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Experiences in Developing an Agricultural Business Curriculum

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Introduction

This paper discusses curriculum development issues in the context of the author's recent experience at Massey University. However, the exercise involved surveys of other teaching programs, employers and employees, and consultation with visiting experts. It is hoped that this paper will provide insights to teachers and administrators at other institutions.

Massey has a relatively long history of teaching agricultural business. The Business Faculty, which now dominates the University, grew out of the Department of Agricultural Economics and Farm Management in the early 1970s and the first business degrees were agriculturally related. In 1984, it was decided to initiate a review of agricultural business teaching. This exercise, which was completed in 1987, included surveys of employers and employees, an investigation of agribusiness teaching programs in the USA and visits by two American professors. A workshop on agribusiness teaching was held in November 1986 and, early in 1987, a development plan was submitted for agribusiness teaching in the University. In 1987, the Department of Agricultural Economics and Business lost three (out of five) staff by retirement, resignation or transfer. Two of these positions are presently (April 1988) being advertised as a Chair and Senior Lectureship in Agricultural Business.

Two definitions are required. Firstly, "agribusiness" includes farm production,

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the supply of farm inputs and the processing and marketing of agricultural products (Woolverton *et al* 1985). Secondly, "curriculum" is defined to include establishing educational objectives, program content and teaching method (Gabb 1985).

Carrying out the Review

The review process was as follows:

- 1985 Mail survey of employees of agribusiness firms and government departments.
- 1986 Survey of agribusiness teaching programs in the USA
Personal interview survey of agribusiness employers
Consultation with visiting expert
Agribusiness teaching workshop
- 1987 Submission and consideration of strategic plan for the development of agribusiness teaching.

The methodology used, and the results of each of these activities will now be discussed.

Mail Survey of Employers

The survey was carried out by an M.B.A. student (Miller, 1985). Questionnaires were sent to the personnel officers of 88 agribusiness organisations (firms, producer boards and government). They were asked to distribute the questionnaires to "lower to middle management or selling staff" as randomly as possible. Of the 781 questionnaires sent out, 312 (40 per cent) were returned. Most respondents (61 per cent) were in the 25-39 age group and 46 per cent of them were university graduates or diplomates. (A surprisingly high figure, possibly suggesting some sort of response bias.)

Fifty-five per cent of respondents said it was "very probable" to "almost certain" that they would seek further career related education. The likelihood of enrolment did not differ significantly between categories of employing organisations or the positions held within these organisations.

Respondents who were currently in positions in accounting, marketing,

personnel and manufacturing would prefer to enrol for courses related to their jobs rather than unrelated areas. Those in technical positions preferred to enrol for courses unrelated to production, research and agricultural technology. The preferred subjects were personnel management, computing and information systems, and marketing. The (strongly) preferred educational mode was short courses followed by correspondence (Massey is the major extramural teaching university in New Zealand).

In summary, the survey showed that a significant proportion of respondents (40-60 per cent) would seek further career-related education provided they did not have to leave their present employment to do it.

Personal Interview Survey of Employers

Personal interviews were conducted with senior executives, usually at the chief executive officer or deputy level. We were seeking a longer-term perspective, rather than the shorter-term view that would be expected from middle management. The interviews were conducted at a time when, due primarily to policies implemented by the Labour Government elected in 1984, New Zealand agribusiness was economically depressed and in a state of rapid change.

Employers were aware that the rapidity of change implied a need for further training of existing staff (for example, the Ministry of Agriculture and Fisheries where research and extension activities were being "commercialised" at a rapid rate). This implied an immediate need for short, and extramural, courses.

As far as employment of graduates is concerned, organisations position themselves somewhere on a continuum ranging from those who recruit graduates for specific technical or professional qualifications (accountants, engineers, scientists) to those who care little what degree a recruit has, as long as he or she has one (IBM, Ministry of Foreign Affairs, Dairy Board). The latter type of employer is usually more concerned about the

student's academic performance and general personal characteristics than the former.

The first employment of agricultural and horticultural graduates has usually been towards the "professional" end of the continuum. As professional graduates advance in their careers they use their university training less and other skills more. Three general categories of agricultural/horticultural employment were recognised: Specialist/scientific; Generalist/advisory; and "Industry".

The first two categories are well recognised by both employers and the University. (One employer commented that, with an increasing proportion of graduates being generalists, it was difficult to recruit people with the required depth in a specific discipline.) "Industry" employers may seek graduates for their qualifications as scientists or advisers, but they also require people who have a mixture of scientific/technological, business and personal skills. In fact, most employers were in this category. As far as the science/technology side is concerned, employers were seeking an understanding of scientific principles rather than technological detail. Understanding the application of these principles to

technology other than agricultural production (e.g. food and fibre processing) was also needed. A similar viewpoint was expressed in relation to the "business" component; i.e. an appreciation of what business is about rather than detail.

We did not discuss the detail of programs and courses. Some thoughts expressed on employee attitudes and competencies were: a positive attitude towards business and its objectives; ability to recognise change, manage change and personally adjust to the pressures of change; and organisational loyalty. Particular management skills sought by employers were: financial management, marketing management, "people management" (ability to "get along with" other people, lead, motivate, delegate and understand stress management).

Survey of U.S. Agribusiness Teaching Institutions

Eight universities with undergraduate and/or graduate agribusiness programs were visited in 1985 and 1986. Enrolments in U.S. Schools of Agriculture have declined significantly since their peak in the mid-1970s. Within this overall trend, the agricultural sciences showed the greatest decline, while enrolments in agricultural economics and agricultural business increased by 61 per cent (between 1975 and 1984) with the result that agricultural economics/business enrolments increased their share of total agricultural enrolments from 11 to 18 per cent (Blank 1985).

U.S. undergraduate curricula include a significant component of "general education"—usually about one-third. In all agricultural majors, there is less specialisation than in Australasia. A breakdown of the "average" agribusiness major is given in Table 1.

This table shows that there are wide variations in curricula between institutions. These differences reflect the varying needs of employers and, to some degree, variations in the backgrounds of students entering the program.

In many cases there were only marginal differences between agricultural business and agricultural economics programs. This

Table 1: Average Quarter Unit Requirements in Agricultural Business Programs, 1984-85

	Average	Percentage of total	Percentage of schools with:	
			0 quarter units	≥9 quarter units
English writing	10.02	7.7	—	—
Speech/Rhetoric	4.38	3.4	—	—
Computer science	4.08	3.1	—	—
Calculus	3.80	2.9	35	9
Intermediate micro-economics	3.86	3.0	—	—
Intermediate macro-economics	2.38	1.8	48	n.a.
Statistics	4.70	3.6	9	6
Natural science	16.65	12.8	—	—
Social science and humanities	19.23	14.8	—	—
Agriculture	17.48	13.5	12	88
Agricultural economics	34.36	26.5	—	—
Accounting	8.68	6.7	3	24
	149.62	100.0		

Source: Carman and Pick (1985)

reflects the origins of agricultural business teaching as an extension of traditional agricultural economics programs. Innovative and successful agribusiness programs are often located at institutions which do not have a strong history of agricultural economics teaching (CalPoly, Santa Clara, Arizona State).

It was apparent from visiting different institutions that the success of agribusiness teaching programs (as defined by enrolments, graduate placement and performance in national competitions) was related much more to the way the program was managed than the specifics of the curriculum. The important dimensions of program management appeared to be:

- the commitment of staff to the development of students as individuals. In this context, the role of the student adviser is particularly important;
- the leadership and "people-management" abilities of department heads and deans;
- the extent to which the department, faculty and university as a whole have clearly established objectives;
- recognition of teaching ability, the use of various methods of teacher evaluation, and rewarding good teachers in appropriate ways—not only financially, but also in terms of teaching awards *etc*;
- alumni relationships. U.S. universities use their alumni much more than New Zealand universities as financial contributors, as a sounding board for curricula developments and as a major source of graduate employment;
- encouraging active student clubs and societies;
- active participation, at the departmental and individual staff member levels, in graduate placement activities.

Consultation with Visiting Experts

We were fortunate to be able to organise a four-month visit by Dr Charles French,

Director of the Institute of Agribusiness, Santa Clara University. Dr French visited a wide range of agribusiness institutions and held discussions with students and staff at all levels in the University.

The culmination of his visit was a paper presented to a Faculty Workshop on agribusiness teaching (French 1986). Dr French expressed concern with the degree of specialisation and inflexibility of Massey's established programs and argued that:

The quality of professional education must be judged by the *richness of a mixture* of traditional academic education and more career type education, the quality of which is generally enhanced by interaction with the professional community using such education. (emphasis added).

He emphasised breadth of curriculum, quality control of raw materials (incoming students), teaching both analytical and personal skills (leadership, communication and people management), establishing procedures for quality control of the product (outgoing students) and the critical importance of institutional commitment.

Submission and Consideration of Development Plan

A development plan for agribusiness teaching was submitted in February 1987. The recommendations were based on the conclusions from the activities described above which, in summary, are:

- (1) The U.S. experience suggests that the decline in enrolments in established agriculture and horticulture programs, which began in 1984, would continue and that agricultural business enrolments could, in part, compensate for this decline.
- (2) Depending where they are positioned on the professional-generalist continuum, employers seek a wide range of types of graduates. At the "professional" end of the continuum it is possible to design a tightly prescribed competency-based curriculum. Agribusiness however, sits somewhere in the middle of the continuum and a more flexible program is appropriate. A very

common response from employers is that they wanted a "balance" of technology and business but it is very difficult to quantify exactly what the balance should be. A flexible curriculum content, together with continuing activity monitoring graduate performance in the workplace and an active student counselling program, appear to be an appropriate curriculum development philosophy (*cf.* French 1986, and the survey of U.S. teaching institutions). The implication for Massey was that both the science-based agricultural and horticultural degrees, and business degrees and diplomas should be made more flexible. There is the problem of developing a critical mass in any disciplinary area but the survey suggested that this was more of a problem to academics than it was to employers.

- (ii) Agribusiness employees seek educational opportunities that do not require them to leave their jobs—*i.e.* short courses and extramural programs. There was a very positive response to the idea of an agribusiness endorsement in the Diploma of Business Studies (an undergraduate Associate Diploma) with extramural as the strongly preferred mode of study.

The development plan proposed using established papers in the Faculties of Agriculture, Technology (including Food Technology) and Business with an integrating sequence of agribusiness papers. Student number and resource requirements projections were presented.

There was never any formal response to the plan by the Dean or Vice-Chancellor. The Dean has certainly been publicly supportive of developing agribusiness teaching (for example Anderson 1987). Faculty responses were mixed. Pragmatic faculty members recognised the necessity to reverse or slow down the decline in student numbers, while others saw their discipline declining in popularity *vis à vis* business subjects if students were given more choice within established programs. The Professor of Soil Science said in a Faculty meeting that a new horticultural

degree was being "hijacked by business".

The delay of nearly a year in implementing the staffing recommendations of the Development Plan reflects a fundamental administrative problem. The decline in student numbers in the Agricultural Faculty, together with the fact that the overall increase in Massey's enrolment was significantly less than projected, meant that, under a formula-based funding system, the Agricultural Faculty was considerably overstaffed. While it was recognised that agribusiness was an appropriate initiative for the Faculty, the only way this initiative could be resourced would be to reduce staff in other Departments—a management task too difficult for the administration, at least in the short term. A possible answer would have been to move agribusiness teaching developments, together with associated staff, to the Business Faculty which, by the formula system, was significantly understaffed. A perceived problem with this strategy was that, while the development of agribusiness teaching was important to the Agricultural Faculty, it would be "swamped" by the large and rapidly expanding programs of accounting and marketing in the Business Faculty.

Conclusions

The following are some tentative (and personal) conclusions. They are based on the curricula review exercise as a whole and should not be related specifically to Massey University.

- (a) Curricula review tend to focus on fine tuning the *content* of existing programs, while neglecting the other two dimensions of the curriculum, establishing objectives and teaching method (*cf.* Gabb 1985);
- (b) Given the diversity of employer needs, fine tuning curriculum content to fit some competency-based model is likely to be a waste of time. Graduates of widely-differing programs in the USA seem to find similar jobs;
- (c) The common thread between successful institutions was not the *content* of their programs, but their

style. (The “style not structure” theme can be found in several recent books on business organisation, e.g. Peters and Waterman 1982.) Organisational style relates mainly to “people” variables. It is well known that the main criterion for the appointment of university administrators is their research performance. Given that research is an “inner directed” sort of activity, a good research record is not likely to be highly correlated with people management skills;

- (d) Universities that concentrate their efforts on research and the traditional Bachelors-Masters-Ph.D. sequence are ill-equipped to cater for the diverse educational needs of people in employment. Generally, Business Schools are much better at handling this than Science and Applied Science Schools;
- (e) Student-number based formulae for funding institutions and programs combine with tenure and the general inflexibility of academics to make it very difficult for educational institutions to initiate new programs in institutions when student numbers are declining—which, of course is the time when changes should be made. (Conversely it is relatively easy to initiate new activities when student numbers are increasing.) It is like asking a business to fund capital expenditure out of the current year’s profit—when that profit is negative!

Massey Agribusiness Teaching Workshop, November.

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