

From the International Desk

Some Pathologies of Undergraduate Research—and How to Cure Them

Abstract

Over the last quarter of a century or so, the university functions of teaching and research have split, with adverse consequences for academic life and the student experience. Recent efforts across the world to reunify teaching and research have to be understood and applauded in this context, including the incorporation of student research into the undergraduate curriculum. However, there may be some unwitting consequences. Indeed, a number of pathologies, at both institutional and pedagogical levels, may be present. This article inquires into the interests at work that have both promoted a separation of teaching and research as well as their reunification, especially in the form of undergraduate research. It exposes pathologies of this reunification program and suggests remedies but cautions that the most pernicious pathologies may turn out to be resistant to modification.

Keywords: *education reform, higher education, pedagogy, undergraduate research*

This article will interrogate a movement that is gaining momentum around the world—at least in certain quarters. The movement in question here is precisely the movement that this journal is intended to promote, that of undergraduate research. Undergraduate research potentially possesses many virtues (see Barnett 2005), but, like any movement, the movement warrants and profits from some examination from time to time.

Most movements, once they are underway, simply roll along. There is a dual feature of such momentum. First, it is not often accompanied by critical scrutiny, in which flaws in the enterprise might be identified and brought into the open. Second, the original justification, if indeed it was ever on offer, is seldom revisited to see if (a) the justification still holds good and (b) whether the justification needs some additional support that might point in a slightly different direction. As intimated, I do not intend in this article to conduct anything of an empirical survey but, instead, to pose some questions and identify some possibilities. I shall make an argument, perhaps somewhat polemical but with—I hope—empirical warrant and, in particular, I shall suggest that there are a number of pathologies that might be said to be associated with—or might be sighted in—the general field of undergraduate research. I shall not want to leave matters there, however, and will go on to hint at a solution.

This article springs from my 45-year career in higher educa-

tion as an administrator, teacher, scholar, and researcher who has been working in the field of higher education studies. While I have been involved in empirical research into the relationship between teaching and research (Coate, Barnett, and Williams 2001), my scholarly work has been largely that of developing the philosophy of higher education as a field of study (see, for example, Barnett 1990, 2016). Accordingly, my approach here will be argumentative, expounding and briefly developing certain theses. (For what it is worth, if I was reluctantly to pin a label onto the general approach I adopt here, it is that of a critical realist perspective.) I shall also make some broad observations, some of which stem from my own experience as a university teacher.

Beginning Questions

Let us start with the most fundamental question: why undergraduate research? Or, to express it more formally, why might undergraduate research be felt to be desirable in the contemporary era? This prompts the further question: is the need for undergraduate research—if that is what it is—a new need, or is it part of what is meant by higher education and has therefore been a long-standing need? There are other related questions. For example: what is driving this movement in favor of undergraduate research? Whose, or which, interests might be being served by it? Given the press of space, I shall focus mainly on the first of these questions—“Why might undergraduate research be felt to be desirable in the contemporary era?”—but those other questions shall be kept in mind as I proceed.

The origins of modern higher education lay in two streams of thought about the idea of the university. The first stream originated in the thinking of the German philosopher Immanuel Kant at the end of the eighteenth century (Kant 1992), was taken up by other German philosophers, and was discussed notably by the German philologist and educational reformer Wilhelm von Humboldt. Essentially, the thinking here was that the idea of university was based on rational inquiry and that all members of the university were involved in this venture. And so, in this view, research and teaching were indivisible. Both the teacher and the student should enjoy academic freedom. The second stream, the English liberal idea of the university, was somewhat different. Here, the central concern lay in developing the mind of the student into a “philosophical” outlook, as its greatest exponent, John Henry Newman, described it (Newman 1976). Accordingly, Newman had no

time for research. Knowledge was “its own end,” and the systematic search for new understanding was immaterial here. Less noticed is that Newman was fighting his corner. There were other voices in mid-nineteenth-century England who wanted to see major university reform, not least to take research, science, and technology more seriously.

Since those early beginnings, there have been many developments of and variants on this historical heritage, not least in the more pragmatic American idea, leading to its concern that universities should have a service function and thus moving to the “multiversity” in Clark Kerr’s famous depiction (Kerr 1995). More recently, we have seen a turn toward “the entrepreneurial university” (Clark 1998), in which universities have been encouraged to see themselves as income generators; and a crucial income stream for many universities has become that of research and related activities (such as patents and spin-off companies). Some have rounded on these most recent developments, depicting them as forms of “academic capitalism” (Slaughter and Rhoades 2004) and seeing “the university in ruins” (Readings 1997).

A sense of this historical lineage is important here because it brings out two things. First, that ideas of the university have continued to develop, either explicitly or implicitly, and that ideas of the university have often been in conflict with each other. In particular, here, it is notable that Newman’s ideas, which remain today a source of much interest, were avowedly antipathetic to research having a part to play *even in the university*, let alone as being part of the student experience. Second, they indicate that changes to the university have to be understood as occurring within and even as a result of wider social forces. Consequently, the present interest in undergraduate research needs also to be put into the widest context. Why now? And whose or what interests is it serving?

Six Forces of Separation

Teaching and research have been somewhat separated over recent decades. Although undergraduate research has been viewed as a realm that can unite teaching and research, six forces have been at work in driving their separation.

First, recent decades have seen the “massification” of higher education. In turn, many new entrants have lacked the cultural and social capital associated with a higher education designed for a small minority (so-called elite higher education). As a result, universities have had to pay attention to their teaching function. It could no longer simply be an adjunct of the research function. Second, as part of the emergence of the “knowledge society” over the last two decades or so (Stehr 1994) and a significance being paid to “cognitive capital” (Boutang 2011), the generation of new knowledge has acquired only relatively recently a high status, and universities are now associated with a research function in ways

that were quite unknown only 50 years ago. (Even in the 1950s, the University of Oxford was primarily an institution focused on the teaching of English undergraduates, especially in the humanities. Its international, science-oriented, research, and postgraduate dimensions are modern acquisitions.) Third, as intimated, universities have found that research and research-related endeavors are the best ways of generating discretionary income, both directly and indirectly. Fourth, managerial disciplines have seen a separation of research and teaching as a means of promoting both greater efficiency and greater effectiveness. In consequence, in some countries—especially those witnessing extreme forms of the marketization of higher education such as the United States and England—academics have been separated (and even stratified) into “teaching only,” “research only,” and (diminishingly) “teaching and research” staff. Fifth, the emergence of world rankings, which are based primarily on research performance, has served to give research as such greater prominence both within universities and in their external “branding,” even among those that have understood themselves as mainly “teaching universities.”

To these five *forces of separation* needs to be added a sixth, with a more fundamental character and status. Especially under the influence of its Germanic inheritance—really a continental European inheritance—across the world, the academic community has come to acquire a *constitutive interest* in research. That is to say, the dominant *Weltanschauung* is that universities are places supremely of research. There is a fictional quality here, for even in the large, world-leading, multifaculty universities, teaching provides more income than research. But research has come to serve as a legitimizing ideology. To pick up Bourdieu’s (2000) term, there is here, in research, a “scholastic” self-understanding, through which the academic class has been able to justify a certain degree of apartness from the world. (I am not making a value judgment here, for there is much of value in this academic stance, in terms of academic freedom and the capacities critically to comment on the world. I simply observe an element in the formation of the academic class worldwide, to be seen even in developing countries.)

Together, these six forces have worked together to drive higher education systems across the world, both to give a heightened place to research *and* to separate their teaching and research functions. And it is in this context that we are witnessing a concern to bring teaching and research into a closer and more productive relationship with each other. However, we may ask as to why it is that the interest in research-based undergraduate education is taking such a hold around the world.

Three Unifying Interests

The interest in reunifying research and teaching is driven by

three concerns, again complementary to each other. First, there is an interest in raising the productivity level of undergraduate education, by heightening the cognitive skills of graduates and, thereby, program outcomes. This interest has, as part of its background, a global shift in the direction of “performativity,” in which the crucial test of academic knowledge becomes that of “what use is it?” (Lyotard 1984, 51). Hence, the particular interest in undergraduate students actually conducting research rather than simply learning about it or engaging with it. In this way, graduates may take their research skills into the labor market and so be enabled to conduct quasi-research activities in their occupational roles and so, in turn, raise the productivity levels of their employing organizations.

Second, in this dispensation, students are expected actually to contribute to the research function of universities and so heighten universities’ research productivity. Now, teaching may even support and advance research, as students are brought into play to work on academics’ own research projects. This has long been the case in the physical sciences; now it is to be seen across all disciplines and fields. This heightening of a university’s research profile becomes crucial in an era in which global—and still largely research-based rankings—have become highly influential not only on universities but also on the apportionment of public funds and the functioning of academic markets.

Third, there emerges a sense among university administrators that the separation of teaching and research, once vaunted as a means of raising efficiency, may actually be *inefficient*. Labelling activities, (expensive) plant, buildings, and personnel as concerned separately with either “teaching” or “research” may be a thoroughly inefficient way of handling the many and complex university resources. And so, across the world, we are seeing the makings of a reaction precisely against the strong separation of the tight boundaries that have grown up between teaching and research.

We should note a nuance of this counter-movement, in bringing research and teaching together again. First, this counter-movement finds ready endorsers across both research-intensive universities and teaching-intensive universities. The research-intensive universities are driven in this direction mainly because here lies a way in which they can both continue to focus on research as their main means of global identity and yet also pay (some or more) attention to their students, not least in an era of a more marketized system in which “student satisfaction” becomes a measure of institutional performance. The teaching-intensive institutions turn in this direction mainly because it offers a way in which their hard-pressed academics, many of whom have never conducted research (and may not possess a doctorate), can begin to conduct research while also maintaining their considerable responsibilities to their teaching (which may

occupy 50 percent or more of their professional time) and to their students, with *their* raised expectations. And so, again, there is a concatenation of forces that are at work pressing the whole higher education system—nationally and even globally—in the direction of reuniting teaching and research, and doing it in a strong form in which undergraduates are brought to undertake research themselves.

Institutional Pathologies

Given this welter of forces that are at work in bringing student-active research into the undergraduate curriculum, it would be surprising if there were not unwitting disbenefits. I suggest that there may be indeed certain disbenefits in this movement and that we can hypothesize that such disbenefits arise in stronger and weaker forms. In broad terms, the disbenefits arise from an over-interest in bringing teaching and research into a tight relationship. We can imagine different kinds of situation that have malign aspects or *pathologies*. Two dimensions may work together to form these pathologies. One dimension is that of the *level* of the pathology: it may be institutional or pedagogical. Another dimension is that of the *severity* of the pathology.

The *institutional pathology* may be glimpsed in a number of ways. A concern on the part of a university to adopt a strategy of research-based teaching may be driven forward with much determination. It may be put under the wing of a senior institutional leader—a vice-president or vice-rector—who may invest much personal effort in it. Resources may be harnessed. Curriculum managers, having an explicit focus on undergraduate research, may be appointed. Teams may even be set up. Web pages may be created. Cross-university meetings may be held. In short, a bureaucracy may be established to “support” the endeavor. But the push may go further. At moments of course approval or reapproval, questions may be asked as to the ways in which the undergraduate experience is research-based. Peer assessment of teaching may be conducted with a view to identifying and commenting on the research elements in a teacher’s approach and in his/her undergraduates’ work pattern. More than that, databases may be set up to capture any ways in which undergraduate research is part of the university’s research activity. Undergraduates may even find that they are entitled to have their names listed as coauthors of papers published by their “teachers.” And individual academics may find that the alacrity with which they have acquiesced in the undergraduate research strategy to be an element in their annual performance appraisal.

In identifying all of these possibilities, I point not to any one feature that is malignant in itself but rather to the way in which a welter of elements may function *together*, such that an idea—with potentially valid educational justification on its side—can turn into an institutional ideology. I use the term *ideology* in its earlier (neo-Marxian) sense as (a)

a discourse having practical effects and bearing the weight of undisclosed interests, and (b) its being somewhat opaque even to those who are immersed in it. Clearly, as stated, this institutional *Weltanschauung* can express itself in weaker or stronger varieties, depending on how many elements—of the kind just identified—come into play and the severity with which they are prosecuted.

Pedagogical Pathologies

I turn now to the other parallel pathology: that of undergraduate research being taken up at the *pedagogical* level, which would take on a particularly onerous weight when it is backed at the institutional level in the way just described. Here, we may again distinguish a weaker and a stronger form of the pathology.

The weaker form is where a teacher frames her or his students' experience by looking mainly to them to conduct research. This is the driving force; that students should not abstractly as it were understand the nature of the research or even be expected to grapple—to a major extent—with difficult papers in the research literature but that students should be conducting research themselves. They should become novice researchers. The problem here is manifest. To construct the students' experience predominantly with this aim in mind would be to diminish or even to neglect a host of other worthwhile educational aims that can be in view in the twenty-first century. The student as a "global citizen," development of the student's wider human qualities, development of a personally "authentic" approach, acquisition of a critical stance, engagement with controversial issues, exposure to situations in the "real world," interdisciplinarity, problem-based learning, embodied learning, conduct of quasi-consultancy projects, work-based education, development of personal communication skills in all manner of media and incorporation of students' lifeworld learning: these are just some of the curricular devices that have been heralded—alongside the undergraduate research movement—over the past 20 years or so.

It follows that *privileging* undergraduate research is implicitly to downvalue other worthwhile curricular ends. Such neglect of other worthwhile curricular ends might include, as indicated, the cognitive challenge of struggling with difficult material in the primary academic literatures across a range of contesting frameworks, perspectives, theories, and authors and thereby neglecting the educational potential of students having to begin to work out their own personal intellectual position amidst such rival contending frameworks.

It will be said that no such situation is neither necessary nor intended; that undergraduate research can happily co-exist both with other ways of integrating research with teaching and with all manner of other kinds of educational ambitions.

But that response, although valid in a way, actually helps to underwrite the point being made: that a curriculum in which undergraduate research takes the high ground above all other educational ends is a pathology. It represents an undue tilting, if not a distortion, of higher education itself, which, in the twenty-first century, is being called upon to serve a wide panoply of ends, some of which conflict among themselves. As intimated earlier, that undergraduate research may come to take on such a dominant presence—and that, we may surmise, many would wish to see it assume such a position—is readily explicable in virtue of the forces, national and global, to which higher education is now subject. And, if pressed unduly, it could simply buttress a global academic disposition in which research takes the high ground, above all the many other legitimate educational options before universities in the contemporary era. Unwittingly, the undergraduate research movement can come to play a part in the university's emerging function in the formation of national and global cognitive capital.

A Pedagogy of Discipleship

There is, however, the possibility of an even stronger pedagogical pathology emerging here, especially in relation to undergraduate research as compared with other juxtapositions of teaching and research, namely that of pedagogical *discipleship*. Characteristically, undergraduate research is orchestrated around a teacher's own research interests and, indeed, her own contemporary research projects. Students may be placed in the position of taking on the role of (unpaid) research assistants. The payment matter and the use of students as unacknowledged academic labor are important, but space considerations preclude dwelling on them here. What is more significant is the space that is opened for discipleship. Tacitly, unless great care is taken, the implicit pedagogical message is "be like me." Adopt my research paradigms, my frameworks, my methodologies, my goals, my projects, and my whole sense as to what is to count as research (even with their taken-for-granted value assumptions about the role of research and its relationship to work, industry, culture, or the political sphere). *This* pedagogy is to work within a set of unexamined boundaries, both epistemological and ethical.

It is important to note that this situation is not new. For decades, and perhaps for hundreds of years (and even thousands of years, since the earliest universities originated in Persia, India, China, and Greece), a feature of higher education has been its capacity to establish a tightly bounded triangular relationship among teacher, student, and discipline. The pedagogical space has taken on something of the character of the patient-analyst relationship, in which the patient can come to confer great powers upon the analyst. A corresponding relationship is that of the priest and the confessional box: the supplicant comes to rely on the words that are spoken by the celebrant, for they reveal nothing other than the mysteries

of God. It is not unknown for teachers to have extraordinary transformational effects of a particular kind in the university. Students emerge not merely as historians, physicists, statisticians, or literary critics but as students of professor w, x, y, or z (and may proudly boast of such).

This close relationship can continue through life. Wittgensteinians were devoted to the cause—a particular set of views of analytic philosophy espoused by Wittgenstein—all through their lives. (Many of Wittgenstein's works are the result of his students writing up their own notes from Wittgenstein's lectures.) In my family, a close relative continues to see patterns in human life through the spectacles of a particular set of statistical techniques developed by his PhD supervisor over half a century ago. Leavisites—those who were taught at Cambridge University by the literary critic F. R. Leavis—continue to be devoted to that cause decades after Leavis died. In the study of history, Plumb turned against Namier—whose protégé he had been—and the “apostate” came to have spell-binding powers on his own students, not least in excoriating against Namier and his approach. And with devotions such as these, academic antagonisms in which the former teachers were themselves embroiled continued to be fought out by their students, if only in their minds.

There are therefore considerable dangers—the word can justifiably be used—especially in undergraduate research, for it can heighten any such tendencies toward discipleship. Undergraduate research can become an institutionally sanctioned semi-private space in which teachers can transmit their entire research personas onto their students. As a result, the epistemological space in which students move and have their academic formation and being *may* be severely diminished.

Of course, by and large, teachers in higher education still retain the pedagogical space such that students can emerge both critical of research perspectives that they encounter and able to take up informed stances of their own. (The international evidence, however, is that “critical thinking” is increasingly less in evidence.) When I taught and when I supervised students, I was acutely aware of this possibility, and I would be very cautious in—and even shrink from—sharing my particular ideas and approaches with my students. I would say to them explicitly: “I do not want to see you quoting me in your essays. I know what I have written. Tell me what you think.” And I would also say: “Do not be like me: I do not want disciples.” This is a particularly arduous process for students, as they are asked to stand on their own two feet and become genuinely authentic (*cf* Kreber 2013), rather than simply falling in with the framework and thinking of the master (to use Steiner's word [Steiner 2003]). I am not suggesting that this pathology—or any of the others identified here—is bound to emerge it should be acknowledged that one or more plausibly could emerge and *explicitly so*.

Conclusions: A Simple Set of Remedies

For 200 years, research and teaching have continued to circle around each other in universities, taking on all manner of relationships, successively both supportive and antagonistic. The present situation exhibits complex and contradictory patterns, with major moves taking place across the world in favor both of strengthening research *and* of giving a higher profile to teaching. Undergraduate research can surely be understood as offering a bridge between these contradictory movements. Its actual form, however, has to be worked out amid an increasing stratification of higher education institutions (nationally and globally), in which the different parties—academics, students, and administrators—stand in different power relations with each other. Institutions are likely, therefore, to evince contrasting relationships between teaching and research, even across their own departments. In some places and, indeed, in some departments within a single university, undergraduate research may be struggling to gain a place among teaching approaches. In such a situation, it is hardly surprising if its advocates have to press its case with some fervor.

There *are* considerable benefits to be derived from bringing research and teaching into a wholesome relationship with each other. Their separation has been largely deleterious for institutions, the student experience, and academic life (not least in its differentiating academics as researchers or teachers, and so creating a kind of academic apartheid). There is much to applaud, therefore, in efforts to bring the two functions into a more satisfactory alignment. However, if pressed forward unduly, as in most movements, unwitting disbenefits may result. Pathologies may even be glimpsed. At the institutional level, worthwhile educational ends may be diminished or even neglected. At the level of the individual student, her or his experience may be unduly confined, so much so that she or he becomes encircled by the teacher-as-researcher and perforce obliged to enter the total research identity tacitly put forward.

How might this situation be circumvented so that these pathologies might be avoided? In broad terms, the response is straightforward and it is to ensure, at both institutional level and at the level of the curriculum and course units, that the student experience is balanced. “Balance” here is a matter of a wide range of educational ends being pressed forward—and even conflicting ends at that—with institutional resources devoted to them, so that an initiative around undergraduate research is counterbalanced elsewhere; and that evaluation and performance appraisal exercises identify and support a wide array of educational ends, not least through institutional reward policies.

But balance here is also the matter of ensuring that individual teachers are not so consumed with their own research identities and research goals that they become the signifiers of their

students' development. A program of faculty mentorship—within a larger program of academic development—suggests itself, but this is highly problematic, once the undergraduate research genie is out of the bottle. For tacitly, individuals with strong research profiles and identities—perhaps global in nature—will have been granted a license to exert magical powers over their students, and it will not be lightly surrendered, not least in the context of global rankings and the privileging of research thus entailed and legitimized. And, once experienced, the magical properties of higher education are not lightly surrendered, either by students or by their teachers-as-researchers. Once formed, *this* pedagogical relationship, and its pathologies, are not easily relinquished.

Postscript

It may be felt that the concerns raised in this article are overdrawn. It may even be suggested that many instances can be identified of nuanced and balanced conduct of undergraduate research that avoids the possible pathologies identified here. However, the case made here is a matter of argument: I am pointing to plausible scenarios that can arise from the global and ideological context that I have sketched.

The points made here have a degree of empirical warrant to them such that they could, and perhaps should, become the basis for empirical research. Put simply, more research is needed on the relationship between teaching and research. Offered here might be the makings of a major research program, at once conceptually, theoretically, and philosophical-ly nuanced, that could in turn help to provide even firmer foundations for the advancement of undergraduate research.



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doi: 10.18833/curq/37/4/6

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