

From the International Desk

Undergraduate Researchers Change Learning and Teaching: A Case Study in Australia and the United Kingdom

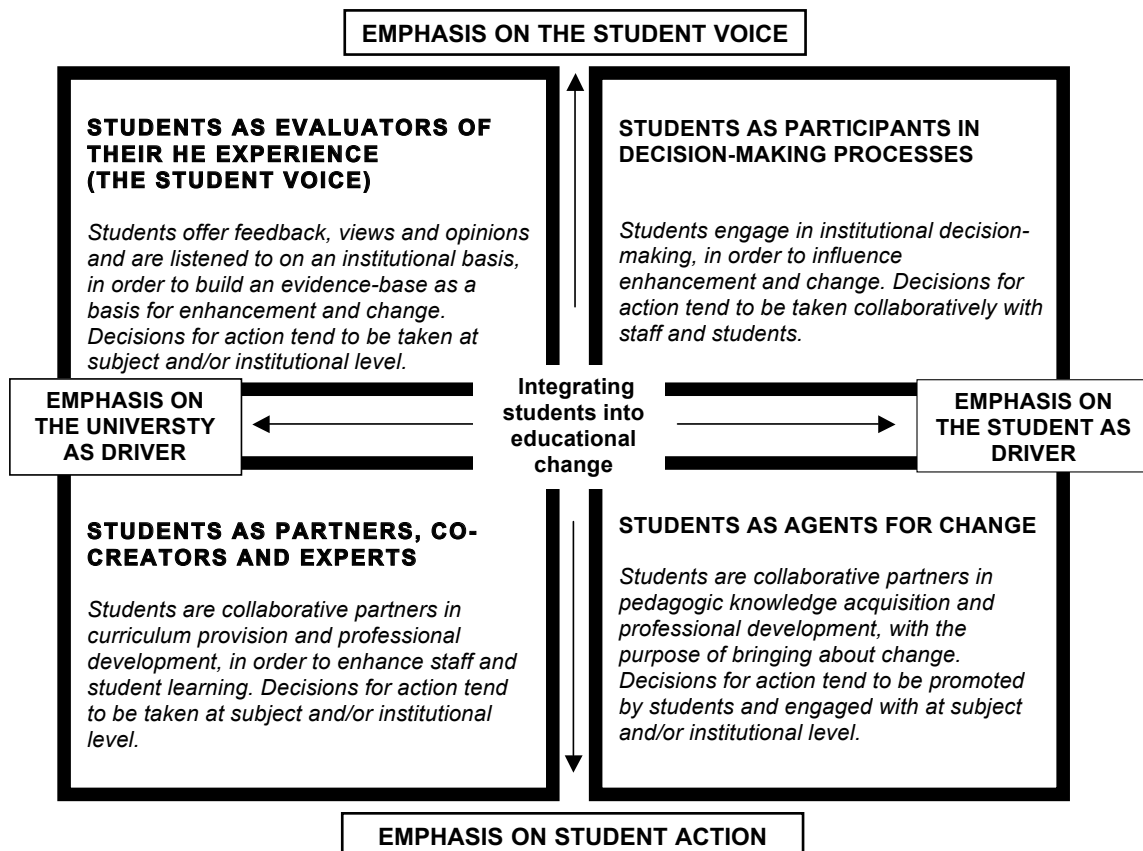
Over the last decade, undergraduate research has become a feature of the student experience in many universities across the world. While the primary focus has been on disciplinary research, in some cases universities have championed student research into teaching and learning (e.g. Bovill, Cook-Sather, & Felten, 2011; Burkill, Dunne, Filer & Zandstra, 2009; Healey, Jenkins & Roberts, 2005; Healey, O’Conner & Broadfoot, 2010; Partridge & Sandover, 2010). The opportunity to undertake pedagogic research allows students to develop skills beyond their own disciplines and to contribute to university-wide discussions about changing approaches to learning and teaching. This has meant that student voices have become better informed, adding weight to the role students play in enhancing the quality of institutional academic experiences.

Two universities, at opposite ends of the globe, illustrate this well as both offer undergraduate research programs that allow students to explore a range of institutional issues and to offer recommendations and solutions for academic enhancement and change. The results are being used effectively by the students’ institutions to revise curricula and develop pedagogy.

Dunne and Zandstra (2011) have suggested a range of ways in which students can become active partners in shaping their learning experiences. The model presented in Figure 1 summarizes these and highlights the different roles that students play.

Figure 1: A model of ways in which students can be integrated into educational change

(Source: Dunne and Zandstra 2011, 17)



Students' involvement in educational change in most universities has largely been at the level of evaluating their academic experience (upper-left quadrant). There are also accumulating examples of students working as partners, co-creators, and experts where the motivational lead has been the staff in the department or university. Where students have taken a more active role, their participation has usually involved engagement in the decision-making processes of committees. However, Burkill et. al (2009) have articulated a more "radical" role for students acting as agents of change (lower-right quadrant) by "setting their own agenda for research on teaching and learning ... engaging with research processes ... implementing their solutions" (87). It should be emphasized that the quadrants in Figure 1 are only examples; student engagement may cut across all of the quadrants in particular circumstances.

In general, the model is underpinned by a growing concern in the United Kingdom about seeing students as customers or consumers, a concept that has long been discussed in the USA, but is comparatively new elsewhere. The idea is controversial because, "If students are envisioned only or primarily as consumers, then educators assume the role of panderers, devoted more to immediate satisfaction than to offering the challenge of intellectual independence," (Schwartzman 1995, 220). Furedi (2009) claims: "... encouraging students to think of themselves as customers has fostered a mood in which education is regarded as a commodity that must represent value for money."

However, new metaphors provide a more positive set of concepts such as co-production, collaboration, and partnership. For example, co-production is perceived as requiring active engagement with the entire learning process on the part of the student, and sees the student as an active participant (McCulloch 2009). Ramsden (2009, 16) envisions students as "responsible partners who are able to take ownership of quality enhancement with staff and engage with them in dialogue about improving assessment, curriculum and teaching." It should be noted that work in elementary and secondary education is more generally advanced in this arena, with a strong literature regarding the student voice (Czerniawski and Kidd 2011; Fielding and Bragg 2010; Ruddock and McIntyre 2007; Fielding 2001).

This paper presents two case studies, one in an Australian university and the other in the United Kingdom, in which students' efforts have largely been located in the "agents for change" domain of the model in Figure 1. The University of Western Australia (UWA) and the University of Exeter programs are breaking new ground in providing students, as stakeholders within their respective institutions, with the opportunity to be involved in researching the need for

changes in teaching and learning. Both examples provide a wealth of evidence to suggest that these activities are successful in engaging students in researching and implementing new processes in postsecondary teaching and learning. The processes involved have been carefully developed and have the potential to be transferred widely to other institutions.

CASE STUDY I

An Authentic Research Experience at the University of Western Australia

The Undergraduate Learning and Teaching Internship Scheme (ULTRIS, see website, 2012) was established at The University of Western Australia in 2008. Undergraduates in their second or third year of study are eligible to apply for the internships. Between 10 and 15 students were selected from each academic faculty, in both 2009 and 2010. The program, which runs for six months, is not for credit but each student is provided a \$3,000 stipend to eliminate the need for outside employment. The guiding principle of the program is to give undergraduates an authentic research experience within a well-supported and scaffolded program. The program develops research skills in students that they can easily transfer to their ongoing disciplinary studies. It also allows them to see what advanced research would be like.

In each cohort of interns, a topic identified by the university as a priority issue in teaching and learning was used as the focus of the students' research. Specifically, in 2009 the focus of research was on "staff /student interaction outside the classroom," and in 2010, "the first year experience" was explored. The interns are allocated a supervisor and attend an intensive training period in basic research methods at the beginning and throughout the semester-long program. The students develop their own research questions under the umbrella topic that is relevant to their own faculty or relevant to a wider group within the university (for example, rural students, students with disabilities, international students). They then proceed to plan their research, collect and analyze data, write an academic paper, and report their findings within the university community and at an external teaching and learning conference.

Two rounds of these research internships have been conducted with a total of 25 students completing 23 individual projects. Table 1 provides an example of the range of studies undertaken.

Table 1: Examples of Student Undergraduate Research Projects

Project Title	Research Methods	Research Participants
Student and Staff Perceptions of Email Expectations and Criteria: What Are They?	Student and staff online email survey	Across faculties Students: 649 Staff: 48
Breaking Down the Classroom Walls: Looking at the Relationship Between Educators and Students Within the Context of Indigenous Pedagogy.	Observations of students and staff in a unit over four months, Focus group interviews	Students—Indigenous and Non-Indigenous: 12 Indigenous educators: 3
Forging Ties During Transition: First-Year Students and Social Support.	Online email survey	Across faculties Students: 258

Collectively, the results of the students' projects each year provide a comprehensive and contextually relevant insight into a particular issue of strategic importance to the university. Individual groups around the university are able to take the findings and use them in development of resources or in revision of practice.

Outcomes for Students, the Institution

At an individual level, students report substantial development of their personal knowledge, skills, and attitudes. For example, all interns point to the gains they have made in communication skills. In the words of one student:

I have learnt ... independent research; collaboration with others—discussing my ideas; public speaking—presenting to a group (on the spot!); the nature of researching—learning to think ahead, trying to cover all options; that is, looking at both the big picture and the small details and trying to integrate them.

All students spoke about the transferability of skills and that their studies in various disciplines had benefited from the research experience. One student said:

I learnt ... how relevant educational research is for all disciplines. That it is useful for improving my own unique experience both through self-reflection on what is useful to me as a student and through being able to critically analyze the institution that I'm supposed to be learning through.

From an institutional perspective, the university has gained through enhanced student engagement. Students reported

an increase in interaction with the university as a whole, with staff, and with fellow students across the institution. Noted one intern:

I am a better student because of ULTRIS. I am more involved in my own faculty, my confidence has overwhelmingly increased, and I feel more involved in the "university experience" overall.

Added another:

I no longer view staff as talking heads but as people who would potentially affect the way in which I see the world with their knowledge and experience.

In addition, because the students were all researching a common topic and the area was familiar to them (they all had acquired knowledge and opinions and experiences on these topics by virtue of being students), they had a stake in the process. They became a community of learners sharing ideas and driving the program (instead of being researchers of 15 discrete, unrelated projects). Said one student:

[H]aving the ability to go out and find what the perceptions and experiences of other students are and being able to get them out to a broader audience is very empowering.

One year the combined results of all the student research projects gave a snapshot—through the student voice—of first-year students' experience at the university. This snapshot included what that experience was like for rural and international students and covered issues relevant for students from each faculty. It told their stories and incorporated their suggestions for change. It also covered the staff perspective. This snapshot was published as a pamphlet for inclusion in staff-induction kits and teacher-training modules.

Other information from the projects was provided through pamphlets to all faculty members, university and faculty committees, and at workshops and in various publications. It included, for example, information from a student's study of email communications that provided tips for students and staff on how to get the most from such communications.

The student voice was also heard through the individual achievements of the researchers. For example, those involved in the program were more likely to apply for federal internships, scholarships, university positions, and roles on faculty/school committees. Almost all interns have applied for honors programs or a further degree. As one student said:

I was quite intimidated by the idea of doing Honours because I didn't have much experience with research, but now I feel really excited to start

my Honours project, and I feel as though I have the skills to do so.

Hence participation in the internship program has developed skills and attitudes in students that promote change both in themselves and within organizations.

During 2011, the program was rewritten and adapted for two innovative undergraduate research programs. It has been embedded in the new bachelor of philosophy degree, the flagship of a program of new academic courses at the university that began this past February and is the primary training unit for a large group of first year students who have won scholarships. This is a significant departure from the original ULTRIS structure of non-credit, short-term research internships. The primary aim of the new approach is to develop in the new students, from day one of their university life, skills in “thinking like a researcher.” The original internship model has also been adapted for a global classroom within an international partnership among The University of Western Australia, the University of Durham in the United Kingdom, the University of Otago in New Zealand, and Queens University in Canada. Recruitment of students commenced this past April.

CASE STUDY 2

Students as Change Agents: the University of Exeter

The Students as Change Agents initiative at the University of Exeter (see Change Agents website, 2012) is in many ways similar to the work at the University of Western Australia. The focus is on researching pedagogy and curriculum delivery, with students identifying a variety of actions and activities they would like to see implemented, and conducting research to provide evidence for the value of such changes or the direction these changes should take. Projects are akin to action research; students not only develop their expertise in pedagogic research but also take responsibility for trying to bring about evidence-informed change (as outlined in the “Students as Agents for Change” quadrant of Figure 1), promoting reflection and review at departmental and institutional levels. As Janice Kay, the senior deputy vice chancellor for education at Exeter, has said: “We seek to engage students as partners in shaping and leading their own educational experiences through our successful and growing Students as Change Agents initiative. The key concept is that students themselves take responsibility for bringing about change, based on their own research on aspects of learning and teaching.” (Kay et al. 2009)

The initiative enables students to act as responsible leaders and partners, collaborating to improve learning and teaching. Over three years, more than 30 small-scale projects

have involved undergraduates looking at topics such as assessment and feedback, engagement in lectures, seminar provision, technology development, learning spaces, employability, sustainability, personal and peer-tutoring, and academic writing. Topics for projects are always decided by students and staff in partnership. Students then act as apprentice researchers, developing a research question, designing and implementing their own methods of data collection and analysis, making evidence-based recommendations or providing solutions for change, and, where appropriate, putting their projects into action. Through the research process, staff act as mentors, with students largely working independently; once evidence has been gained and recommendations made, the approach to bringing about change may become more collaborative, although students maintain a leadership role.

As a more detailed example, students in biosciences identified through a survey that the majority of first- and second-year students struggled with academic writing. They had writing-support sessions led by academics, but these did not come across as tailored sensitively enough for their needs. A small group of students decided to interview staff and students about the exact nature of the writing problems and how the situation might be improved. With this information they produced a detailed guide, “written by students for students,” to academic writing (Bittante et. al 2009). The highly professional-looking guide is available online both locally and for the national biosciences community, and it has been given to first-year students in paper form for two years. The feedback has been extremely positive.

A student-led research project in the business school, where staff members have been piloting a range of technologies, also has had significant impact. Research findings from a student-designed survey and student-led focus groups and interviews highlighted, for example, that three quarters of the 207 student respondents made use of video recordings of their lectures when they had difficulties with understanding content. More than half of the respondents indicated that this was an integral part of their revision process prior to examinations, and international students used recordings to support their language development as well as for learning in the discipline. Students also thought that using an electronic voting system, used for testing knowledge and understanding, kept them focused in lectures, and they appreciated the interactivity it allowed. Such findings have enabled the business school’s staff to be confident in pushing strongly for further use of technology to help students learn. Streamed video is now far more widespread, and 4,000 voting handsets have been distributed to students to take to all classes while studying for their degrees. The drive for educational technology cannot be said to be due entirely to the Change Agents project, but it has played an

important part in promoting change by providing research evidence.

Feedback consistently highlights the students' interest in and excitement about their research, the power they feel that research gives them, and the importance of evidence. As one said:

[The interest comes from] conducting real research into what students actually think and being able to present this information to senior staff in full knowledge that what you're saying is backed up by proof.

As another put it:

Interpreting the results that we got back from the questionnaire was probably the most interesting part [and] contrasted to what I had previously thought.

Students also liked bringing about real change at the institutional level. As one said:

I think the most exciting part of this project has been to see that it is possible to make a change even at such a large institution. Before this project I did not expect it to be possible to make a change, but this has shown me that with a little work and dedication you can make things happen.

Equally important, however, is the influence that the project had on an individual, and on personal growth, reflected in one student's comment:

This project completely changed how I think.

Also of importance is feedback from academic staff members, who can use the student research as evidence of the need for change and more sensitivity to student needs. Said one staff member:

The Students as Agents of Change initiative has revolutionized the way in which we develop tools for learning and teaching and is an excellent way of embedding student involvement through the curriculum.

A report is written in each of the projects to provide a series of case studies and, to date, three student-led annual conferences have shared findings from the projects with staff and students across the university. In addition Students as Change Agents was the theme for the university's annual Learning and Teaching Conference in 2011, helping to cement and embed the concept across the institution, with all concurrent sessions being led by students and an accompanying mentor. The influence of the project continues to grow, enabling the university to respond to aspects of learning and teaching that are of most importance to students.

Discussion

What is apparent from both studies is the importance of the student voice being actively promoted; students in both contexts come up with their own questions and issues to research, and they engage deeply with the research processes. The benefits to the students from being involved in this way were significant in both contexts: Students were excited, took responsibility, and benefited greatly in terms of their own development, acquisition of transferable skills, and growing confidence.

Both initiatives allow students to undertake research on learning and teaching either as part of, or beyond, their degree programs. Students recognize that they will be supported in research processes by expert supervisors or mentors. This research concept with the student voice at its heart is fundamental to the conceptualization of both initiatives and becomes a powerful driver. Students show commitment to research, and the skills and knowledge they gain give them greater confidence and interest in their university study and career choices. At Exeter, a number of participants reported changing their career pathway because of their involvement, with several deciding to continue with research within their education or employment.

Students at Western Australia report increased engagement with the university, the staff, and their fellow students as a consequence of conducting research into teaching and learning. It seems that this is because the students are all researching a common topic and are working in an area with which they are all familiar—teaching and learning is common to all, particularly the first-year experience. They become a community of learners sharing ideas, empowered through community engagement, and driving the program with a common voice. Similarly, Exeter is working deliberately and explicitly to develop ways of working that will support a widespread ethos of collaborative enterprise, with a community of learners who care about their institution and have the opportunities to be deeply involved with improvement of the learning and teaching environment.

Both models provide the potential for institutional learning and reflection, offering their institutions deeper understanding of student needs and interests, and providing real opportunities for them to enhance their students' academic experiences. The impact of that research and how it can be applied to enable changes and enhancement in institutional practice and improved curricula and pedagogy are the specific emphases at Exeter.

Many questions remain, for example, to what extent student-led initiatives really can bring about fundamental change and support student satisfaction on a wide scale; to what extent this kind of involvement can become transformational, with student engagement taking on powerful new

meanings; and to what extent the collaborative emphasis can help to counteract some of the more negative aspects of consumerism and the more strident student demands that may continue to characterize the future of higher education. Both initiatives demonstrate the potential of:

- involving students in research on learning and teaching,
- listening to the student voice in new ways,
- putting students at the center of their educational experiences,
- actively engaging them in what matters to them,
- empowering them in their learning and career choices, and
- offering an opportunity for important institutional learning and possibilities for promoting change.

Both initiatives have been carefully conceived to fit their particular context, but either program could be adapted to suit alternative purposes and institutions across the globe. These adaptations are not without challenges, many relating to the variations and complexities in university cultures and approaches to teaching and learning. Some key factors that any institution wishing to take on this kind of project should consider are:

- having a coherent philosophy and belief that students can be involved in more active engagement with the university as decision-makers, and even drivers of change;
- having structures such as a course or program so that students know how to become engaged in such activity;
- providing funding for student payments or, as at Exeter, for a project co-ordinator, since all student involvement is voluntary;
- having staff expertise to engage students in the discourse and professional ways of working in a pedagogic community, as well as support for mentoring;
- providing incentives, whether through payment or, as is even more important at Exeter since there is no payment, gaining recognition and praise, having a higher campus profile and being known by others; being involved in decision-making with peers and experts; seeing real change take place; taking ownership and responsibility for research; or gaining leadership skills that expand student participants' resumes;
- planning for sustainability. At Exeter, for example, the initiative is expected to expand through its six

colleges, with those units taking greater responsibility and ownership.

Of key importance is that students recognize that their voices matter, that their views will be heeded by program leaders or senior institutional managers, and that their work can have an influence on the experience of their peers, on understanding the institution, and on enhancing the learning and teaching environment for all involved.

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Sue Burkill has been the head of education enhancement at the University of Exeter since March 2008. Her academic background is in geography, and she was the head of geography at the College of St Mark and St John (Marjon) for eight years before making a career change and moving into education enhancement. She was director of the Centre for Learning and Teaching at Marjon (1999-2001) and Head of Educational Development & Learning Technologies at the University of Plymouth (2001-08). Outside the university she is currently co-chair and was recently chair (2009-10) of the Heads of Educational Development Group (HEDG). Sue has research interests in the role played by education leaders and in the development of innovative assessment approaches.

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