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Developing a research culture in the undergraduate curriculum

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ABSTRACT A great deal of value is placed on student research within universities, exemplified by the prominent role of the dissertation or extended written work at the end of many programmes, and the more general benefits of embedding research-based learning into a curriculum in order to develop higher-order learning. This article reports on a collaborative problem-based learning (PBL) activity undertaken by staff and students to run an undergraduate conference for first year students on how to develop a research culture. The aim is to better understand how students undertake research and how a research culture might be inculcated much earlier in undergraduate programmes.

KEYWORDS: *autonomous learner, collaboration, independence, problem-based learning, research-based learning*

Introduction

One of the key ways in which a research culture can be developed among students in any university department is through involving students in the research projects of academics. Collaboration between academics and undergraduates on 'live' research projects is a relatively recent phenomenon in the UK. Warwick University and Imperial College (influenced by a rich and established practice in American universities) have both experimented with undergraduate research scholarship schemes. Initiatives such as the 'Reinvention Centre for Undergraduate Research' funded by the Higher Education Funding Council for England (HEFCE), a collaboration between Warwick and Oxford Brookes Universities, 'puts undergraduate research at the centre of undergraduate education. By reinventing the relationship between teaching, learning and research, students will benefit from becoming contributors to the research culture of their departments' (Warwick

105

University Media Centre, 2005). Only a brief scan of American University websites shows just how much undergraduate research is valued, encouraged and produces opportunities for knowledge transfer and external funding. Inspired by the Boyer Commission Report, *Reinventing Undergraduate Education: A Blueprint for America's Research Universities* (1998), The Reinvention Center at Stony Brook promotes models of good practice for developing an undergraduate research culture. Yet, all this reinvention and re-engineering requires an immense amount of goodwill, time and resources. How can a small team of academics encourage an undergraduate research culture with limited funding and time constraints: a research culture that is produced by students for students through collaborative 'live' research with their tutors? This article presents one student-led approach to developing a research culture in the undergraduate curriculum.

Why develop an undergraduate research culture?

Undoubtedly, '[i]nvolving students in inquiry – in research – is a way of improving their learning, motivating them more. After all, what motivates large numbers of academics is engaging in the excitement of research' (Brew, in Jenkins et al., 2003: ix). Teachers and students see the ability to conduct independent research – expressed in the form of the dissertation/thesis or extended piece of written work – as evidence of 'graduateness' in the UK as well as other countries. In part this is because such an extended research project is the classic, or at least most obvious, form of independent or autonomous learning if we judge it by staff–student contact time alone. However, the dissertation/thesis may have become the 'gold standard' of undergraduate assessment in the UK, which if particularly excellent may be rewarded internally, but it is not considered significant beyond the university. Moreover, to new undergraduate students 'academic research' is rather a dirty word. Having spent their school days 'Googling' for knowledge, time seems wasted in libraries and books. Their previous learning has often involved a passive, spoon-fed approach and the transition into becoming an assessment-driven student makes research for the sake of gaining knowledge a luxurious delight for some but pointless to most. Anecdotally, university teachers may often lament the seeming loss of a natural curiosity that they were sure existed in the past. Having said this, they also have expectations of the undergraduate learner based on abstract pedagogic principles of independence or autonomy. However, the model of the lonely ascetic researcher is not one desired by undergraduates. As Finlay and Faulkner (2005) discovered while experimenting with peer reading groups for encouraging deeper critical reading skills: traditional notions of the lonely researcher/reader as a sign of graduateness are

106

of no benefit to students undertaking dissertation research nor to developing a research culture early in the degree programme.

Clearly, tensions between aspirations for and the realities of research-based learning have been identified elsewhere. For example, research on student expectations has shown that first-year undergraduates prefer – and indeed hope for – group-centred learning, interactive lectures and individual tutorials, rather than the traditional lecture in which knowledge is 'transmitted' to them (Stevenson et al., 2000). Similarly, Chan (2001: 293) has noted that 'students have far more positive attitudes to learner autonomy than we would expect [and] welcomed the opportunity to work autonomously, especially in collaborative work'. The relative cost-effectiveness of more interactive modes of teaching notwithstanding (e.g. necessity of small groups or use of e-learning), it is clear that students wish to be engaged in the curriculum as active participants and will take responsibility for their learning if it is managed correctly. Collaboration is the key and this collaboration can take place both offline and online, such that the learner is 'involved in constructing knowledge through a process of discussion and interaction with learning peers and experts' (Harasim, 1989: 51).

Such a notion of collaboration may be at odds with traditional ideas about how to research for a dissertation or thesis. Lewis and Habeshaw (1997) outline why the one-to-one nature of dissertation supervision precludes experimentation with pedagogic techniques (Lewis and Habeshaw, 1997: 11) and the privacy of the dissertation tutorial makes reviewing of teaching practice tricky so it goes unexplored and undeveloped (Pearson and Brew, 2002). If students are to be encouraged to work together on research tasks early on so that collaborative practice is embedded, then collaborating with their tutor on research for the dissertation may involve rethinking the power differentials that Lewis and Habeshaw (1997) draw attention to. It might also shift the ownership of a research culture away from academics.

Therefore, our concern solidified into a realization that students did not engage in effective research practice from the outset because higher order skills of evaluation, synthesis and reflection were not expected of them in these early days. The project asked critical questions about the general applicability of level descriptors to a research-centred curriculum that sought to embed enquiry-based learning. Whilst level descriptors are important for measuring progression they also imply 'fixity' of certain skills or aptitudes *within* discrete levels that may not always allow the curriculum designer to explore ways of building bridges and links *between* levels. Thus, we need to explore ways in which research practice – that necessarily requires 'higher order' skills of formulation, appraisal or evaluation – can be delivered in a way that is appropriate and achievable for students new to university. Such a managed taste of research-based learning is important in order that students

107

develop a holistic sense of their curriculum and so that that the increased focus on research-centred practice and self-directed study in later levels is well prepared for. Additionally, employing students to undertake academic research, to demonstrate research skills, techniques and results, further rewards their good practice.

In summary, there is a wider, more entrenched context to this debate as Jenkins et al. (2003) have highlighted in their emphasis upon the careful cultivation of a research culture for students, which can only be brought about if there is an institutional policy shift in bringing research and teaching more closely together. As Ramsden (2001: 4) has argued: 'I believe that the main hope for realizing a genuinely student-centred undergraduate education lies in re-engineering the teaching-research nexus'. Such a nexus need not be led by academics' research interests at all. In fact, the research interests of students are just as valuable and within the context of a media studies degree may even be more up-to-date and original. More importantly though, the development of an undergraduate research culture may well require supportive institutions but this does not mean that teachers have to sit and wait for the institution to become supportive. If the 'aim is to increase the circumstances in which teaching and research have occasion to meet' (Hattie and Marsh, 1996: 533) then the following provides one example for such a meeting. Thus, '[t]he question is not how individuals become members in a larger cognitive community as they do in apprenticeship studies. Rather the question is how a cognitive community could emerge in the first place' (Schwartz, 1995: 350). Allowing space in the curriculum for the emergence of a research community, even if that community is only evident for the briefest of moments, can certainly yield important results.

The research methods detailed below were intended to contribute to developing a more supportive relationship between tutors and students, by encouraging what Williams and Horobin (1992) refer to as a 'we culture' (cited in Marshall, 1999: 115). The methods sought to rethink the power-differentials between teacher and learner through collaborative research practice: the idea being to 'offer one way of actively involving and engaging with the agendas of those who are being researched' and of exploring (and valuing) shared experience (Field, 2000: 334). More importantly, allowing peer mentorship through research-based workshops was modelled upon the 'transition workshop' run by Peat et al. (2001), for new entrants to develop learning networks and help them move into University life more comfortably. The working definition of how the students should engage with the problem hinged on the notion of collaborative learning as 'a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem' (Roschelle and Teasley, 1995: 70). Here, then, one can see the development of knowledge through social interaction.

108

This peer-mentorship strategy promoted a concept of students in 'learning groups where a power structure or hierarchy is deliberately suppressed' (Kremer and McGuiness, 1998: 46). The purpose, then, was that the peer or collaborative learning approach to developing a research culture should dismantle the notion that research into the discipline was authoritative and precious, such that these students could take ownership of the research material without authoritative strictures (Abercrombie, 1979: 21). The approach sought to confirm the findings of Lewis and Habeshaw (1997), Marshall (1999), Styles and Radloff (2001) and Pearson and Brew (2002), all of whom address the need for clarity, guidance and structure for promoting independent and autonomous undergraduate researchers.

Research methodology

The project entitled 'Developing a Research Culture in the Undergraduate Curriculum' was designed to demonstrate the value of collaborative research with and among students through the use of enquiry-based learning (EBL) and problem-based learning (PBL). Six established undergraduates designed and delivered a half-day research conference to new undergraduates in order to better understand how a research culture can be developed from the beginning, how collaborative research can aid this development and how to offer a joined-up curriculum. The three activities used in order to gather the data are now described.

An online focus group

Three Level II and three Level III undergraduates were employed on the project from October 2003 to March 2004. These students were from the Media Communications field at the University of Gloucestershire. An asynchronous online focus group was established and the project leaders, both senior lecturers in the field, acted as e-moderators which involved facilitating discussions and posting questions but largely observing the discussions unfold in a virtual learning environment. During this process the Level I student representative to the field provided the role of e-consultant, which involved responding to the students' call for more information on the needs and problems that new students face on entering university.

A problem-based learning (PBL) activity

The fundamental activity that motivated the online focus group discussions was a PBL task, which required that the students solve the problem of the lack of a research culture for new undergraduates. This meant planning, preparing and delivering a half-day 'Research Conference' for new students based on a series of interactive workshops and presentations in March 2004.

109

Three workshops would be created, designed by the students themselves, based on their consultations with the Level I field representative. The conference would consist of a welcome meeting, break-out workshop sessions and then a plenary. The nub of the conference was to establish (and evaluate) a community of learning across all levels of the curriculum centred on the development of a 'research culture'.

The half-day research conference

Held in March 2004, the student-led conference was attended by 48 first year undergraduate delegates and ran as three 45-minute workshops in two repeated sessions, thus allowing the delegates to choose two out of three options. The video-recorded workshops were run by the students without the presence of staff. While the project leaders were on hand to help with any organizational issues, they did not attend the workshops. The use of a bespoke up-to-date conferencing facility and conferencing refreshments usually reserved for staff effectively conveyed to the students that their research was of value and that the delegates' attendance was being taken seriously.

Results: revealing the undergraduate's perception of research

In total, 75 messages (15,735 words) were posted to the online focus group as the students grappled with the problem of developing a research culture in the following ways. Firstly, they reflected upon how they had felt about research when they were in Level I. Seeing the workshops as '"bridging the gap" between A level and degree work' they reflected upon the 'passivity and little background context in A level work' that 'most students carry … into uni'. 'If they don't know where they're going', wrote one of the students, 'then they're probably still carrying a passive attitude towards research, thinking it's something they "have to do" instead of being a varied, active process' (Level II student, online message posted 03/12/03). Quite clearly, the students saw the issue of developing a research culture in the curriculum as subject-specific, arguing that:

> [w]e need to build a research 'culture', a philosophy of research, not by saying 'right, theorists talk crap, here's how to break them down in three simple steps' but by instilling an exploratory curiosity when confronting any media text. If we don't stay on the surface of research as a process, then this'll probably become an 'idiot's guide to media communications.' (Level II student, online message posted 07/04/04)

Thus, they pinpointed areas of weakness in curriculum delivery that highlighted how students went wrong with research from the outset. Overall,

110

the online focus group discussion led to the development of their three different workshop approaches to research: 'opening the door to undergraduate research', 'broadening research' and 'finding an angle and being creative with research'.

The delivery of the first workshop was a bone-picking exercise of a typical module guide and showed that students viewed these documents as instruction manuals: 'If you identify the underlying principles then you won't spend loads of time "trawling through internet journals and books etc." gathering lots of information you are never going to use' (Level III student, Workshop 1). The claim that '[t]here's always a couple of marks you can gain by showing that you have read that [pointing to the assessment criteria]' (Level II student, Workshop 1), showed how students are strategic researchers. Largely because as one student stated: 'You're going to find that tutor contact gets less and less and less and the whole point is that they don't tell you how to do this research' (Level III student, Workshop 1).

The second workshop's focus was more on the tools used to gather materials. Making first years aware of all the resources available to them through discussing the textbooks, journals, internet sources, online journals, newspapers and magazines that they had used to research their dissertation topics was seen as a practical way to instil a research culture. More importantly, the third workshop took the unconventional approach of showing students how they could be creative with research through a problem-solving activity. In this, students were provided with a washing line and pegs. Using a stack of papers with key theories, theorists, concepts, terminology and media examples printed on them, the participants had to creatively peg together a research project.

> We'd like you to think about ways in which you can connect to areas you are already familiar with and design an idea for an essay based on this. So what we'd like to do is give you a large selection of images, terminology and ideas and get you within groups to pick out from these resources the things you would be interested in talking about if you were actually designing this independently in your essay. (Level II student, Workshop 3)

The aim of this workshop was to demonstrate that when it comes to research everything can be connected to everything. In their evaluations of the workshop, all nominated this active and collaborative workshop as the most useful.

Discussion: building an undergraduate research community

The students' keenness to distance their conference workshops from the learning and personal development courses they had experienced makes

111

clear that as curriculum developers we should seriously reflect upon the 'key skills' modules we present to them as exemplars of good research practice. As one student warned:

> [i]f we aren't careful we will end up reproducing the awful SF module us third years had in the first year (I think they have improved since!) where we had to begrudgingly turn up and be lectured at about how this and that is important but still left not knowing how to go about achieving any of it. (Level III student, online message posted 4 December 2003)

Such courses are not crowd-pleasers and they often seek to invoke active learning through passive delivery. As the Level I representative made clear in his role as e-consultant to the team:

> All 1st year students are on a mandatory Learning and Personal Development module. This is basically an idiot's guide to working at uni. It provides information on the Learning Resources, how to produce Bibliographies, essay writing skills etc. It's what I'd call a key skills module. It is however, seen as pretty tedious and time consuming by some students. Despite this module, many students are worried about what the future holds for them at university. (Level I representative, online message posted 11 December 2003)

Our grandiose notions of students wishing to develop an exploratory curiosity of the subject area soon gave way to the realization that these students were so assessment-driven they sought a paint-by-numbers approach to gaining knowledge, packaged it neatly and presented it back to tutors who equally assessed this knowledge in line with criteria and descriptors. In summing up, the students stressed that time was of the essence and in the conference they explained that:

> You don't have to spend hours reading each article and every page of the book. Look at the introduction, look at the conclusion, see if that applies and use it. Whilst crucial to cover theory of media texts, the other methods we have covered today, show how your arguments can become far more convincing and persuasive just by using a few more methods of research. Students with a broader range of research in their essays often get better marks, that's you know, just common sense really. (Level II student, Workshop 2)

Unexpectedly, the online discussion between the students delved much deeper into the problem of instilling a research culture into the curriculum than had been anticipated. Their critical reflection upon their entire experience of researching for assignments unearthed a subtext to the project. The desire to see rigorous research could be interpreted as a defensive mechanism, stemming from a need to justify and prove more globally that

112

studying media was a serious pursuit. As one of the students phrased the dilemma of academics in a much maligned subject area:

> Know this may seem either boring or irrelevant (probably both), but for me this entire SoLT project has come about due to the identity crisis suffered by Media Studies and other interdisciplinary degrees. By aiming to 'develop a research culture' in the minds of media students, in other words we're trying to instill [sic] a theoretical rigour to a course seen by so many, in a highbrow view, as mickey mouse. (Level II student, online message posted 2 February 2004)

Research-based degrees grapple with the problem that undergraduates do not research deeply and widely enough, but in the context of this degree the student conference organizers had pinpointed a philosophical dilemma at the heart of the enquiry. While some members of the student research team interpreted the solution to the problem as a need to show new students the ABC of how to research effectively, others resisted this simplistic approach. The students who led the third workshop employed a different method. Their focus upon independence, depth and creativity in researching media sought to move the Level I undergraduates away from an ABC to research. While the other two workshops extolled strategies coterminous with research for assignments created by tutors, this workshop recognized the move toward the dissertation as a sign of graduateness. Taking this heuristic approach proved fruitful as they demonstrated to students the kind of autonomy they could have in designing research projects of their own, providing a sense of ownership of the degree subject matter.

Student evaluation of the conference from delegates and presenters was very positive and all valued the opportunity to network. In particular, they respected the views of their peers and clearly highlighted in their feedback that they had benefited from sharing knowledge across the levels in this way. Using students to solve the problem and run the conference proved to be motivating and enabling (one of the workshop presenters later graduated with a first class honours, winning scholarships for MA and PhD research). Most importantly, rather than lone work, partner and group work was especially productive. The opportunity to engage with tutors in a piece of 'live' research was of particular importance to the student presenters who appreciated that their research abilities were being celebrated. That this 'live' research was an activity with a process of enquiry at its centre that solved a problem and led the teams in three different directions only enriched the conference and the experience of the delegates. This was an extra-curricular research opportunity for these students to contribute to the research culture of the department, to inform curriculum redesign and to serve as mentors to new undergraduates. Clearly, building a research-rich

113

learning environment cannot be achieved overnight but the online discussions and the conference did provide a window into a different way of teaching and learning with students as partners in learning.

Recommendations

What was clear from the various methods and guidelines delivered in the workshops was that the students promoted support, guidance and clear structure as the key ingredients to encourage independent researchers. While the research literature bore this out in its identification of the barriers to deep and reflective undergraduate research, i.e. lack of collaboration and active learning, a need for a redefinition of power differentials and peer-mentorship or an under-resourced and unsupportive institution, it did not offer enough practical examples for implementing solutions. A student-led research conference is one simple, effective and low-cost way of developing a research culture in the undergraduate curriculum. It can promote peer mentorship, cross-level communication and a joined-up curriculum and place undergraduate research at the forefront of a degree programme. If established students run the conference and it is recorded, it also provides evidence for improving curriculum delivery and demonstrating active learning.

However, it is recognized that whilst research-based learning might be a valid aim of any curriculum striving to produce independence or autonomy, it is hard to achieve and has to be carefully managed. Students bring with them expectations and aspirations that may themselves be internally contradictory and that are challenging to meet given student numbers. A passive approach to learning abounds among new students and with no sense of how their learning has to change to graduate they are in the dark as to where they are going. Having said this, encouraging undergraduates who are engaged in dissertation research to present their strategies, ideas and thoughts through a research conference to new entrants provides opportunities for peer mentorship, collaborative learning and a sense of a joined-up curriculum. It becomes a nexus where many students from a variety of degree combinations meet and connect on the overriding issue of research.

Instilling an exploratory curiosity in cash-strapped, assessment-driven, tuition fee-paying, homesick students is idealistic but it draws attention to the fundamental flaw in how departments deliver research skills. Rather than focus on the ABC of how to research, the very value of undergraduate research needs to be embedded in the curriculum from day one. Furthermore, as our future research project suggests, promoting undergraduate research through tying assessments to local community involvement may well be particularly enriching. Consequently, we recommend

114

that the following approaches be explored if they are not already under-taken at your institution:

- course and faculty awards for dissertation research;
- letters of congratulations from tutors and external examiners for research assignments of exceptional quality;
- using examples of undergraduate research projects on university websites;
- extra credits in a course for extra research undertaken;
- embedding of a virtual learning environment within courses to encourage research discussions and to integrate the rich internet resources available;
- promotion of peer mentoring either face to face, online inside virtual learning environments or through credits;
- involving students in academics' discipline research and/or pedagogic research projects;
- establishing research opportunities in the local community: through interviewing, vox-pops or running after-university workshops alongside tutors;
- group dissertation tutorials online or face-to-face; and
- establishing research 'blogs' or personal digital research archives.

The student perceptions of research revealed that it needs to be promoted as the 'flagship' activity of each discipline, not simply as a set of transfer-able skills. Students need to be made visible as research-active individuals and teams. They need to see that their research efforts are valued. As each university in the UK and around the world watches the pendulum swing between research and teaching as the core businesses of their institution, wondering if no-man's land is where it will end up, tutors and students are engaged every day in research in one form or another and much of this work is not celebrated beyond that which is necessary for assessment.

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