



Students as researchers

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The context of 'students as researchers'

This resource is for academic staff who wish to develop a 'students as researchers' pedagogic approach. It focuses on the different institutional contexts which can frame the student research experience and promotes reflection on your own teaching situation and how you can develop your own practice.

What constitutes student research?

Beckham and Hensel (2009) refuse to define undergraduate research because of the wide variety of interpretations, not only in disciplinary terms, but related to the differences between the contexts in which research takes place. Defining research *with* students is recommended by Jenkins and Healey (2009), so that staff and students share an understanding of research norms in the discipline. In an increasing number of institutions interdisciplinary research experiences are being undertaken that may bring together multiple disciplinary norms, values, methodologies and perspectives, and even conceptions on what counts as undergraduate research.

Context

There are many social as well as physical contexts for students as researchers in higher education. Students may select or be allocated to a supervisor or mentor for their dissertation or final year project on a one to one basis. Alternatively they may be selected by a competitive application process for a paid summer undergraduate research experience as part of an existing academic's research/research group activities. In some cases students are supervised by postgraduate students rather than academic staff, or work in teams including staff, graduate students and undergraduates (Walkington, 2015). Some students may receive course credits or financial benefits for their work whereas others do not and the frequency of meetings and duration of the mentoring relationship can vary widely (Gershenfeld, 2014). All these permutations allow for a rich diversity of potential experiences from situations where learners can take a lead in asking and framing enquiry, or where they have little autonomy, but potentially build team working skills and learn new methodologies or techniques.

Dimensions for framing undergraduate research contexts

A series of dimensions for describing the range of contexts in which undergraduate research takes place can be found in Table 1 below. The table outlines ten bipolar dimensions that help to frame the variety of contexts in which undergraduate research takes place: Focus, Motivation, Inclusivity, Setting, Collaboration, Originality, Content, Audience, Compensation, and Staff-Student Relationship. For each dimension (column 2) the respective ends of a continuum are described in columns 1 and 3.

Table 1: Ten dimensions for framing the context of undergraduate research

Student, process-centred	Focus	Outcome, product-centred
Student-initiated/voluntary	Motivation	Staff-initiated/mandatory
All students	Inclusivity	Selective
Curriculum-based	Setting	Co-curricular fellowships
Team or group	Collaboration	Individual
New knowledge	Originality	Original to the student
Multi-or interdisciplinary	Content	Discipline-based
Professional audience	Audience	Campus/community audience
Partnership	Staff-student Relationship	Supervision
Unpaid	Compensation	Paid

Adapted from Walkington (2015).

Undergraduate research can be mapped against these dimensions, so for example, an institutional-funded summer research scheme may be: student learning-centred, but on a series of faculty-initiated topics. Because it is funded, it is highly selective and occurs outside the curriculum. The research is carried out within a team (the research group), composed of postgraduates and the chosen undergraduate, and new knowledge is the long-term target. The research group is formed through an academic collaboration between two disciplines and the research disseminated through a campus-based conference. The student receives a stipend to take part and the staff member acts as a mentor in the research process.

Table 1 is useful not only for establishing the dimensions of research contexts against which to compare schemes, but also to support your decision making if you are starting a new students as researchers project.

As research into the benefits of undergraduate research participation has become more extensive (Lopatto, 2007; Taraban and Logue, 2012), there has been a realisation that the context in which it is taking place is important in determining these benefits, therefore this framework is useful in highlighting similarities and differences between contexts in order to make meaningful comparisons.

How to use this resource

Activity 1

Use the student quote below to highlight/map the relevant descriptor of each dimension in Table 1.

"The key moment in my experience as an undergraduate student at Nottingham was a fieldtrip to Mexico in my third year. This trip formed part of a module and I went with a Professor, a post-doctoral student, a Masters student and a group of eight undergraduates.

"This mix of undergrads and post-grads and an established researcher in the field, in an informal setting, was an extremely useful experience as I gained many useful insights into how to undertake fieldwork, laboratory applications and report writing, both as I had to undertake these as part of the module, but because I was able to have many conversations that may not have happened had I not been in the field.

"The experience of writing up research in the format of a paper, using a project that I had devised, with data that I had collected and analysed, was an important experience as it was the most realistic encounter I had had with research. It was this experience that encouraged me to approach the module convenor about the possibility of a PhD."

Activity 3

Now that you have completed your mapping of existing practice, place another mark to show where you would like your practice to be in the future. How can you move your practice in the direction that you want to? (If you have noticed a desire to move towards the left hand side descriptor for each dimension then this is the lower cost, embedded and mainstreamed model that allows more students to participate in and benefit from an undergraduate research experience).

Activity 4

Now identify the resources and /or support that you will need to be able to develop your practice in relation to each of these dimensions. Finally, make an action plan to allow you to move at least some of the dimensions in the direction you want to.

Action plan:			
Dimension number	Which direction do you want to move towards?	Action	Target date

References

HEA 2014. Framework for student engagement through partnership. York: HEA <https://www.heacademy.ac.uk/enhancement/frameworks/framework-student-engagement-through-partnership>

Walkington, H. 2015. Students as researchers: supporting undergraduate research in the disciplines in higher education. York: HEA. <https://www.heacademy.ac.uk/resource/students-researchers-supporting-undergraduate-research-disciplines-higher-education>

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