BRINGING TEACHING AND RESEARCH TOGETHER AT UNDERGRADUATE LEVEL: Perceptions of Higher Education Academics (0349)

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1. Introduction

> *"What I am arguing is for seeing both research and teaching as different forms of inquiry. The really useful link I am proposing is that both research, in all its variety, and teaching, beyond the limited delivery and transmission models, should both be conceived for our academic and pedagogical purposes as processes of inquiry."* (Bradley, 2002, p.451)

We truly believe that teaching and research are two intertwined activities, which should be brought together and put into practice inside and/or outside the classrooms. In fact, the importance of engaging students in research-based approaches has been extensively studied and undergraduate students' gains were reported in diverse studies (Brown & McCarteny, 1998; Hunter *et al.*, 2007; Lopatto, 2009).

Healey (2005) highlights that linking teaching and research and involving undergraduate students in research activities help the students to develop several competences in a holistic, integrated and in-depth manner. Consequently, undergraduate students benefit from pedagogical contexts that allow them to develop personal, interpersonal, scientific and academic, cognitive, and so many other competences of transferable nature, which will be extremely important to several contexts within and outside Academia. Also, Brew (2010) mentions that the holistic development of competences will help students to cope with the complexity and uncertainties generated by the advances of science, and with today's uncertainty (Barnett, 2000). In fact:

> *"The task of generating uncertainty: that' is the university's research function. The task of managing uncertainty, of enabling individuals to live with uncertainty: that is the university's teaching – or rather, its educational – function"* (Barnett, 2000, p.142-143).

Therefore, academics should 'shift' their role (or almost their 'teaching identity'): they should be a guide, and not only a transmitter of knowledge, so they can facilitate students' learning path, and *"enhance students' learning experiences by progressing the ways in which coursework teaching is informed by disciplinary-based research at all levels"* (University of Sydney, 2004, quoted by Jenkins, Healey & Zetter, 2007, p.5).

2. Description of the background and methodological scope

In Portugal, there is an absence of CPD courses directed to Higher Education (HE) teaching staff. Since they are not compulsory, they do not influence teachers' assessment nor their career progression. As such, the need for intervention in this area is overwhelming, despite of mainly being proposed by institutional training services on a voluntary/underpaid basis.

Within this context, at a specific Portuguese HE institution CPD modules were designed, aiming to address several issues on HE Pedagogy, particularly on innovative and active teaching and

learning strategies. One module had the duration of 30 hours and other 15 hours. Both had most of the same contents in terms of pedagogical strategies that were approached: short active learning activities; linking teaching and research; undergraduate research activities outside and inside the classroom; cooperative learning; problem-based learning; reflective portfolio; and critical friendship. The contents were only reduced in what concerns some theoretical background on HE political issues (particularly the Bologna Process and the Lifelong Learning agenda), and some discussions were shortened.

Due to a lack of theoretical and empirical reflections, namely within the Portuguese context, on research-based pedagogical strategies, the author (who was also the CPD trainer) decided to stimulate personal and group discussions, based on teachers' (pre)conceptions and practices, on two main intertwined topics: linking teaching and research, and the involvement of undergraduate students in research activities.

After the presentation of theoretical basis and assumptions that underlie those research-based approaches, a discussion regarding the benefits of strategies where research is at the heart of the pedagogical action was promoted. With this proposal, we thus aim to present a qualitative analysis and synthesis of 22 participants' perspectives from several academic domains, transmitted orally. An interconnected net of glimpses of the reflections and discussions carried out by teaching staff will be revealed.

3. Results

In the discussion, academics shared many thoughts pre/mis-conceptions on the topic. Therefore, we will organise the results according to the main themes that emerged.

3.1. Academics mirroring their practices in Healey and Jenkins' conceptual framework

There was a group of academics who thought they had no idea in how bringing teaching and research activities together. Nevertheless, when being in contact with Healey and Jenkins' conceptual framework (2009), they became aware that, after all, they already used some strategies that stimulated a 'research mindset' in the students, although at different levels:

(i) Research-led activity: there were some academics who brought results from their own research into the classroom to approach a certain topic/subject;

(ii) 'In between' research-led and research-tutored activity (the most used): academics usually asked the students to read scientific articles and reflect about them;

(iii) Research-oriented activity: some academics suggested a scientific article and asked the students to critically read and question it, and, at the end, present the reflective pathway they went through (in an oral presentation);

(iv) Research-based activity: academics, who had some practical and/or laboratory classes, tried to put the students in contact with 'real' research, by posing them a research question. Students needed to go through the 'traditional' research process: possess theoretical knowledge, identify hypothesis, run an experiment, collect and analyse data, and then write a report.

Academics considered that the 'task'/challenge of involving students in research activities implies that they should be active researchers themselves, so they can not only talk about the research, but also design/plan activities in which the students may also be engaged. Nevertheless, sometimes the most difficult was to find 'proper' connections/links between the subjects of Curricular Units they were teaching with the topics they were researching.

3.2. Academics' perceptions of students' competences essential for research at undergraduate level

In was almost consensual that students needed to be progressively introduced to research. A research-based pedagogical 'continuum' should exist, because students are not usually prepared for research activities at undergraduate level. Even when students reach Master's degree, they need to be extremely guided and oriented.

In fact, some academics teachers doubted the possibility of engaging undergraduate students in research activities, particularly because they usually arrive HE ill prepared and not very motivated. Academics mention that students frequently demonstrate a lack of competences and/or ill-developed competences, such as: critical thinking, critical reading and writing, problem solving, capacity to search for information and critically selecting the best information they need. Consequently, despite the recognition of the importance of these activities, some academics were reluctant in putting into practice research-based activities.

Therefore, some academics believed that the students, who were well prepared and had the 'proper competences', could be integrated in research activities outside the classroom – although they still needed to be closely followed and their work monitored. In this sense, research activities are not for all students: only for those who are motivated and 'deserve it'.

However, other academics considered that the 'enhancement' of laboratory classes could be a good way of promoting the integration of undergraduate students in research activities within the classroom. Nevertheless, they expressed these could only be isolated activities related to an ongoing research project. This could be a way for the students to 'feel part' of the research process, namely by understanding the 'bigger picture' (when 'integrating' the task in the all project plan) and by being in contact with researchers involved in the project.

3.3. Academics' perceptions of the benefits of research-based activities

All participations saw the potential of linking teaching and research and involving undergraduate students in research activities – despite what was mentioned in the previous sub-section. They were unanimous in consider that (i) it allows schedules' flexibility; (ii) it increases students' autonomy, and raises their involvement with the tasks; (iii) research pushes students' boundaries, opens students' horizons and enhances competences, namely in terms of: critical thinking, questioning, searching for suitable information, critical reading, academic writing, and problem solving. Simultaneously, academics was aware that themselves and the students share a set of responsibilities in the teaching and learning processes with or without research activities.

3.4. Academics' perceptions of potential difficulties in using research-based activities

Simultaneously, academics highlighted potential difficulties to put into practice research-based activities: (i) the lack of students' preparation, as already mentioned, and thus the diversity of students' profiles; (ii) the lack of time prepare this sort of activities, on the one hand, and to deliver 'hard competences', on the other hand; and (iii) the lack of institutional culture to support this kind of (research-related teaching) activities.

4. Final reflections

Although it might be true that many academics are not aware of research-based strategies, such as linking teaching and research and undergraduate research (inside or outside the classroom), many seem to be reluctant in leaving their teaching 'comfort zone'. Also, because some undergraduate students seem not to be prepared for research activities – according to academics' expectations, and perhaps conceptions of research and level of competences they should demonstrate – academics seem not willing to put into practice research-based activities.

Therefore, we would like to engage participants in a discussion around these topics:

- What are participants' perceptions of the benefits of research-based strategies within the classroom?

- What art participants' perceptions of the potential difficulties in linking teaching and research and/or involving undergraduate students in research activities?

- How to deal with current undergraduates' profiles, considering that, many of them, may not have 'all' the ideal competences to be involved in research? Is it 'fair' not to give the students the opportunities to be involved in researched and being challenged at a different level?

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