practice through workshops, peer-peer support, and critical friend input from colleagues who are already well versed in the challenges of, and pedagogic approaches for, implementing RTL.

CRSTHE will work to implement these practical recommendations and review progress after six months. We will also explore opportunities to fund projects that enhance student understanding of RTL, share best practices within our CRSTHE research and teaching communities of practice, and develop accessible, practical guidance to help colleagues make RTL more explicit in the curriculum

Students do not always know what they want before they come to university, and it would be unrealistic to expect them to have opinions on pedagogies for RTL. They must take the pedagogies we choose on trust.

Our view is that we have a responsibility to articulate and demonstrate the benefits of research informed teaching, and its concomitant RTL, and implement it to support students robustly via a range of ways (see Table 2). As different subject groups build their own research body of knowledge and strengthen and expand their repertoire for sustained RTL, academics can learn from each other and begin through networks to adopt and adapt each other's ideas for practical teaching. This can usefully be aligned to Wenger-Trayner et al's (2014) work about landscapes of practice. This is also explored by Gilmore (2016) who outlines how different communities and individuals move slowly through different experiences, influences and practice working to gradually build a body of knowledge (in this case, ways to strengthen RTL) which is necessarily varied and evolving.

As a concluding point, this project made us think about Boyer's original framework and if it remained useful and valid. There is much food for thought as so much has changed in the last 25 years in the HE sector. In the past there were smaller cohorts, more grants and bursaries, less pressure from part-time jobs, no threat of AI, distrust of 'experts' fewer creative assessment modes and less explicit focus on employability, yet Boyer's original framework still remains a robust and useful way of classifying the types of pedagogy which may be useful and RTL remains very meaningful as a way to engage students.

Our multidisciplinary participants felt there was still scope for the RTL to be strengthened across our own institution and made more consistent and visible. Seeing the examples mapped to Boyer's framework, helped show them they were varied, usable, applicable and adaptable to other disciplines. We endeavour to prioritise and share pedagogic practice examples across the disciplines to inspire a wider culture change for RTL beyond just the experts and enthusiasts in our own university but more widely across the sector. Universities, particularly those who are teaching-led with tighter intertwined links between teaching and research, may recognise how some of our recommendations align with their practice.

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