Michael Jackson, PhD*

Institute for Teaching and Learning

University of Sydney

Sydney, NSW 2006

Australia

m.jackson@econ.usyd.edu.au

Fax 61 2 93513624

Telephone 61 2 93512055

Approaches to Teaching and Students' Perceptions of Teaching

Michael Jackson*

Institute for Teaching and Learning

University of Sydney

Sydney, Australia

Abstract

These pages report an empirical study that matches teachers' approaches to teaching with students' perception of good teaching. The teachers' approaches to teaching are derived from a survey of teachers in a major faculty using the questionnaire developed by Prosser and Trigwell, while the students' perceptions of good teaching are taken from the Course Experience Questionnaire, a national instrument used in Australia to assess degree programs. On the one hand the unit of analysis is the department and on the other it is the field of study. Care was taken to relate the two. Among the findings are (1) departments do have distinctive approaches which students perceive, (2) approaches to teaching are not related to any obvious demographic characteristics of respondents like rank or experience, and (3) the major scales of Information Transfer and Teacher Focused versus Conceptual Change and Students Focused are vindicated. Overall, students' perceptions of teaching are related to the evaluation they make of degree programs.

Introduction

Do teachers' approaches to teaching relate to students' perceptions of teaching? This small study sheds light on that question by comparing the results of a survey of

approaches to teaching in the Faculty of Economics at the University of Sydney, a large, public, and comprehensive Australian university, with students' perception of Good Teaching on the Course Experience Questionnaire aligned to fields of study in the faculty. To anticipate what follows, there is an echo between approaches to teaching and perceptions of good teaching.

The Course Experience Questionnaire is an Australian national survey of all graduates. "Course" refers to degree program. Among its several indices is the Good Teaching Scale consisting of these items:

1. The teaching staff of this course motivated me to do my best work,
2. The teachers put a lot of time into commenting on my work,
3. The staff made a real effort to understand difficulties I might be having with my work,
4. The teaching staff normally gave me helpful feedback on how I was going,
5. My lecturers were extremely good at explaining things, and
6. The teaching staff worked hard to make their subjects interesting.

For more details on the Course Experience Questionnaire see Paul Ramsden (1991 and Richardson 1994 and Wilson 1997).

Michael Prosser and Keith Trigwell (1999) developed the "Approaches to teaching" instrument. While it has been used extensively (Prosser, Trigwell et al. 2003), electronic literature searches on Web of Science and Expanded Academic Index show that it has not been applied to Course Experience Questionnaire results. The "Approaches to teaching" instrument has indices concerning strategies (which are sometimes called goals, aims or intentions) and tactics (sometimes called means). As in chess, I use "strategy" and "tactics" to distinguish between the end – strategy -- and the means to that end -- tactics. Strategies are the goals that

teachers say that they have in teaching, while tactics are what they report that they do to further those goals. Tactics may extend beyond approaches to teaching in the classroom, for example, socializing with students outside the classroom, or individual interviews but class room teaching is the core. By combing the Course Experience Questionnaire results with a survey of "Approaches to teaching" we can compare what teachers say of teaching with what students say of that same teaching.

The Study

I modified the "Approaches to teaching" instrument slightly to place less stress on the final examination in order to make it more congenial to social science teaching, where the essay is a common assessment task. "Assessment" here refers to the assignments – essays, reports, examinations, field reports, and the like – students submit for grades. The questionnaire consisted of twenty-nine data items divided into six indices. Preceding these indices were six demographic questions about the respondent.

The questionnaire went to the academic staff of the Faculty under a covering letter explaining the project as one of self-evaluation. The faculty consisted of six departments with a teaching staff of one hundred and twenty-five. There were sixty-three responses. At the time, the Course Experience Questionnaire was new, and only a cursory comparison could be made. Now, in retrospect, a more thorough analysis is possible.

A. Participants. The sixty-three respondents fit the faculty profile by rank and department. In Table One below the profile for the faculty is on the left and the respondents on the right.

Table I. Responses by academic rank compared to the faculty profile in percentages

Level	Faculty N=125	Survey N=63	Difference
Associate Lecturer	25.6%	29.2%	+3.4
Lecturer	22.4	23.8	+1.4
Senior Lecturer	27.2	25.4	-1.8
Associate Professor/Reader	16.8	15.8	-1.0
Professor	8.0	13.0	+5.0
Total	100%	100%	

(A note on terminology. Australian academic ranks do not map perfectly onto American terminology. Career rank is Senior Lecturer. Promotion to associate professor depends on outstanding achievements. At the time of this study there was no promotion to professor. There were one or two professor appointed to each department, depending on the size of the department. The generic term is "lecturer.")

The only point of substance in Table I is that eight of the ten professors in the faculty responded, giving this small group over-representation.

Respondents also matched the faculty as a whole. The faculty has three large departments (One, Two and Three) and three small departments (Four, Five, and Six). The response rate by departments is in Table Two below. The overall response rate was fifty percent.

Table II. Responses rates by departments comprising the Faculty.

Department	Percent
One	61.5
Two	45.2
Three	51.7
Four	60.0
Five	42.8
Six	44.4
Overall	50.0

From Table II it seems safe to say that the participants in this study, comprising half of the faculty and about half (between 40 and 60%) of each department, are typical of the Faculty.

B. The Instrument. The demographic questions that the instrument asked included level of appointment, the number of years of teaching, personal commitment to teaching, and an indication of the degree to which they thought teaching was highly valued in their own department. These items provided independent variables for some analysis, along with department membership. Respondents were urged to add marginal comments wherever they wished, and a number did so. In addition, when returning the questionnaires two included cover letters. Between these two there stretched a continuum: One was steeped in suspicion of the "voodoo pedagogy" and the other waxed enthusiastic about the stimulating questions. Both letter writers were professors.

Respondents were also asked to concentrate on one teaching assignment while completing the questionnaire. The overwhelming majority of these assignments were undergraduate lecturing and tutoring. An Australian tutorial is akin to a discussion section, not an Oxford University individual tutorial.

The main indices on the instrument divide into strategies and tactics, as rehearsed above. One central hypotheses of this research is that certain kinds of strategies are related to certain kinds of tactics. Each of two strategy indices was matched with a tactics index.

i. Strategies. The intentions scales were "Information Transfer" and "Conceptual Change." What strategies do these scales indicate?

Contrast a teacher's goal of transferring information against promoting conceptual change: If a teacher's goal is to transfer information to students then the teacher will reply positively to questions that place responsibility on the teacher to collect, prepare, and present information as end in itself without any further reference to use by or meaning to students.

In contrast, a teacher who intends to promote conceptual change in students will agree more often with questions that take the content to be open-ended, that assume students have useful knowledge, and, more generally, that place responsibility on the teacher to structure experiences for students rather than to present ever more information.

A teacher who answers questions on one index positively will do so on the other. Indeed if they did, it would undermine the conceptual distinction between approaches to teaching. Of course, there may be some overlap, but there should be more differences between the indices than within them, a point to bear in mind later.

ii. Tactics. The two tactical indices are “Student Focus” and “Teacher Focus.” They are matched to the two strategic scales. Answering questions on the “Teacher Focus” scale positively emphasize the teacher's responsibilities, and makes the teacher the centre of the class room. The chief discharge of that responsibility will be information transfer.

To respond positively to the “Student Focus” scale is to affirm that students need to generate their own notes, learn to be self-directed, be treated as individuals, engage with the material, and the like. The goal served by these tactics is to promote conceptual change in students.

Table III. Summary of Strategy and Tactics

Strategy	Tactics
• Information transfer	• Teacher focus
• Conceptual change	• Student focus

As with the strategic scales, it is unlikely that those who respond positively to the items on one scale will respond positively to the other. Accordingly, we expect the differences between the indices to be greater than the differences within them. With this groundwork the argument proceeds.

Hypotheses

The hypothesis is that these two indices in each scale will be closely related because a teacher strategically set on information transfer will adopt teacher focused tactics to achieve that goal, while a teacher whose strategic goal is conceptual growth will find a student focus more effective.

Within the unexamined conventional wisdom, one article of faith is that the lecture is for the teacher (to present information, termed by one respondent to this survey as `a Shakespearian monologue') and the tutorial is for the student. This position is as well fortified as the Maginot Line. According to this line, a teacher with lecturing duties and no tutorials must be Teacher Focus of necessity. A handful of respondents took to this determinist redoubt in marginal comments. The words of Pierre Bourdieu come readily to mind when in another context he noted that professors “rejection of effective teaching practice [is] … armed with all the certitudes and all the blindness of cultural ethnocentrism” (Bourdieu, Passeron et al. 1994).

However evidence abounds that the lecture room can be a place to focus on conceptual growth and on students (see Jackson and Prosser 1985; Jackson and Prosser 1989). Suffice it to say that many lecturers’ strategy in the lecture hall is conceptual change and they adopt student-focused tactics to promote that end (Andresen. 1988). It is equally apparent that a great many tutors do all the talking with small groups of students around a table. As a student told other researchers: “in most classes you sit quietly around a table and get lectured at” (Walker and Warhurst 2000). It was ever thus, the teacher does the talking even in tutorials (Powell 1973). But the underlying contention here, made plain, is that the number of students in the room is less important than what they are doing (in response to the teacher’s tactics) and why they are doing it (to achieve the teacher’s strategy).

The Analysis

The analysis begins with the reliability of the scales. To signal what follows, the tools were loose in the handles, but they still gave purchase. That is, the reliability was not high, but high enough in Table IV.

Table IV. Reliability Scores for the Indices

	Alpha	Standardized
Conceptual change	.49	.50
Information transfer	.49	.60
Student focus	.63	.63
Teacher focus	.52	.56

More reliability appears when the related strategy and tactics indices are combined to create two major scales in Table V. These two scales are “Information Transfer and Teacher Focus” (ITTF) and the second is “Conceptual Change and Student Focus” (CCSF). The hypothesis is supported by these findings.

Table V. Reliability Score for the Major Scales

Scales	Alpha	Standardized
Information Transfer and teacher focus	.69	.69
Conceptual change and student focus	.67	.73

Moreover, a correlation study using Pearson's ‘r' showed that the major scales are as highly associated as predicted. “Conceptual Change” correlates positively (.50) with “Student Focus,” and negatively with “Information Transfer” (-.24) and “Teacher Focus” (-.20). “Information Transfer” correlates positively (.57) with “Teacher Focus,” and negatively with “Conceptual Change” (- .24) and “Student Focus” (-.28).

A factor analysis confirmed these affinities. “Conceptual Change” constituted one factor with “Student Focus,” accounting for 51.4% of variance while “Information Transfer” with “Teacher Focus” was another, accounting for 25.5%.

The demographic variables were also examined through a correlation study, using Spearman's ‘rho'. First, among these independent variables, a higher level of appointment correlated strongly (.70) with an increased number of years of teaching. That much would seem obvious, but it does confirm the honesty of responses. Agreeing that teaching was valued in the department was negatively correlated with the number of years of teaching (-.26) and a senior appointment (-.34). The more senior and long serving members of the academic staff were less likely to say teaching is valued than more junior colleagues.

There were no associations worth noting between the independent variables and the four indices, either taken separately or when combined into the major scales, with one exception. Those who agree that they are highly committed to their teaching and those who agree that teaching is highly valued in their department are just as likely to concentrate on “Information Transfer” as “Conceptual Change” and to have a “Teacher Focus” as “Student Focus.” It seems a teacher focused teacher may or may not value teaching highly.

Finally, a one way analysis of variance shows that the department is an explanatory variable. The difference between departments was greater than the difference within departments for each of the major scales. Where the department response number was small, I examined the range and standard deviation to evaluate the means and found it to be minimal. For “Conceptual Change” and “Student Focus” the F ratio is 4.78, while for “Information Transfer” and “Teacher Focus” it was 3.56. The scales are all positive. The larger the number up to five, the more the quality is manifest. A score of 4.5 on “Teacher Focused” means an individual is more “Teacher Focused” than someone scoring 3.5 or 2.5.

The pattern in Table VI repeats a common distinction between science and arts where the former is more focused on information transfer than the latter. Departments Three and Five are together at the arts end of a continuum in the faculty, while the others One, Two, and Four are at the science end. Members of each department would happily concur with that interpretation. The last department, Six, is at the Humanities end, but that is not borne out in these data, perhaps because of its small size.

Table VI. Means of Minor Indices

Department	N	CC	SC	IT	TF
One	16	3.44	2.99	3.10	2.58
Two	19	3.52	3.00	2.88	2.21
Three	15	3.98	3.65	2.44	1.99
Four	6	2.86	2.60	3.86	2.83
Five	3	4.11	2.93	3.17	2.80
Six	4	3.38	2.50	2.92	2.32

F Test		4.24	3.27	3.03	2.59
Sign		.002	.011	.016	.035

Where CC represents “Conceptual Change,” SF is “Student Focus,” IT is “Information Transfer,” and TF is “Teacher Focus.”

We can now examine the scale against departments set out in Table VII.

Table VII. Major scales

Dept	N	CCSF	ITTF
One	16	3.23	2.81
Two	19	3.13	2.63
Three	15	3.84	2.25
Four	6	2.73	3.09
Five	3	3.52	2.98
Six	4	2.93	2.68
F Test		4.78	3.56
sign		.001	.007

Where CCSF is “Conceptual Change” and “Student Focus” and ITTF is “Information Transfer” and “Teacher Focus.”

The department means for “Conceptual Change-Student Focus” ranged from 2.7 to 3.8. For “Information Transfer-Teacher Focus” the range is 2.2 to 3.3. Since three of the six departments are small, and participants from them comprise an even smaller number, they were deleted from a second analysis of variance. Only the three larger departments were considered in this analysis. Again the difference

between departments exceeds that within departments confirming the existence of a pattern beyond chance. This difference is indicated by the range of means from 3.2 to 3.8 for “Conceptual Change and Student Focus” and 2.2 to 2.8 for “Information Transfer and Teacher Focus.”

We now turn to the comparison with the Course Experience Questionnaire. We examined all the teaching scales: good teaching, clear goals, approaches assessment, appropriate workload, generic skills, and overall satisfaction. The most divergence is on the “Good Teaching” scale and some on the “Appropriate Assessment” scale. We continue to concentrate on the larger departments and another which had the most extreme scores on “Information Transfer and Teacher Focus” and “Conceptual Change and Student Focus.” Accordingly, we will concentrate on the “Good Teaching” scale with some remarks about the “Appropriate Assessment” scale. The two scales are presented in Table VIII.

Table VIII. Good Teaching from the Course Experience Questionnaire.

Course perceptions												
	One			Three			Two			Four		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Good teaching	130	-2.32	15.02	36	16.45	12.67	42	-4.57	15.86	13	3.03	16.57
Appropriate assessment	130	19.32	14.2	36	47.26	16.20	42	22.32	16.15	13	31.90	18.04

Some qualifications apply. The student response rate varies greatly from department to another. The larger departments have more graduates completing the Course Experience Questionnaire, but even so there are differences among them. As with any empirical study there are many details of context. (1) Department Two was divided into two sub-groups with distinct majors and the one without a direct comparison with other departments on the Course Experience questionnaire was deleted from this analysis. They divided a few years later. (2) Relating department to fields of study on the Course Experience Questionnaire is not automatic. I matched students' majors carefully with fields of study, and in one case, excluded one well subscribed major taught inter-departmentally because it did not match a field of study on the Course Experience Questionnaire, which partly explains the smaller results for Departments Three, Five, and Six which were partners in it. Here as throughout there is much noise in this data, but there is nevertheless also signal.

In Table IX, by reading the "Information Transfer and Teacher Focus" and "Conceptual Change and Student Focus" means together with the means on the Course Experience Questionnaire scales of "Good Teaching" and "Appropriate Assessment," we see the signal. Reading down the mean columns shows the pattern.

Table IX. Comparison of Approaches to teaching and perceptions of good teaching.

	One			Three			Two			Four		
Approaches to teaching												
Scales	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Information Transfer/Teacher	16	2.81	.56	15	2.25	.68	16	2.63	.62	4	3.09	.28

Focused												
Concept Change/Student Focused	16	3.23	.53	15	3.84	.45	16	3.13	.57	4	2.73	.34
Course perceptions												
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Good teaching	130	-2.32	15.02	36	16.45	12.67	42	-4.57	15.86	13	3.03	16.57
Appropriate assessment	130	19.32	14.2	36	47.26	16.20	42	22.32	16.15	13	31.90	18.04

Departments oriented to “Information Transfer and Teacher Focus” rather than to “Conceptual Change and Student Focus” score lower on the “Good Teaching” scale than the one department with the lowest score on “Information Transfer and Teacher Focus” and higher on “Conceptual Change and Student Focus.” That is shown in departments One, Three and Four in contrast to department Two. The same is true for the appropriate assessment scale. The joint Australian Vice-Chancellors’ Committee and the Graduate Careers Council of Australia’s Code of Conduct for using the Course Experience Questionnaire says differences that exceed more than half of the standard deviation are noteworthy. These differences pass that test.

Conclusions

Three signals can be heard through the noise in this empirical study: First, and most important, departments count both for staff and for students. While most teachers feel that through their skin, this information is valuable confirmation. The most significant distinction in this study is the difference among departments. Students

have noted in other research that departments often have a coherent and readily perceived approach to teaching (Bain and Thomas 1984; Entwistle and Tait 1990; Lizzio, Wilson et al. 2002; David 2004). This study offers another small brick in the wall to support that conclusion.

Some may claim that the differences on the "Good Teaching" scale are due to the features of different fields of study, and so horizontal comparisons cannot be made. Yet a review of the Course Experience Questionnaire results for the comparable fields of study at like universities revealed a range of results, and so does not *prima facie* support the assertion of a field of study effect. Specifically, the scores on the "Good Teaching" scale for fields of study matched to Department One were greater within like departments than between different departments above in Table Eight. That being the case, no further analysis was justified; however, the invitation remains for further research on field of study effects. For the moment it suffices to distinguish department cultures in context from field of study effects in the discipline in general. That means there are consistent differences in how students perceive teaching in fields of study like physics versus economics, and there are also difference in how students perceive different departments of economics.

Second, strategies and tactics in approaches to teaching are not associated with level of academic appointment or length of teaching experience. A crusty professor is as likely as a callow associate lecturer to intend "Conceptual Change" and to pursue it through a "Student Focus." Equally, a lecturer is as likely as an associate professor to intend "Information Transfer" and to embrace "Teacher Focus." This is encouraging news for those who wish to promote the approaches to teaching that stimulate conceptual change and are student focused.

Third, the major scales of “Conceptual Change-Student Focus” and “Information Transfer-Teacher Focus” are again confirmed. They are powerfully and consistently associated along their axes. Moreover, they exist on different planes so that to score high on one predicts a low score on the other, and that is shown in this study.

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