



Supporting GEES undergraduates at Ulster through the use of senior student tutor workshops

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Abstract

Undergraduate intake into the School of Environmental Sciences, Ulster comprises students studying honours degree programmes in environmental science, geography and marine science, and students following a two-year non-honours Associate Bachelors degree (ABD) in environmental studies. Longitudinal induction sees first year students interacting with studies advisers and senior student tutors (SSTs) in small group activities. The main aim of these workshops is to help level four students prepare for their end-of-semester, modular examinations. This case study outlines the organisation and rationale for this peer-mentoring scheme and determines its impact upon first year examination performance. Results reveal a positive causal relationship between workshop participation and subsequent success. It is argued that faculty suffering from student progression problems traceable to weaknesses in examination performance could benefit from adopting this locally controlled, low cost, small-scale, peer-mentoring model.

Keywords

Examination assessment, first year students, peer-mentoring, senior student tutors

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I. Introduction

Student-mentoring initiatives have a long history and were embedded in the Peer Assisted Study Sessions (PASS) programme at the University of Manchester, which was based upon the Supplemental Instruction (SI) model pioneered by the University of Missouri-Kansas City in the early-1970s. PASS/SI is an externally franchised and moderated scheme, which recruits pairs of often non-subject specialist students to act as peer leaders. These volunteers organise seminars and help to facilitate student-centred/group learning in an informal environment, often across a wide spectrum of courses. The scheme is focused upon failing modules, utilises feedback from leaders to teaching staff and allows for regular meetings between PASS mentors to share their experiences (Hurley et al 2006). There is a growing body of literature in support of this type of student-to-student intervention (Glynn et al 2006; Ning and Downing, 2010), or what Boud et al (2001: 4) called the process of: “students learning from and with each other”. However, as Parkinson (2009: 381) acknowledged, analyses of the effects of peer-assisted learning (PAL): “in the context of the HE system of the UK and Ireland (remain) relatively sparse”.

Our in-house scheme at the University of Ulster is different but no less ambitious and follows a path based upon constructivist learning theory. Focusing upon high risk assessment procedures (university examinations), it utilises senior student tutors to organise module specific revision workshops. These tutors share their experiences and shape the local learning environment by helping first year students to process information so that they can construct their own knowledge, understanding, revision strategies and exam preparations (Longfellow et al 2008). In so doing, the SSTs look to foster interaction and co-operation between and with different cohorts; establish a strong, inclusive collegial spirit within the School as well as improving the educational experiences and academic performances for mentor and mentee alike (Stout and McDaniel, 2006).

First year students in the SES are enrolled on a range of environmental science, geography and marine science honours programmes, as well as an associate bachelor’s degree (ABD) in environmental studies. They study a common curriculum with six modules containing four examinations taken from earth, physical and social based subject areas, together with a generic academic skills toolbox covering GIS and statistics. Their transition to tertiary level education is supported by induction activities including pre- and post- registration contact sessions and an initial activity period that includes a residential field trip. This transforms into a studies advice tutorial system and a longitudinal focus upon acquisition of personal transferable skills. Generic to all programmes, these include essay writing, referencing techniques, personal development planning, career preparation and oral presentation.

With this background in mind, we set out to analyse the value of using peer-mentors to facilitate the preparation of first year students for their end-of-semester university examinations. Our aim was to determine if the SSTs were having a beneficial effect in an area of perceived weakness: the three-hour, essay writing/multiple short answers assessment.

2. The SST project

As part of our induction process the School employs final year/postgraduate students to take part in peer mentoring activities. Individuals are recruited after a formal application procedure requiring submission of a curriculum vitae and covering letter outlining their suitability for the post. SSTs will have demonstrated good academic performance, are anticipating or have gained high degree classifications and have a sound knowledge and understanding of their subject programmes and taught modules. Crucially, each has at least five semesters of experience of the teaching and learning practice in the School. They act, therefore, as older and nominally wiser tutors. Our SSTs receive a small remuneration and undertake a training programme arranged in association with Ulster's staff development unit. Sessions are focussed upon small-group teaching, which allows each tutor to conduct a series of three, fifty minute-long workshops. With no fixed agendas, sessions can include formative activities such as: revision techniques, planning for examinations, discussion on the role of reading, evaluation of marking criteria, reviews of past papers, formulation of short answer plans, writing of practice essays, and/or discussion of model answers.

The workshops are a smaller-scale and shorter variation on the PASS/SI/PAL schemes mentioned earlier. Our SSTs are subject specialists who can discuss modular/course material with level four students but, more importantly, look to share their own received learning strategies. In an informal environment, they offer hints and guidelines, which they have developed from their own experiences. SSTs are not expected to teach or provide definitive answers but are encouraged to lead level four students to a point where they can construct their own understanding of what is required in their examination preparations. Attendance for first year students is compulsory and sessions are timetabled into the curriculum. Workshops are organised by the SSTs, although support materials, advice, and thrice-semester briefing/training, de-briefing/critical reflection sessions are undertaken in conjunction with the author.

3. Data collection and results

Project evaluation was based upon a mixed-methodology involving both quantitative and qualitative techniques (Tashakkori and Teddlie, 2003). For the purposes of this case study, statistical data relating to progression from level four and covering the reference period from 2006-09 were analysed. Examination results sheets data were compared with attendance records compiled at workshops during the same period. Subsequent rates of success and failure amongst workshop attendees and non-attendees were collated. Investigation focussed upon numbers of examination failures (defined as <40 per cent) and first year module average marks as indicators of performance. Qualitative feedback was received from first year students via an anonymous survey resulting in 68 questionnaires being completed and a response rate amongst workshop attendees (in 2008/09) of 79 per cent. Temporal and logistical constraints meant we were unable to ascertain the views of absentee students, not least because the confidential nature of the research negated their identification.

			Env Science*		Geography*		Marine Science		ABD in Env Studies		School of Env Sciences		Total
			Attendees	Non-attendees	Attendees	Non-attendees	Attendees	Non-attendees	Attendees	Non-attendees	Attendees	Non-attendees	
2006 - 2007	Workshop attendance	n (%)	19 (68)	9 (32)	13 (21)	48 (79)	3 (43)	4 (57)	6 (35)	11 (65)	41 (36)	72 (64)	113 (100)
	Average attendance	ps/3	2.5	0	1.6	0	1.7	0	1	0	1.7	0	
	Exam fails	ps/4	0.3	2	0.4	1.2	2.7	2.5	1.3	2.1	1.2	2	
	First year mod. avge	%	63.9	44.5	55.4	49.5	50.6	31.8	41.3	42.5	52.8	42.1	
2007 - 2008	Workshop attendance	n (%)	9 (43)	12 (57)	36 (56)	28 (44)	0 (0)	13 (100)	10 (77)	3 (23)	55 (49)	56 (51)	111 (100)
	Average attendance	ps/3	1.5	0	1.5	0	0	0	2.3	0	1.3	0	
	Exam fails	ps/4	1.1	1.5	0.4	0.9	0	1.5	1.2	0.3	0.7	1.1	
	First year mod. avge	%	50.0	45.3	57.6	47.0	0	45.3	43.6	46.3	37.8	45.9	
2008 - 2009	Workshop attendance	n (%)	23 (85)	4 (15)	39 (85)	7 (15)	16 (80)	4 (20)	8 (73)	3 (27)	86 (83)	18 (17)	104 (100)
	Average attendance	ps/3	1.8	0	1.5	0	1.7	0	2.5	0	1.9	0	
	Exam fails	ps/4	0.6	2.0	0.2	1.3	0.8	1.0	0.3	1.0	0.5	1.3	
	First year mod. avge	%	53.3	36.3	57.3	41.1	50.0	53.3	59.8	39.0	55.1	42.4	
2006 - 2009	Workshop attendance	n (%)	51 (67)	25 (33)	88 (51)	83 (49)	19 (48)	21 (52)	24 (59)	17 (41)	182 (56)	146 (44)	328 (100)
	Average attendance	ps/3	1.9	0	1.5	0	1.1	0	1.9	0	1.6	0	
	Exam fails	ps/4	0.7	1.8	0.3	1.1	1.2	1.7	0.9	1.1	0.8	1.4	
	First year mod. avge	%	55.7	42.1	56.8	45.9	33.5	43.5	48.2	42.6	48.6	43.5	

* includes combined subjects students;

mod. avge = module average

ps/3 = per student out of 3 workshops;

ps/4 = per student out of 4 examinations

Sources: Attendance registers at workshop sessions/annual Ulster results sheets, 2006-09

Figure I: Attendance at SST Workshops and First Year Examination Performance, 2006-09

Any attempt to establish a concrete relationship between student-to-student intervention and outcome has to be treated with caution (Smith and Norton, 2007: 3), although it is acknowledged that longitudinal studies offer a way forward (Capstick, 2004). Given this caveat, Figure 1 illustrates the relationships between first year attendance, or lack of attendance, at workshops conducted by our SSTs and cohorts' subsequent performances in examinations held between 2006 and 2009. At the School level, we observed a steady increase in overall levels of attendance and in the average number of workshop attendances. First year student audience numbers increased from about 35 to above 80 per cent, and the average number of workshop attendances grew from 1.7 to 1.9 per student. This growth occurred as the scheme became embedded in the practices of the School, as tutor-training techniques evolved and as those students who were mentored became mentors. These positive signs were reinforced by the numbers of examination failures amongst attendees at SST workshops falling from 1.2 per student in 2006/07 to 0.5 per student in 2008/09. In contrast, and in spite of the numbers of workshop absentees having fallen to less than 20 per cent, examination failures amongst this group remained consistently higher. In 2007, an average failure rate of 2 exams per first year student was recorded amongst absentees. Two years later this figure had fallen to 1.3 per student. Nevertheless, and in spite of the failure rate in both groups falling by 0.7 exams per student, workshop absentees were still between two and three times more likely to fail an examination than their attending counterparts. Non-attendees drawn from the environmental sciences programme, for instance, could expect to fail two examinations (out of four), whereas geography attendees only ran a one in five chance of failing an examination.

In terms of module average marks the discrepancy between the attendees and absentees was even more remarkable. By 2008/09, environmental science and geography workshop attendees were recording mean module marks between 16 and 17 per cent higher than their counterparts who had failed to attend any workshops. ABD attendees at 2.5 workshops per student; the highest average attendance recorded, were faring better still, with two degree classifications of marks separating them from the absentees. This was a significant turnaround from one year earlier when ABD workshop attendees had performed worse than the absentees. Equally, marine science students were counteracting the general trend with attendance at workshops (whilst still being a positive experience) having a less marked influence on examination performance. These anomalies can, in part, be explained by yearly variations in terms of the commitment, confidence, inter-personal skills and performances of individual tutors, as well as fluctuations in the overall quality of year-cohorts.

4. Discussion

At face value, there appeared to be a cause and effect relationship between engagement with the peer mentoring scheme and enhanced examination performance. Results showed that, between 2006 and 2009, a non-attendee would suffer almost twice as many examination failures as someone who went to the workshops. The message was straightforward; participate in SST workshops, prepare for exams, reap the academic and financial benefits of gaining higher marks and avoid supplementary assessment requirements.

On reflection, the picture was more complicated. Of note was the finding that amongst workshop attendees, only 16 per cent went to three sessions and the modal level of attendance was just one workshop. Around 50 per cent dipped into the first session and then failed to engage further. Formal feedback showed that this decay effect was due to first year students' prioritising other coursework commitments (accounting for 56 per cent of explanations) and to a lesser extent sickness (16 per cent). Informal comment from the SSTs suggested the lapses were due to a lack of any marked assessment associated with the workshops. Critical evaluation revealed that: "the Senior Student Tutorials ... were ... focussing too much on simple study and revision skills". This meant that a small number of students considered the workshop exercises to be repetitive and/or irrelevant (14 per cent; second highest ranked response to question: 'what was disliked about the scheme?'). This suggested that the examination preparation messages espoused by the tutors were already embedded within first year students prior to their arrival. Anecdotal discussion revealed that some students who started attending workshops and then stopped were amongst the most talented and self-confident members of their cohort. In one sense, they were the epitome of independent learners taking the view that additional workshop attendances would be superfluous to their particular needs.

A second discussion of those attending two/three workshops confirmed that the SSTs were engaging with highly motivated, risk-averse students; conscientious individuals who were responding positively to their tutors. For example, when first year students were asked: 'what they liked most about the SST scheme?' many stated that they enjoyed what was done in the workshops and how it was delivered by their peer mentors. Together in a discursive, group sharing environment, these first years felt comfortable in being able to learn from an older and more experienced individual (18 per cent of responses). Moreover, they liked the less formal atmosphere that was fostered, believing that they had greater freedom to ask questions and discuss examination issues (18 per cent). Above all, being given the chance to practise their answering technique before the real exam took place was judged to be paramount (27 per cent). As a result, first years gained confidence from the scheme, were less intimidated (than in a formal staff-led session) and were empowered with an arsenal of revision and examination techniques, which they could use to their advantage. In this instance, it can be argued that benefits accruing from going to most/all of the workshops were related to study skills being refreshed and reinforced in a formative pattern, thus contributing to successful examination performance.

Whatever the real explanation, it is clear that we face challenges. First, the scheme has to explore ways of embracing the weaker non-attendees (who were drawn mainly from the marine science programme). Second, we have to find a means to improve the rates of extended engagement with all three scheduled workshops, since it is important to reward the diligence shown by senior student tutors in preparing activities. To this end, we have introduced an assessed element based upon a mock examination exercise to encourage participation.

5. Conclusion

There are no major reasons why this type of senior student tutor scheme (operating as part of a broader studies advice tutorial system) cannot be transferred to other faculty in Ulster or beyond. Institutions suffering from progression problems that can be traced to weaknesses in examination performance could benefit. Equally, those seeking to improve collegiality and interconnectedness, within and between different programme- and year-cohorts can benefit from adopting this locally controlled, low-cost, small-scale, peer-mentoring model. Special attention must, however, be given to encouraging attendance and then publicising the inclusive and formative nature of attending all scheduled workshops.

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