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A Systematic Approach to Improving University Teaching

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Abstract

Traditionally the Australian system of higher education has evaluated and rewarded universities on the basis of their research output. In recent years, however, there has been a Significant move to evaluate and acknowledge excellence in teaching. Consequently many institutions have established policies and programs for the improvement of teaching. Centres for staff development, graduate award courses and research programs for research on teaching and learning have appeared in universities across the country (Martin & Ramsden, 1994).

In this context several interesting developments have occurred at the University of Wollongong. First, several initiatives were designed to identify and reward good teaching. These include the creation of the Vice-Chancellor's Award for Excellence in Teaching, the use of teaching performance as a criterion for the annual review process and for tenure and promo~on decisions, and a compulsory program of student evaluations of teaching. Second, a new Centre for Research on Teaching and Learning was established. Third, the course Introduction. to Tertiary Teaching (ITT) was designed and offered to all academic and suitably qualified non-academic staff. This course is articulated into a set of "nested" courses offered by the Faculty of Education, including a Graduate Certificate of Higher Education and a Master of Education degree. Fourth, in 1994 a policy was implemented requiring all new academic staff to complete the ITT course within one year of appointment.

A SYSTEMATIC APPROACH TO IMPROVING UNIVERSITY TEACHING: AN INVESTIGATION OF TEACHER BEHAVIOURS AND ATTITUDES

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INTRODUCTION

Traditionally the Australian system of higher education has evaluated and rewarded universities on the basis of their research output. In recent years, however, there has been a significant move to evaluate and acknowledge excellence in teaching. Consequently many institutions have established policies and programs for the improvement of teaching. Centres for staff development, graduate award courses and research programs for research on teaching and learning have appeared in universities across the country (Martin & Ramsden, 1994).

In this context several interesting developments have occurred at the University of Wollongong. First, several initiatives were designed to identify and reward good teaching. These include the creation of the Vice-Chancellor's Award for Excellence in Teaching, the use of teaching performance as a criterion for the annual review process and for tenure and promotion decisions, and a compulsory program of student evaluations of teaching. Second, a new Centre for Research on Teaching and Learning was established. Third, the course *Introduction to Tertiary Teaching* (ITT) was designed and offered to all academic and suitably qualified non-academic staff. This course is articulated into a set of "nested" courses offered by the Faculty of Education, including a Graduate Certificate of Higher Education and a Master of Education degree. Fourth, in 1994 a policy was implemented requiring all new academic staff to complete the ITT course within one year of appointment.

The purpose of this study is to investigate the perceptions of staff who had completed the ITT course prior to 1995 to determine the impact of the course on their subsequent teaching behaviours and attitudes. This paper includes discussion of the extent to which particular aspects of the course have persisted over time and become part of the teaching repertoire. These include referring to relevant

literature, demonstrating concern for students, attending to personal teaching performance at all stages and becoming involved in professional development activities. Some inferences are made about the impact on attitudes to the course and to teaching generally.

BACKGROUND

Researchers have documented the fact that most academic staff in universities are employed without any formal training or preparation for the teaching role (Dallat & Rae, 1993; Griffiths, 1993; Moses, 1993; Weimer, 1990). They suggest that university staff tend to model their performance on teachers they have encountered during their own studies or take a "common-sense" approach within the constraints of their institutional context (Dallat & Rae, 1993; Moses, 1993; Biggs, 1989). Unfortunately, some do not believe in taking steps to acquire or improve teaching capabilities. Laurillard commences her argument for *Rethinking University Teaching* (1993) by indicating that university teachers must acknowledge the need to revise their approach to the teaching component of their academic role. However Biggs (1989: 15) suggests that "many tertiary teachers, particularly those in the pure or basic disciplines, react quite negatively to suggestions that they should attend courses on tertiary teaching". This perception adds interest to the University of Wollongong policy decisions to establish a course in teaching and learning and compel new staff to complete it. One might reasonably anticipate resistance when highly qualified individuals entering a new institution are directed to complete a comprehensive and demanding course of study, especially if they regard themselves as researchers rather than teachers.

The original ITT course design was based on a comprehensive needs assessment program (Gillett, 1991) and a review of relevant literature. Paul Ramsden's (1992: 96-102) six principles for sound university teaching indicated particular teacher attitudes and behaviours for attention. These included, respect for students and their learning; honesty; humility; an interest in teaching and learning; and a desire to

learn through the process and from the students. Skills emphasised by Ramsden included the ability to explain clearly; to be versatile and interested; to make learning interesting and pleasurable for students; to employ appropriate assessment procedures; and to provide useful, constructive feedback. Brown and Atkins (1988: 5) cited earlier works (McKeachie and Kulik, 1986; Marsh, 1982; Cohen, 1981) in concluding that good teachers should meet the three broad requirements of being "systematic, stimulating and caring". These three attributes of effective teaching were endorsed by several writers in the field (Gibbs, 1992; Hiemstra, 1991; Peters, 1991; Sisco, 1991) and portrayed in terms of specific strategies and behaviours by others (Davis, 1993; Gibbs & Jenkins, 1992; Gibbs, Habeshaw & Habeshaw, 1992a,b,c; Andresen, 1988; Brown & Atkins, 1988; McKeachie & Kulik, 1986). Specific methods, strategies and techniques required by university teachers in the planning, delivery and evaluation of instruction eg lecturing, small group teaching, assessing student performance identified by several writers were selected (Davis, 1993; Newble & Cannon, 1991; Gibbs, Habeshaw & Habeshaw, 1988; 1992, Joyce & Weil, 1986). When combined with the outcomes of the needs assessment, these skills, attitudes and behaviours provided a basis for the first course. They were integrated into the program through a number of themes considered appropriate to the local context eg, needs of overseas and aboriginal students, issues of equity (Ballard & Clanchy, 1991; Brockett, 1991; Hiemstra, 1991; Sisco, 1991). Formative evaluation strategies were employed and appropriate modifications made with each presentation of the program, but the general nature of the course and its activities has remained quite stable.

METHOD

Early in 1995 staff who had previously completed the ITT course (n=63) were surveyed by mailed questionnaire to assess the lasting effects of the program. The instrument was designed to investigate respondents' perceptions of their teaching behaviours and the impact of the course on their teaching performance. It indicated

the time in which the course was completed and whether enrolment had been voluntary or compulsory.

The survey comprised twenty-one 5-point Likert scale items and four open-ended questions. The first set of questions examined the extent to which respondents refer to literature sources relevant to teaching and learning. The next set referred to levels of their engagement in professional activities; the practice, study and discussion of teaching; and the perceived impact of the ITT course upon certain aspects of the teaching role. Finally, such issues as reflective practice and student reactions to teaching were investigated (Table 1). Responses were sought on the five-point scale from 'Very much' to 'not at all' and means and standard deviations per item were computed from 5 to 1 respectively.

Table 1: Formal Questions

#	Since you completed the ITT course..........
1	did you use the set text?
2	did you use the supplementary texts?
3	did you use other similar texts?
4	has your use of educational literature increased?
5	has your interest in staff development activities increased?
6	has your participation in professional development associations increased?
7	have you continued to study your own teaching?
8	has your inclination to discus teaching matters with colleagues increased?
9	has ITT impacted on your teaching behaviours & strategies?
10	has ITT impacted on your preparation for classes?
11	do you experiment more with teaching methods and techniques?
12	do you think your planning skills are better?
13	do you think your teaching skills are better?
14	do you think your skills of assessing student performance are better?
15	do you believe you prepare better teaching resources & materials?
16	do you link assessment strategies to learning objectives better?
17	has your capacity to reflect on your teaching improved?
18	has your level of understanding of student difficulties changed?
19	have you made more contributions to subject designs & revisions?
20	is there perceptible improvement in student evaluations of your teaching?
21	have you achieved higher levels of student engagement in classes?

The open-ended questions were added to the instrument to gather information about the most useful aspects of the course, recommended changes, opinions on the mandate for new staff and other comments.

Analysis of Variance (ANOVA) was performed on the data in order to detect any significant differences in response between the two groups, volunteer and non-volunteer. Responses to the open-ended items were summarised and common trends extracted for reporting. Responses to these questions were clustered into the two groups and aggregated to provide an impression of each group's opinions.

RESULTS

The distribution of respondents over time is presented in Table 2. This indicates that questionnaires were returned by 41 of the 63 staff members surveyed, a response rate of 65.08%. It also reflects the considerably higher numbers of participants in the 1994 cohort when the policy mandate was put into effect.

Table 2: Distribution of Respondents

Year	Volunteers	Non-volunteers	Total
1992	5	0	5
1993	6	0	6
1994	16	14	30
Total	27	14	41

Outcomes were tabulated and the volunteer group rated higher than the compulsory group on all but one item in the questionnaire, the exception being increased participation in staff development activities. An Analysis of Variance (Table 3) identified four items of significant difference (p<.05). The items of significant difference were:

#8: *increased inclination to discuss teaching matters with colleagues* (p<.011)

#13: *improved teaching skills* (p<.008)

#15: *improved quality of prepared teaching resources* (p<.013)

#17: *improved capacity to reflect on teaching* (p<.002).

Table 3: ANOVA for Volunteer and Non-volunteer Participants

| # | Volunteers (27) | | Non-volunteers (14) | | | |
	Mean	SD	Mean	SD	F	P
1	2.78	1.19	2.36	1.34	1.06	.309
2	2.33	1.30	2.00	1.24	0.62	.434
3	2.56	1.09	2.07	1.07	1.85	.182
4	3.11	1.25	2.29	1.27	3.98	.053
5	3.15	1.38	3.29	1.20	0.10	.754
6	2.70	1.41	2.21	1.48	1.08	.306
7	4.41	0.89	4.00	0.96	1.84	.183
8	4.41	0.75	3.64	1.08	7.07	.011
9	4.52	0.75	4.00	0.96	3.62	.065
10	4.44	0.85	3.93	1.00	3.03	.089
11	4.30	0.87	3.79	1.12	2.60	.115
12	4.15	0.66	3.64	1.34	2.65	.112
13	4.07	0.78	3.21	1.19	7.77	.008
14	3.44	1.15	3.00	1.18	1.35	.253
15	4.11	0.58	3.36	1.28	6.84	.013
16	4.00	1.04	3.57	1.09	1.52	.225
17	4.48	0.70	3.57	1.09	10.57	.002
18	3.48	0.85	3.07	1.14	1.69	.201
19	3.56	0.93	3.07	1.07	2.24	.142
20	2.96	1.02	3.00	1.53	0.01	.931
21	3.44	0.85	3.09	1.14	1.11	.298

Differences in the remaining items were not statistically significant. They did, however, suggest that the volunteer group achieved greater gains or held the perceptions that their gains had been greater than those reported by the compulsory group (Figure 1).

Figure 1 Group Means
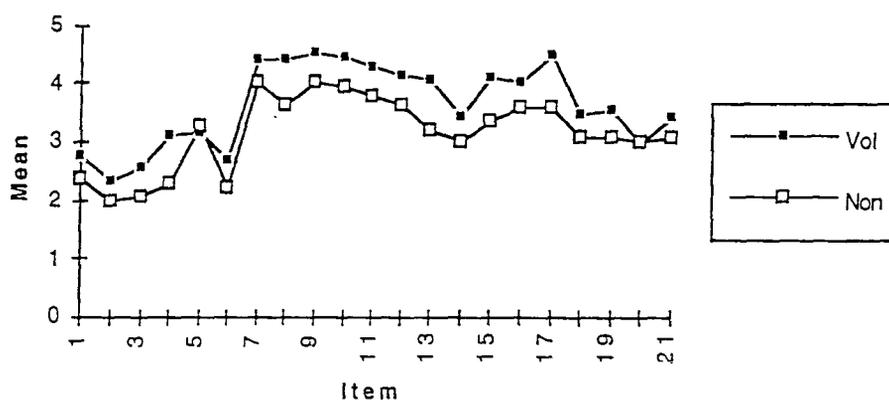
An analysis of the outcomes for the 1994 cohort produced a similar result, as is demonstrated in Table 4. In this case there were significant differences (p<.05) in items 8, 13 and 17 consistent with the outcomes for the whole group. There was also a significant difference in item 4; *use of educational literature increased* by volunteers over non-volunteers (p<.036). However, the original outcome on item 15: *prepare better teaching resources than previously*, was not replicated (p<.056).

TABLE 4: ANOVA FOR 1994 COHORT ON SELECTED ITEMS

#	Volunteers (16) Mean	SD	Non-volunteers (14) Mean	SD	F	P
4	3.12	1.15	2.15	1.21	4.88	.036
8	4.38	0.81	3.62	1.12	4.50	.043
13	4.19	0.75	3.23	1.24	6.63	.016
15	4.19	0.66	3.46	1.27	3.98	.056
17	4.50	0.82	3.62	1.12	6.04	.021

Analysis of responses to the open-ended questions indicated that of the 27 volunteers 18 (66.7%) chose to comment, while of the non-volunteers 50% responded (Table 4). From the former group all comments were positive, while from the latter there were some reservations about the experience. Some of the

volunteer group praised the course presenters (n=9), indicated enjoyment of the experience (n=7), stated the advantages of meeting staff from other faculties (n=2) and indicated satisfaction with learning in a small class (n=1). Many indicated a strong belief that the compulsory program is a good idea for new staff (n=21). Some of the non-voluntary group also expressed enjoyment (n=3), approved of meeting new contacts across campus (n=1), and endorsed the flexibility of presentation (n=1). However a small number suggested the expectations were unrealistic (n=1) the course took too much time and effort (n=2) and resulted in very little learning (n=1).

The higher proportion and positive nature of responses from the volunteer group indicated that positive attitudes to the course were retained over time. On the other hand the lower response rate and mixed nature of comments from the non-volunteers seems to reflect a less positive attitude for this group.

DISCUSSION

The results suggest that the ITT course had a stronger impact on voluntary than on non-voluntary participants. This was true for the whole group and for the 1994 cohort, where a considerable number of participants were non-volunteers. The specific items where significant differences were established (8, 13, 15, 17) related closely to the principal tasks of the course: keeping a journal, experimenting with teaching under direct observation, engaging in reflective practice, reviewing a curriculum and compiling a portfolio. This implies that volunteers dedicated themselves more fully to the tasks of the course and perceived considerable personal gains. In particular, the capacity to reflect on their teaching, an issue being pursued in a separate paper (Bell & Gillett, 1996), was perceived to be more fully developed by volunteers. They also appeared to be much more confident of their acquisition of teaching skills and more inclined to discuss teaching matters with professional colleagues. They felt that their ability to prepare better quality teaching resources and materials had improved and that their interest in reading educational literature had increased. Within the course operation many participants developed quite

sophisticated technological support systems such as Powerpoint programs, as well as handouts and overhead transparencies, so it is interesting to note a significant difference between groups on this item. It seems that volunteers were more likely to explore possibilities and devote the necessary time to develop high quality resources.

The profile of results in Figure 1 indicates for both groups lower perceptions of personal application and achievement in items 1-6. This suggests that the impact of the course was weaker in the areas of using literature sources and participating in subsequent professional development activities. The one exception seems to be in the non-volunteer group where participation in staff development activities actually increased after completion of the ITT course (#5, Mean = 3.29). This was the only item where this group rated higher than the volunteer group. Since these data were analysed the importance of the literature has been further emphasised in course presentations.

Another area of interest in the profile is the section covering items 18 to 21. Respondents perceived moderate changes in their ability to understand student difficulties (#18), to engage students actively in learning activities (#21) and to make contributions to curriculum development (#19). They did not observe substantial improvements in student evaluations of their teaching (#20) but these results may have been distorted by missing data due to the fact that many respondents had not been evaluated in the period under consideration. These outcomes hold implications for future course revisions, especially in the areas of teacher-student communication and the development of a caring attitude.

In consideration of items related directly to teaching (#7-13 inclusive), the volunteer group perceived considerable increases in their level of their own performance. They were less convinced of any improvements in their ability to assess student performance. This area probably needs clearer focus and greater attention in the presentation of the course. Normally it is presented towards the end of the program and the tendency has been to allow an overflow from topics treated earlier to erode

the time actually spent in this important area. While the non-volunteer group rated lower than the volunteers on the teaching related cluster of questions, this area still represented the greatest gains in perceived performance for this group.

The results suggest that perceptions of improved personal performance are lower for non-volunteers than for volunteers. In some areas, attitudes may be inferred from stated perceptions of achievement or capability. For example, if respondents indicate that they frequently discuss with colleagues ways to improve their teaching, one might reasonably infer a positive attitude to the teaching role. In addition, if they indicate a perception that they have an improved capacity to reflect on their teaching, one might infer that they actually practise reflection and therefore have a positive attitude to teaching. Biggs (1989) suggests that non-voluntary participants might be expected to enter the course with negative attitudes. Brundage and Mackeracher (1980) argue that if learners perceive themselves as victims of external forces over which they have no control they are less likely to participate effectively in the learning enterprise. Therefore, attitudes brought to the course by non-volunteers might impede their application to and progress through the program. This could result in a comparative impairment of their potential to improve, an effect which could at least partially explain the levels of difference between the two groups in this study. The perception of non-voluntary participants is that they have increased their capabilities moderately in some areas. It may be that their dedication to improvement is not so strong as that of the volunteer group.

One implication for the design of a teacher preparation course for university teachers is that the attitudinal needs of participants must be considered just as carefully as their need to acquire and refine teaching capabilities and communication skills. Activities and presentation formats must be carefully designed, selected and facilitated for the promotion of positive attitudes towards teaching, reflective practice and student learning in the university.

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