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Undergraduate research as pedagogy for the twenty-first century university: Student-generated perspectives on research-teaching links. (0013)

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Undergraduate research as pedagogy for the twenty-first century university: Student-generated perspectives on research-teaching links.

Summary (150 words)

~~—————This paper reports on a project in which student researchers were engaged to conduct interviews with academics to construct a view of their teachers' understanding of the link between their disciplinary research and their teaching. Nine students each produced an academic paper to summarise their findings and these case studies are analysed here to draw out themes that could influence the success of adopting a research-based pedagogy. A meta-analysis of the nine case studies reveals some disagreement among academics of the role of research in student learning.~~

~~—————We reflect here on our experiences with the student researchers in order to evaluate using students as researchers for curriculum enhancement, and consider the tension between student voice and engagement and co-enquiry as an area requiring further development. Possible consequences are considered for academic development of adoption of a research-rich pedagogy that may disrupt common conceptions of teaching and research as separate activities.~~

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The idea that undergraduate research may provide the basis for university pedagogy in the twenty-first century (Dotterer, 2002) is one that has gained ground in recent years. This has been accompanied by continuing discussion of research-teaching links and a proliferation of undergraduate research journals within UK and US universities. This paper considers the benefits and challenges of student engagement in research of the undergraduate curriculum and the possible consequences for academic development.

We report on a project in which nine student researchers undertook a total of 81 interviews of the academic staff within their own Schools. The project featured students in the role of partners in research, as we were seeking to move beyond the consideration of students as 'data points' in the investigation of student voice to move towards the inclusion of students as co-enquirers and co-creators of emerging curriculum models (Partridge and Sandover, 2010; Bovill *et al.*, 2011). From the interviews the students conducted, they started to build a picture of staff perceptions of the links between teaching and research within their own disciplines. The students each wrote a report of their findings in the style of an academic paper, and these were collated into a special issue of an in-house journal (Authors, 2013). These reports provide the raw data for this paper in which we present:

A meta-analysis of nine discipline-based reports.

Analysis of the discipline-based reports and the quotes given within them reveals a number of interrelated themes that warrant further study. Some academics clearly feel that students need to have acquired knowledge *before* undertaking research, needing to have already grasped theories in order to test them through research. Others see the purpose of the research to enable students to gain knowledge. These opposing 'knowledge first' or 'enquiry first' conceptions of undergraduate research may be related to academics' ability to see 'research as pedagogy' as a general principle or as an imposition on their research and teaching context. When academics make comments (reported in the students' accounts) about "*undergraduate teaching being too simple*" to support undergraduate research, or that "*research has become extremely complicated and it is difficult to find something for students*", it would appear that they are considering research as generating 'knowledge new to discipline or society' rather than 'knowledge that is new to the student' (Brew, 2013). They are, therefore, trying to place the undergraduate within their own research agenda, rather than thinking in more general terms about a wider research-rich curriculum. When an academic states that, "*teaching does not challenge the mind enough ... [as] ... it is like spending time with small children*", it re-affirms the separation of teaching and research that has been reported previously and suggests that the conception of the curriculum simply as 'content to be covered' is still one that can be found inhabiting the corridors of academia.

The social nature of teaching is contrasted with the often more individual role, and rewards, of research. The focus on research as a means for personal professional development led some interviewees to consider research as a selfish activity, whereas the rewards for teaching are not seen to come from personal progression, but from the progression of others. Academics clearly value ownership of their own research, but find the concept of ownership more difficult to apply to the students in their care.

It is also suggested by some of the data that academics' personal perspectives may be more significant than any widely perceived disciplinary perspective, with individuals from the same department often verbalising contrasting views. The origins of these views require further investigation.

From mentoring to co-enquiry.

The power relation between students and academics is difficult to break down in order to foster a genuine atmosphere of co-enquiry. As observed by Curtis *et al.* (2012), we found the intention to collaborate fully with students to be constrained by time and the need to develop the research approach and gain ethical approval before the students are involved in the process. The research activity was then squeezed into an academic year and without interfering with the students' examination commitments. Additionally, most of the students were working in a social science context for the first time and so the need to provide some mentoring for students (e.g. in interview techniques) re-enforced their novice status.

Consequences for academic development to support engagement with a research-based pedagogy.

Emerging models of academic development that focus on the structure of knowledge view the development of academics as more than just subject experts, but rather as professionals who can navigate the terrain between subject expertise and expert practice (Behari-Leak and Williams, 2011; Reitano and Green, 2013). Such expertise is seen to develop as a non-linear, iterative process (Brody and Hadar, 2011), where visualisation of knowledge structures supports explicit discussion of the trajectory of development.

Exploring the complementary roles of conceptual density and contextual specificity within their disciplinary areas may offer communities of teachers “a way to make the organising principles of knowledge visible to students through explicitly teaching discipline-specific resources that create and shape the knowledge of their disciplines.” (Macnaught *et al.*, 2013: 61). That students can be involved in work to uncover these principles supports the view of Werder *et al.*, (2012) in considering *co-enquiry with students* as a threshold concept in academic development. However, this may be complicated by the conflicting power issues of student voice and student engagement mentioned above which require careful management.

The more the undergraduate curriculum draws on the research culture of the discipline, the stronger the argument becomes for basing academic/faculty development within the disciplines rather than as a generic field. Viewing ‘*research as pedagogy*’ (Dotterer, 2002) might seem to help link the scholarship of teaching more easily to academics’ prior knowledge (that is based in the research of their discipline), and so make it be easier to get academics to adopt a more scholarly approach to the pedagogy that underpins teaching, rather than adopt a surface (tips for teachers) approach to academic practice.

988 words

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