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**ABSTRACT**

Papers from the 1979 conference of the Higher Education Research and Development Society of Australasia, whose theme was the promotion of higher education research and development, are presented. Specific topics were staff development in higher education, field experience, assessment and evaluation, teaching methods and curriculum design, and the tertiary student. Papers and authors are as follows: "The Changing Student" (Malcolm Skilbeck); "Research in Adult Education" (Barrie Brennan); "Staff Development for Experience-Based Learning" (Dave Boud and John Pascoe); "European Approaches to Staff Development" (Dietrich Brandt); "Preventing Industrial Conflict in Higher Education" (Tom M. Heffernan); "Intervention and Staff Development" (Ray McAleese); "Learning in General Practice--The Newcastle Experience" (Sandy Reid); "Group Medicine" (Andrew Hill); "Student Response to Continuous Assessment, Examination Format and Peer Marking" (John Coulson); "Evaluation of a Comprehensive Programme for Student Assessment" (Grahame I. Feletti and Graham Colditz); "The Adaptation of Flanders Interaction Analysis to Evaluation of University Teaching" (Heinz-Otto Gralki); "Evaluating an Educational Inservice Program" (Jacqueline Lublin); "The Management of Client Relationships in Instructional Design" (John Hedberg); "Scientific Enquiry in University Laboratory Classes" (Elizabeth H. Hegarty); "Visual Analogies in Higher Education" (Deane W. Hutton); "Curriculum Evaluation in Higher Education: Self Reflection in a Critical Community" (Stephen Kemmis and Clare Hughes); "Self Selecting Mature e Students" (Allan Pitman); "Student Attitudes at a New and Old University" (S. S. Western and Ernest Roe); and summary of nonformal conference activities (Roger Landbeck). (SW)

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## RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION 2

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11 - 14 May, 1979

Edited by  
DERICK UNWIN  
QUEENSLAND INSTITUTE OF TECHNOLOGY

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## HIGHER EDUCATION RESEARCH & DEVELOPMENT SOCIETY OF AUSTRALASIA

The general objective of HERDSA is to promote research and development in Higher Education. Membership of the Society is open to any person interested in that objective.

Further information regarding membership of HERDSA is available from the Secretary, c/- TERC, University of New South Wales, P.O. Box 1, Kensington, N.S.W., 2033, Australia.

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## PREFACE

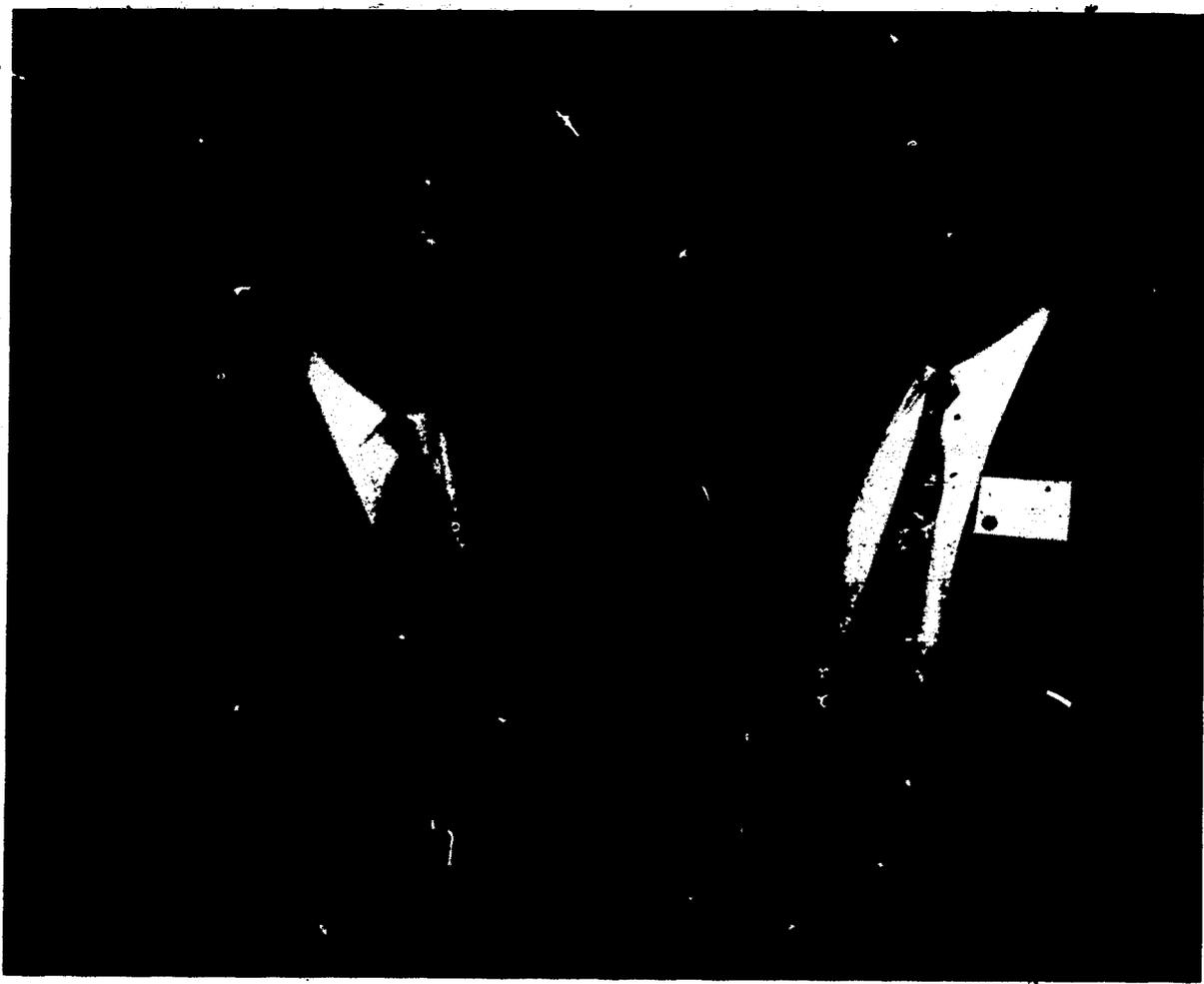
The 5th Annual HERDSA Conference was planned around the theme, "The Promotion of Higher Education Research and Development": in fact a reaffirmation of the objectives of the Society. Consequently no restrictions were placed on the subject matter of papers provided they fell within the general scope of the theme. In the event, the papers accepted did fall within a few broad categories as will be seen from the table of contents. The keynote address by Malcolm Skilbeck, Director of the Curriculum Development Centre, focussed on 'The Changing Student', a reminder to those present that education is in a state of flux calling for increasing flexibility and adaptability on the part of teachers generally. Papers were also canvassed within the specific topic of 'Field Experience', and it was gratifying to receive contributions from the strongly innovative medical faculty at the University of Newcastle, New South Wales.

A new feature at the Conference was a session on Adult and Continuing Education, organised jointly by HERDSA and the Australian Association for Adult Education. Barrie Brennan, Chairman of the AAEE, provided the keynote address to this section which was convened by Dr. J.A. McDonell of Monash University.

One pleasant aspect of the conference was the considerable overseas representation. Thailand provided a significant attendance and registrations also came from Canada, Germany, New Zealand and the UK. At a time when the values and concerns of higher education are being closely examined and debated, when demographic and socio-economic factors pose unpredictable challenges, it was particularly pleasing that Senator J.L. Carrick, Federal Minister for Education, should have agreed to attend the Society's annual dinner as Guest-of-Honour. I am also indebted to Senator Carrick for providing a foreword to this volume.

Finally, I would wish to place on record my appreciation for all the support and help received during the course of planning and conducting the conference. It would be impossible to individually name all those involved but I should like to particularly mention my associates on the Organising Committee, and Dr. Bill Hall and his staff at the Mount Gravatt CAE. Future HERDSA Conference Conveners will be fortunate indeed if they encounter the same degree of co-operation and expertise.

Derick Unwin,  
Queensland Institute of Technology,  
Brisbane, July 1979.



*Senator J.L. Carrick (Commonwealth Minister for Education) / Derick Unwin (Conference Convener)*

## ACKNOWLEDGEMENTS

I should like to express my gratitude to all those associated with the production of these proceedings, and especially to:

- the authors for making the volume possible, and for complying with what probably seemed rather esoteric instructions.
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- staff of the QIT Printing Centre, particularly Dave Roberts, Manager.

DERICK UNWIN

The 5th Annual Conference of HERDSA was held at Mount Gravatt College of Advanced Education, Brisbane, Queensland, Australia, 11-14 May 1979. The Conference Organising Committee comprised:

John Clarke (Kelvin Grove CAE)

Pat Crowther (Ansett Airlines)

Merv Fogarty (North Brisbane CAE)

Geoff Foster (University of Queensland)

Anne Kehl (representing the Director, Mount Gravatt CAE)

Roger Landbeck (Griffith University)

Don Litster (Queensland Institute of Technology)

Derick Unwin (Queensland Institute of Technology, Convener)



## Foreword

Senator The Hon. J.L. Carrick  
Federal Minister for Education



The post-war decades in Australia which have seen a huge and unquestioning demand for more and more education, particularly at the tertiary level, have been replaced by a current period of growing questioning of the very relevance of education. There has emerged an increasing awareness that the enormous expansion in educational resources has not produced a parallel increase in quality.

The rapidly growing and youthful Australian population of the past which gave rise to a burgeoning of student numbers has been replaced by declining birth rates, lower immigration, an ageing population, and a steady state of student numbers. A post-war nation which had little unemployment overall now faces significant unemployment largely concentrated amongst its juveniles. A nation which is so vitally dependent on its capacity for overseas trade now confronts the full force of international competition and the need to lower costs and increase skills, particularly within manufacturing industries.

In our questing for the appropriate reforms and solutions the Government has undertaken four major probes two of them, the Williams Committee and the Crawford Committee – have already reported and their findings are in the process of detailed analysis. Two others – the Auchmuty Committee, inquiring into teacher education, and the Myers Committee on technology will report within the next nine to twelve months.

Collectively, the four enquiries constitute a uniquely comprehensive review of education, vocation and technology. They will tell us much of what would be required in sophisticated skills. It is for us to ensure their proper perspective in the overall goals of individual development and fulfilment.

The Williams Report is an essential and an effective starting point. It poses a wide range of probing questions over a very broad spectrum and offers some very useful commonsense recommendations. Most importantly, it starts us thinking, discussing and questioning. If it did no more than this, it is a very valuable addition to our collective storehouse of educational wisdom and experience.

The Williams Committee has not recommended significant structural changes. It has placed its full emphasis upon reform by constructive evolution. Because it has not sought radical changes in the direct sense, it has not heavily captured the media headlines. Nevertheless, taken in their orchestration, the Williams reforms will make a massive impact upon the whole education spectrum.

The report emphasises the special nature of universities and seeks to preserve and strengthen universities in their discrete character. With this I fully agree. It recognises the tremendous pressures on universities in recent years in the field of primary degrees and somewhat to the detriment of other university activities, particularly research. The report advocates the establishment of a number of postgraduate centres of research at universities. This is a matter which deserves close sympathetic consideration.

I share the Williams Committee view that there should not be simply a seeking of student numbers and that all students enrolled at an institution should be judged as having a reasonable prospect of success. Failure should be regarded at least as much the responsibility of the institution as of the student. It is good news therefore to read the recommendations regarding training programmes for academic staff in the theory and practice of teaching. We have for too long been somewhat coy about insistence upon proper communication by tertiary lecturers.

It is fundamental, too, that effective programmes of course evaluations should be developed throughout the tertiary system. Only by such approaches can we be sure that we are upgrading quality in our institutions. Australia has a tertiary education system of world standard. Against that background, we should not be reluctant to confess the defects that are there and that can be rectified.

Research work has a significant contribution to make to problems within industry and to urgent social and economic questions within the community. At a time when research activities are themselves under scrutiny, I commend the work undertaken by HERDSA and its members and the valuable contribution which their activities have made in the research field.

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# The changing student

Malcolm Skilbeck

Curriculum Development Centre, Canberra

This paper is concerned with the attributes of students likely to be entering higher education in the future, and in particular with a few crucial characteristics. These include matters of cognitive and intellectual development, policy changes and social climate.

The curriculum, organisation and pedagogy of secondary schools is in the process of significant review and change. Teachers in tertiary institutions will need to come to terms with students possessing different competencies, learning skills, interests and aspirations.

The 'unity' of the student is emphasised and the suggestion made that a greater degree of co-operation and understanding between the sectors of education is desirable.

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## 1. Introduction: A period of stability?

The problem of tertiary education in the next decade may be less that of the changing student than the unchanging staff. After more than a decade of rapid expansion in the tertiary sector - of student enrolments, numbers and types of institutions, courses and course programs and faculty members - we have now reached a relatively steady state. This state is described in the cautious language of the Williams Committee as a set of projections of which the most likely one envisages little growth in the university sector, not very much more in the college of advanced education sector and rather more in the TAFE sector.(1) However, while student and staff numbers may not increase dramatically, there could well be highly significant qualitative changes in the learning characteristics of the tertiary students and in the teaching abilities and interests of the staff. For example, the proportion of students entering tertiary institutions with some measure of non-school experience is increasing as more students take a break between school and college or university. Moreover, reasonable predictions have been made about a steady increase in the number and proportion of students returning to full or part-time study after substantial periods of work or child-raising experience, and institutions are changing to accommodate this shift from an end-on to a more periodic or continuing process of education. Both of these trends are commended by the Williams Committee as they are by many other educational bodies and agencies and may be expected to gain increasing institutional, financial, ideological and other forms of support.(2) Such changes in the composition of the student population raise questions about the suitability of present methods of selecting and training tertiary teachers and the appropriateness of their assumptions and attitudes.

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Assistance of colleagues in the CDC, especially Wendy Edgar, is gratefully acknowledged.

Because we are not oppressed by the pressures of quantitative growth, we are in the position now of being able to address ourselves to some of the qualitative issues relating to staff, students and their interactions, a fact which is clearly - if not always very strongly - communicated in the Williams Committee Report and which underlies the terms of reference of the current national inquiry into teacher education and the counterparts of that inquiry in the states.

Just as the Williams Committee has been cautious and modest in its statements about trends and future directions of the post-secondary educational system, it behoves us to be extremely careful in making generalizations about student characteristics and in drawing inferences from such trends as we may be able to detect. The focus of my paper is not the students you have in your tertiary institutions, but those you may expect to receive, mainly direct from secondary schools but increasingly also the mature students. I am bound to admit at the outset that the empirical data I have been able to assemble on the subject of my paper, "The Changing Student", are much more limited and patchy than I had hoped would be the case. The research evidence is neither available in significant quantity and variety nor, as far as I have been able to ascertain, have many studies of secondary school students been conducted which would be of great value to course designers and other decision makers in the tertiary sector. No doubt there is a great deal of local and specific knowledge of particular cohorts of prospective students available to individuals, to departments and even perhaps to whole institutions through their local and historical experience, but this is not quite the same thing as systematic knowledge of crucial learning characteristics and attributes of the high school student population as a whole. Also, as you are well aware, there is a folklore about tertiary teaching which can act as a serious barrier to open-mindedness about students and to critical and creative thinking about new approaches to teaching. The Secretary of H.E.R.D.S.A., Derick Unwin, and I were colleagues together some years ago at a British University where I was chairman of the university teaching methods committee. This was a rare concession to a professor of education, made, I suspect, only because the activity of university teaching ranked so low as an object of concern in the institution and hence conferred no status or power on either the committee or its chairman. One of the many difficulties faced by that committee was persuading several senior and influential members of the university that their fixed ideas, stereotypes even, of students and of appropriate ways of teaching them, warranted any kind of consideration whatsoever. The committee was seen by them as a concession or token. The very high failure and dropout rates in Australian tertiary institutions and the admitted failings in course design in at least two of its three subsections makes that particular difficulty easier to address here without exciting the derision of your academic colleagues.

In considering at this conference teaching and learning questions with a focus on anticipated student characteristics, although we may have less data on students than we might wish for, we may be able to pool our knowledge and experience, expose some of the areas where more knowledge is needed, determine some of the tasks tertiary teachers must confront in the design of learning situations, and consider how some of these tasks may be carried out.

Since I cannot address myself to all characteristics of likely future students that may be relevant to the organisation of teaching and learning situations in tertiary institutions, I have selected a few of what I regard as the crucial characteristics, concentrating on those where I am not reduced entirely to speculation and hearsay. In addition, I want to draw to your attention assumptions being made in the secondary sector and some trends in that sector

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which may have a significant impact in the future on the qualities and expectations students bring to the tertiary sector.

## 2. Cognitive and intellectual characteristics of prospective students

I shall start with a range of cognitive and intellectual characteristics, including study skills and attitudes and what might be termed entry behaviour and modes of attack in relation to learning tasks.

It is widely but, I think, erroneously believed that standards of performance in several main areas of academic learning have declined in recent years in Australian schools. Despite the noisy and widely publicised pronouncements on the subject and notwithstanding the gut feelings of and even the test results produced by some academics in universities, I am not persuaded of the truths of this claim. At least, the Australian research evidence assembled and surveyed by the Curriculum Development Centre during 1976-7 does not support the decline thesis. (3) Undoubtedly, students completing secondary schooling have had a different kind of academic experience from that of many of their tertiary teachers, although the actual changes in secondary school content, methods of teaching, modes of assessment and school academic climate are probably much less than one might infer from all the innovation rhetoric of recent years. As for the dramatic or perhaps I should say sensationalist claim about particular areas of weakness displayed by students at point of entry to certain tertiary courses where, a few months previously, those same students had received passing grades in external examinations, I am reminded of the English Puritan divine and schoolmaster John Brinsley who, more than 350 years ago, remarked:

"Finally, this I account the worst of all, that when I have taken a great deale of paines, and have made my Schollers very ready in construing and parsing; yet come and examine them in those things a quarter of a yeere after; they will be many of them as though they had never learned them, and the best farre to seeke: whereby, when Gentlemen or others come in and examine them, or their friends try them at home, in the things which they learned a quarter or halfe a yeere before; they are ordinarily found so rawe, and to have so forgotten, that I doe receive great reproach, as though I had taken no paines with them or as they had profited nothing."

Whereas the educational right is apt to blame slipshod teaching and low academic expectations for deficiencies in student knowledge, the left is apt to blame it on the apparatus of subject-centred teaching and external examinations. Perhaps it has more to do with the relative importance of academic studies in the lives of students and the situations in which formally organised knowledge is acquired and applied. If we ask the students themselves, their answers frequently indicate that, for them relevance of study and learning to their life pattern is of central importance. (4) Studies of student "wastage" suggest that we should be paying very close attention to the context of learning and its support structures instead of looking to blame some supposed defect in the learner himself, a point that would seem to have particular relevance in Australian tertiary institutions where drop out rates are extremely high and criticism and student shortcomings quite strong. (5)

My first contention, then, is that evidence of a decline in standards of student attainment is, at best, inconclusive. Changes there have been in secondary schooling, for example to give greater emphasis to a wide range of study skills such as locating information, interpreting, analysing, synthesising and applying it, working independently and in small groups, working on self-selected assignments and in self-defined situations, and relating school studies to broader social contexts. Under the circumstances, it should neither surprise

nor disturb us that other intellectual processes, such as the manipulation of predetermined and predefined data under conventional examination conditions, should not be improving and may indeed be declining somewhat. Competence in essay writing, in an era of objective testing, and examination skills, in the age of course work assessment, may be at a lower standard than hitherto, and tertiary teachers can no longer take them for granted if indeed they ever could.

The questions to ask are

- (1) whether the teaching-learning processes being fostered in secondary schools have substantial educative value and
- (2) what changes in expectations and teaching practice are required as a consequence in tertiary institutions? Tertiary teachers need assistance in addressing themselves to these changes and I assume that that is one of the functions of members of this Association.

Although I cannot readily document it, my belief is that there has been something of a shift in intellectual characteristics of students which may not be receiving adequate notice. The shift is twofold. Firstly, the proportion of students, completing secondary schooling and moving on to some form of tertiary education, who are functioning in Piaget's terms, at the intellectual level of formal operational thinking may be somewhat less than a decade or so ago. What leads me to suggest this is that research on cognition in the Piagetian tradition is drawing attention to significant numbers of late adolescents and adults, who have completed substantial periods of schooling but are still functioning at the cognitive level of concrete operations.(6) This finding has further relevance given that the research suggests that concrete operations persist longer in such subject areas as history and literature or, more broadly, the cultural sciences than in the natural sciences. Yet the expansion in the tertiary sector, especially in the CAE's, has been disproportionately great in the area of the culture sciences. Thus, it would not be surprising if teachers in tertiary institutions were encountering large numbers of students for whom intellectualistic assumptions in the phrasing of questions, the use of language, models and theories, and the application of processes of logical and abstract thought, are just not valid.(7) As I remarked a moment ago, my view on this is necessarily tentative, given the limited nature of the evidence, and I feel in any case that the relationship of Piaget's theory of cognitive development to different forms of understanding, knowledge, language and ways of life has been only partially explored. However, it is to my mind at least an issue for consideration as to whether many tertiary teachers are making invalid assumptions about the level of cognition on which their students are functioning, blaming or criticising them (and their secondary schools) for poor study habits, lack of application, weak motivation and inadequate preparation and background whereas the problem has to do with the tertiary teacher's need to understand better the nature and limits of cognitive processes in his own students.

I said that there was a second consideration relating to intellectual interests and capacity to which I wished to refer. It is this, that a small but important shift in Australian culture may be occurring. Several studies of youth and many commentaries on Australian life have drawn attention to the predominance of sport and other physical recreational and leisure interests of adolescents in our society.(8) In the light of this evidence, it may be wishful thinking to suppose that the broadening and loosening of the school curriculum, the rapid expansion of the arts in society and of interest in non-material culture such as travel, a wide range of leisure pursuits, etc., is shifting youth from its overwhelming leisure interest in sport and popular entertainment.(9)

I am not offering the opinion that Australia, in the past ten years, has witnessed the growth of a powerful and pervasive intellectual culture, but there is certainly greater cultural diversity and increased interest in the elements of a wider expressive culture, and these are strong centres of an intellectual culture, all of which are impinging on tertiary student life. This, however, is a gradual shift, affecting social climate, assumptions and values in complex ways which do not necessarily show in expressed intellectual interests or attainments of students. I draw attention to this shift because I believe it is of great, longer term significance and because it provides a powerful resource for tertiary teachers to draw and build upon.

### 3. Some changes in social climate, policy and resource provision

I turn now to some of those changes in students which are likely to occur over the next decade as a consequence of policy changes, the allocation of resources, and social climate shifts. These changes and shifts relate to the so-called multicultural society, social class, sex, political and social attitudes, values, and the age composition of the student population.

Whilst in none of these areas are any major shifts occurring that are having marked effects on students in the latter years of secondary schooling - nor are they recommended to occur by the Williams Committee - trends have emerged and are likely to grow which should bring about a significant reorientation of our thinking and action. Also, other official reports than that of the Williams Committee have promulgated a view of Australian society in which shifts will occur affecting student attitudes, values and understandings.(10)

Some of the data on the ethnic mix of our society, suggest that certain groups of students in secondary schools are, at present, at a distinct disadvantage. These include many groups of southern and eastern European origins, aboriginals and certain Asiatic groups. On various measures highly relevant to educational opportunity and outcome, such as intelligence quotient, social class and command of the English language, these groups, who comprise a significant section of the secondary school population, but a disproportionately small part of the tertiary sector, are found to be in a disadvantageous position.(11)

The Federal Government's recent initiatives, for example through rapid adoption of the recommendations of the Galbally Committee, and through establishing the National Aboriginal Education Committee, are part of a wider movement to improve the educational, social and cultural opportunities of members of these groups. If successful, such initiatives will result, over the next decade, in changes in the traits and even the composition of the student populations of tertiary institutions which could be far-reaching. For example, the encouragement of a move towards cultural pluralism as compared with the older policy of assimilation should lead to an active promotion of ethnic languages, ethnic values and belief systems, ethnic social and community structures. This encouragement will not be confined to ethnic groups since it will be accompanied by deliberate and vigorous attempts to promote the concepts, beliefs, institutions and practices of multiculturalism throughout the whole Australian society.(12) Official and unofficial groups, some government sponsored or directed, have been meeting over the past year to try to define the general nature and direction of a policy for multicultural education. I will draw your attention to just four of these: the UNESCO conference on Teacher Education for International Understanding, which strongly commended extension of a multicultural dimension throughout teacher education institutions and programs, the Report of the Ethnic Affairs Commission of New South Wales, the as yet unpublished report of the Federal Portfolio of Education group on Education for a Multicultural Society and the establishment, in 1976, of the National Aboriginal Education Committee.(13)

Documents and initiatives such as these betoken strong moves to sustain and strengthen forces and groups in our society which in the past have had relatively little official encouragement and support. Their implications for the ultimate composition and value structure of the student population of tertiary institutions are what I want to draw to your attention, since there is a real challenge here to the dominant model of the student and his value system on which many tertiary teachers may be operating at present. This model will be further challenged by the experience secondary school students are now beginning to have of curriculum materials focussing on cultural pluralism and ethnic diversity. (14)

There is not space for me to refer in any detail to the other policy, resource distribution and social climate changes which I mentioned above. As a massive simplification, I might say that, until recently various monocultures dominated our secondary and tertiary institutions: in the universities, these were related to academic and social selection and stereotyped views about appropriate roles, especially sex roles; in the colleges of advanced education they were related to a relatively narrow range of applied disciplines, possessing a modest social status; sex role stereotypes also prevailed; in the technical sector, monocultural dominance was expressed in aggressive vocationalism, the residue of social selection "higher up" in universities and colleges, and sex role stereotypes. I hope you will overlook the crudity of this characterisation, since my point is not to make anything of the past but to suggest that a range of pressures and forces is so affecting the whole tertiary sector as to produce a much more blurred and indeed complex institutional situation, which has its correlates in student characteristics both for the present and the immediate future at least. The situation incorporates many interesting changes, such as the change, by stipulative definition, whereby technical and further education colleges are translated into the tertiary sector, but not, for example, salaries, conditions of service, institutional provision, per capita expenditure, etc. Another change is the determination, this time by the Williams Committee, that the "practical" "vocational" bias of colleges will continue, whereas universities will become more research and higher studies oriented despite evidence to the contrary that such distinctions don't address themselves to the nature of staff and student experience and roles in the institutions themselves, nor to community perceptions of them.

Another factor, to which I have already referred, is encouragement being given to two categories of students who hitherto have been underrepresented in tertiary education or in certain sectors of it, namely women and mature students. Australia, in common with many other societies, is experiencing what appears to be a long term if irregular shift of women into traditionally male dominated professions such as medicine, veterinary science, engineering, law and a wide range of applied sciences. At the same time, encouragement is being given, through various forms of government action, including schooling, to girls and women to express and assert rights, and to achieve a standing in the learning environment by which traditional roles and stereotypes are substantially changed. This is often a matter of image and self image, of relationships between the sexes, of assumptions and values more than it is of specific changes in student behaviour that will manifest themselves in classroom situations but it should not be underestimated because of that.

A related change is the move, in schools, to introduce courses in human relationships, sex education, social education and other ways of changing student awareness and understanding and developing in them new skills. The clearest recent affirmation of the need for the shift and what it might entail in broad social terms is the Report of the Human Relationships Commission,

a document which is, perhaps, somewhat ahead of its time but whose basic orientations seem to me to be likely to command increasing support at least amongst secondary school teachers - and students.

A more obvious change, perhaps, than the sex role change in students, is that whereby the age composition of classes in tertiary institutions may be expected to become more diverse. As far as I have been able to gather, the discussion and recommendations of the Williams Committee point in this direction, inasmuch as support is given to extending the scope and practicability of external studies programs and widening access to universities, colleges of advanced education and technical colleges to students not easily accommodated at present. Like many others of the Committee's recommendations, these need interpreting and my interpretation is that whilst there is a disappointing lack of direct attention given to the concept and processes of recurrent education (perhaps because the Committee declared its unwillingness to recommend any major structural changes) where it does touch on what might be considered as related issues, it does so positively. My point is that recurrent education, external and extension studies, and part time courses are a major component of tertiary education and are likely to increase as costs of full time study rise, demands for middle life training and retraining increase and expansion occurs of the two sectors where ideas of recurrent and part time study are more strongly entrenched. Tertiary teachers, in these sectors, can expect student maturity and variety of experience to become more important considerations in course planning.

#### 4. Changes in the schools

Changes in the schools themselves as a source of new or different characteristics of tertiary students are extremely difficult to document, assess and predict. The reasons for these difficulties relate to the paucity of research evidence on so-called operational curriculum, that is the learning experiences of students in school settings, as distinct from the visible or manifest curriculum as indicated in course outlines, syllabuses and textbooks. An example will make this point clear: a new course in, say integrated science, may ostensibly encourage students to engage in problem solving, lateral thinking, subject integration, discovery methods, practical work, field studies etc., but teachers may adopt a subject centred, instructional, classroom-based mode of teaching despite the structure, content and recommended approaches of the materials themselves. Such a gap, between the intentions of course and material makers and what may be the objectives of teachers and classroom reality is apparently quite wide in many Australian secondary schools. We should not be misled by the rhetoric or by the ready availability of glossy teaching materials.(15) A further complication in offering a description of current secondary school practice is its increasing diversity. The move towards school-based curriculum development, although very uneven and frequently half-hearted, when combined with the growth of school assessment as a component of overall evaluation of student performance, has made generalisation about curricula, teaching and learning practice exceedingly difficult. However, the movement shows no signs of abating and we may expect that students coming to tertiary institutions in the future will have had more diverse learning experiences even within the same area of study than has been the case in the past.(16) Whereas basic skills of learning and study may be very widely distributed, the learning content and the structures of learning situations which students have experienced may be expected to vary considerably. The policy of multicultural education will compound this, by encouraging greater sub-cultural diversity just as the wider society move towards cultural pluralism is encouraging a wider range of acceptable values, norms of conduct and life styles. There are, of course, counter forces: for and in the schools, a

reaffirmation of ideas about common learnings, core curriculum and general education; in society at large, strong conservative reaction to value pluralism and the alternative life-styles movement.(17) Through the activity of the Curriculum Development Centre, support is being given both to school based curriculum development initiatives and to core curriculum, and several national level projects one of whose effects is to increase common awareness, knowledge and experience amongst educators in such areas as science, social science, mathematics and language. Predictions of the outcomes of these and other influences on student learning characteristics would be indeed hazardous and I shall content myself with drawing your attention to them as factors at work in secondary schooling and its support services.

##### 5. Some assumptions of curriculum developers about secondary students

It is relevant, in this context, to draw your attention to some of the assumptions that underlie the work of curriculum developers, including those in the Curriculum Development Centre and the directions in which their work is tending. A brief summary will suffice to indicate that the curriculum, the organisation and the pedagogy of secondary schools are under significant, comprehensive review and change, and student learning tasks are being perceived very differently from how they were a decade or so ago - at least by the educational developers.

When preparing this paper, I asked several of my colleagues to identify and comment on the assumptions they make about the nature and needs of secondary students when preparing curriculum materials and to indicate learning characteristics which they are attempting to encourage. Nowhere have these been specified as part of an educational philosophy which the Curriculum Development Centre is fostering. Nevertheless, there is considerable consistency in their responses, all of which point towards generally progressivist views of the educational process. Thus, an enlargement of mind is being encouraged, whereby students are expected to be aware of and sensitive to their own environment and society, to diverse cultures within Australia and to Australia's place in the international order especially the South-East Asian and Oceanic regions. Visual literacy and skill in all forms of language use, including oral, are being encouraged as are a broad social and technological approach to science, critical thinking, problem solving, group learning and mathematical competence. Students are being expected to treat a very wide variety of learning materials, in different media, as sources of knowledge and understanding: they are being encouraged to develop and use laboratory, workshop and field skills and techniques. It is assumed that they need to work on a wide range of concrete materials and learning tasks; that these should be structured, sequenced and articulated, but not tightly, as in the mode of programmed learning. Learning materials and tasks are being designed which foster curiosity, elicit and build on interests and encourage students in a sense of their own capacity to organise and manage learning, with the guidance and approval but not necessarily directions of the teacher. In these materials and approaches relatively little attention is being paid directly to the needs of exceptionally able children or those with particular learning difficulties - mainstreaming rather than an individualised or sectionalised approach is generally adopted. However, the openness and diversity of the envisaged learning situations is such that individualised learning could be a strong feature if teachers are willing to organise it. The model of teaching is, essentially, not one based on instruction in uniform situations - such as a teacher expounding in a classroom - but one of a diversity of learning tasks in a variety of guided learning situations. The envisaged model of student behaviour is open, inquiry-centred, humanistic and centred in social and personal competence and expression.

I am not saying, of course, that this is how secondary schooling in fact is organised! But the assumptions and approaches of the curriculum developers are also, on the whole, those of teacher educators, of some parents and parent groups and of many teachers, educational consultants, researchers, administrators and so forth. They are spreading into secondary education and I see no likelihood of this trend being reversed.

Teachers in tertiary institutions will need to come to terms increasingly with students possessing rather different learning competencies, research skills, group learning skills, motivations, interests and aspirations from those of their predecessors. I don't wish to over-emphasise this since an aspiration of an educator and the felt experience, competence and sense of purpose of students have usually been established by research to be remote from one another. Perhaps what I should say is that those tertiary educators who value the approach to learning and teaching which has been implicit in this paper will find increasing support for their views and, perhaps, a growing stream of students who have experienced structured, richly varied inquiry approaches to learning.

Although it seems most likely that secondary schools on the whole are still not imparting an intellectual culture to their students, as I have indicated there is at least a move in this direction. When polled, secondary school students usually request of their schooling: greater relevance to their everyday interests, to social and political concerns and to the vocational requirements of society. They ask for experiences that foster social skills and competencies and provide scope for their expressive interests and for teachers who share their interests and outlook on life.

#### 6. Some leads for tertiary teachers?

I don't know how common it is for tertiary teachers to include an analysis of student interests, competencies, expressed educational preferences, experiences and purposes in their course making.(18) Certainly, some of the books and reports on tertiary education, not least the Williams Committee report, pay scant if any attention to the curriculum issue of who are the students, what are their preferences, interest and needs, and how should they actively participate in their own learning.(19) Yet, in the design and implementation of successful curricula, the ascertainment of the characteristics and needs of students is a central task. It is gratifying that the Williams Committee has recommended that serious attention be given to helping tertiary teachers to plan and design courses. One of the first steps to be taken, if this is not to be a barren exercise in resource management, is to assist tertiary teachers in ascertaining, analysing and interpreting the learning characteristics and needs of the students they are to teach. ~~Your Association,~~ it seems to me, has in this regard a major responsibility and opportunity.

The differences between the secondary and tertiary levels are considerable although now blurred in some respects in Australia by the treatment of technical and further education as part of the tertiary sector. Procedures appropriate to the one level are not necessarily of value at another. Yet the basic principles of curriculum design and development and indeed of teaching itself are not fundamentally altered by the institutional and administrative barriers between levels of schooling. Tertiary teachers might very usefully combine with secondary teachers, especially in considering problems of transition from the secondary to the tertiary sector, and with the wider realms of work and social experience in considering the needs of mature students. The curriculum development movement in the schools has thrown up many questions and issues and has explored a number of procedures in relation to defining

student need and designing and developing course materials and learning situations. There may be something for tertiary teachers to learn from this experience, just as secondary school teachers could usefully learn some aspects of pedagogy from primary school teachers. The student, after all, is a unity, from his earliest to his latest educational experiences and has been changing, in an internally coherent way, from the beginning. As tertiary institutions move to establish the mechanisms and processes of training in systematic curriculum development which have now been enjoined upon them by Professor Williams and his colleagues they may find a considerably enlarged scope for collaborative effort with the secondary schools from whom their clientele is drawn.

#### Notes and References

- (1) Committee of Inquiry into Education and Training (Chairman Professor B.R. Williams). Education, Training and Employment: Report of the Committee... Canberra, A.G.P.S., 1979, Vol 1, ch 3. See also Tertiary Education Commission. Report for 1979-81 Triennium. Canberra, A.G.P.S., 1978. Vol 1, pp. 31 ff.
- (2) Williams Report Vol 1, ch. 1; T.E.C. Report, 1978, p 31. However, progress is regarded by some commentators as unduly slow: Ryan, Y. "Mature students and equality of access to higher education" and Anwyl, J. "Equality: exploring the gulf between rhetoric and reality in Australian tertiary education". in Chippendale, P.R. and Wilkes, P.V. (eds.) Equality or Excellence. Dilemmas for Policy and Planning in Australian Higher Education. Toowoomba, Darling Downs Institute of Advanced Education, 1978. Projected developments in higher education in Australia have been examined most recently by Hore, T., Linke, R.D., and West, L.H.T. (eds). The future of higher education Australia. Melbourne, Higher Education Advisory and Research Unit, Monash University, and Macmillan, 1978.
- (3) Skilbeck, M. "Standards: Perspectives on performance and prospectives for future initiatives". in Australian College of Education: Queensland Chapter. Standards in Education. Fact or Fiction? The Proceedings of the 1976 Conference. Brisbane, The College, 1976.
- (4) Connell, W.F. et al 12 to 20. Studies of City Youth. Sydney, Hicks, Smith & Sons, 1975, pp. 284-301. There have been similar findings in several British and American studies over the past thirty years.
- (5) See, for example, Wankowski, J.A. "Student wastage: the Birmingham experience". in Butcher, H.J. and Rudd, E. (eds.) Contemporary Problems in Higher Education. London, McGraw Hill, 1972 pp.71-82.
- (6) Connell, op. cit. ch 5 "Cognitive development". See also the criticism of aspects of formal operationalism, which relates reasoning to content, in Wason P.C. "The theory of formal operations - a critique", in Geber, B.A. (ed.) Piaget and Knowing. London, Routledge & Kegan Paul, 1977.

- (7) Criticisms of Piaget's theory, such as Wason, *op. cit.*, have implications for expectations academic teachers may have of generalised reasoning powers of their students, but this is too large a topic to broach here.
- (8) Connell, *et. al.*, *op. cit.*; Poole, M. and Jucknowski, M.V. "The role of the school in adolescent leisure activities" and "The leisure activities of Australian adolescents", 15 to 18 Project Papers. La Trobe University, n.d.
- (9) The expressed preferences of adolescents in relation to secondary schools are decidedly utilitarian, according to the study by C.W. Collins and P.W. Hughes, "Expectations of secondary schools: a study of the views of students, teachers and parents", for the Williams Committee (Vol 2, pp. 289-327).
- (10) The recent most notable - and perhaps controversial, of these are Royal Commission on Human Relationships. (Chairman, Justice Elizabeth Evatt) Canberra, A.G.P.S., 1977. Australian Government Commission of Inquiry into Poverty. (Chairman, Professor R.F. Henderson) Canberra, A.G.P.S., 1975. Migrant Services and Programs: Report of the Review of Post-arrival Programs and Services for Migrants. (Chairman, F.E. Galbally) Canberra, A.G.P.S., 1978. South Australian Royal Commission into the non-medical use of drugs. Adelaide, Government Printer, 1978.
- (11) "Disadvantage" has been examined in the Migrant Services and Programs Report. *op. cit.*; Connell *et. al.*, *op. cit.* ch. 10; Watts, B.H. Access to Education: An evaluation of the Aboriginal Secondary Grants Scheme. Canberra, A.G.P.S., 1976; Taft, R. and Cahill, D. Initial adjustment to schooling of immigrant families. Canberra, A.G.P.S., 1978; Girls, school and society: A report by a study group to the Schools Commission. Canberra, Schools Commission, 1975; and Education for a Multicultural Society. Report of the Committee on Multicultural Education to the Schools Commission. Canberra, Schools Commission, 1979.
- (12) Smolicz, J.J. Culture and Education in a Plural Society. Canberra, Curriculum Development Centre, projected publication date, July 1979.
- (13) Teacher Education for International Understanding. Proceedings of the Australian UNESCO Seminar, Adelaide April 17-20, 1977. Canberra, Curriculum Development Centre, 1979; Participation: Report of the Ethnic Affairs Commission of N.S.W. Sydney, Government Printer, 1978.
- (14) SEMP (Social Education Materials Project): Race and Ethnic Relations. Canberra, Curriculum Development Centre, 1976.  
 QANTAS and Asian Studies Coordinating Committee. Children in Asia. Canberra, Qantas and Curriculum Development Centre, 1979. See also kits on Indonesia, India and Philippines.
- (15) The gap between rhetoric and (3) reality is explored in Hill, B. The Schools. Melbourne, Penguin Books, 1977. See also the comment in Connell, W.F. *et. al.* *op. cit.*, on the common pattern of control operating in Sydney high schools, through examinations, classroom design and management, teacher authority roles: the official cultures (pp. 153-4).
- (16) Even in a subject discipline as highly structured as mathematics there is already considerable diversity: Cooney, G.H. "The mathematical background of students in social science disciplines in Australian universities". E.R.D.C. Report No. 10. Canberra, A.G.P.S., 1976, pp. 118-120.

- (17) For example the Australian Council for Educational Standards was established by a group of educationists and individuals who were concerned about the effects of schooling - its perceived deficiencies, particularly in basic skills - and the broader effects of social change on student attitudes, values and motivation. Moves to establish the idea of a core curriculum are gaining momentum in Victoria and Tasmania, and the Curriculum Development Centre at present is funding and directing a working party on core curriculum.
- (18) Dr Bill Hall, in his excellent course planning guideline paper, poses several apposite questions for tertiary teachers to answer about their students: Hall, W.C. "Some important questions for course planners in higher education". H.E.R.D.S.A. Newsletter Vol. 4, July 1977, pp. 5-6.
- (19) The issue surprisingly is not addressed in either Falk, B. and Kwong, Lee Dow University Teaching: Reality and Change. Melbourne, A.C.E.R., 1971 or Reid, W.A. The Universities and the Sixth Form Curriculum. London, Macmillan, 1972, yet both books deal with the question of course design and development, respectively at the tertiary and upper secondary school levels.



# Research in Adult Education

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The paper initially discusses questions of definition and interpretation, i.e. in relation to the terms "Adult" and "Education". The second part of the paper discusses a series of categories outlining need areas for research in adult education. The final section discusses possible future outcomes and directions for adult education research in Australia.

## RESEARCH IN ADULT EDUCATION

Let me first say how pleased I am that HERDSA has recognised the growing importance of adult education with a section of its conference being devoted to the field. I am further pleased that your organisation has recognised the Australian Association of Adult Education (AAAE) as being representative of the broad field of adult education.

As I assume that most of the members of this audience would not identify themselves as adult educators, something better be said in the way of definition. Defining "adult education" has bedevilled academics, students, practitioners, legislators and administrators, as well as Conferences such as this, for a long time.

So I plan to dodge the issue partially. I will simply assert, like the critics of IQ tests who used to say that IQ was what the tests measured, by asserting that adult education is what is represented by the membership of the AAAE.

But because this is a learned audience, I will refer you to two references in which the discussion of the terminology can be read, rather than listened to, and more critically assessed. There is Chris Duke's "Australian Perspectives on Life-Long Education" Australian Education Review No. 6, published by ACER, particularly the first chapter (I think his thesis as well as his definitions will be of interest) and the C19 Instrument Document on Adult Education produced by UNESCO. This document formed the basis for an audit of Australian Adult Education in 1978 discussed below.

Because of my understanding of the audience for this paper I want to make two comments. In these comments, I am assuming an audience of people involved in tertiary institutions concerned essentially with offering degrees and diplomas,

'credit-type' education. I want then to comment on education and the adult.

The title 'tertiary' implies a model of education that consists of three tiers. Associated with this model is the concept of education as an apprenticeship, a term that may not appeal to those in tertiary institutions. Time does not permit a detailed examination of the concept. I would therefore refer you to a paper by David Armstrong published by the AAAE in the proceedings of a conference "Educating the Whole Person: Towards a Total View of Lifelong Learning". In addition, to filling out the definitional problem, it may help to sharpen up your thinking on your institution's view of its role in the educational process.

It is from this 'tiered' point of view that tertiary institutions, I believe, have problems with adults. Setting arbitrary age levels for adults, e.g. 21 or 25, in relation to special matriculations makes for as many problems as it solves. A second aspect of the 'tiered' point of view is to look at adult students as undergraduate, post-diplomates, post-graduates, etc. What is left out in these typical descriptions are 'experience' and 'level of motivation'. It is difficult to account for experience or to know what experience can be described as relevant or valuable. It is disastrous for the adult student when this is not taken into account, particularly in the teaching situation.

A distinction is sometimes made between adults' level of aspiration (where they may be over-reaching themselves) and the level of motivation. In most of the descriptions of the educational process, it is assumed that one of the important functions of the teacher role is to motivate the student. May I suggest that for many adult students, the new problem is to use their level of motivation (and their experience) to contribute to the learning process.

I do not know to what extent the institution with which you are associated has had experience with adults coming into courses and not just those from an extended adolescence. May I suggest that this should lead to a re-examination of course structure, learning and teaching styles. May I also suggest that they may seek credit-type programmes because they see that as being the way they can achieve their objectives. If these programmes do not deliver the goods, I would suggest that they are likely to exercise their option with their feet by leaving. Too often that is reflected in institutional statistics as a failed adult student. I would suggest that it may be the course or the teaching that have failed. A failure to examine this possibility in the long run may be a grave omission for tertiary, credit offering institutions.

In searching for a basis for a discussion of research in adult education, I found that there was a paucity of material both of a research nature and that which discussed research findings or need areas for research. This is apparently not a new problem for in "Adult Education in Australia", published in 1970, Berry Durston in his discussion on "Training and Research" noted (page 174) "the paucity of research".

However, it may be useful, having referred to the 1970 survey to use the areas defined by Durston as a basis for comment, and add some other categories. Ref. "Adult Education in Australia", Ed. D. Whitelock, Pergamon Press Australia 1970. Pages 180-181.

Durston's first category of research need was bibliographical studies. This remains an important need. In the research area it is important to note the areas of work, not only so that new areas can be defined but also so that scarce resources are not wasted on replications. For the new adult educator or the

small but growing group of students of adult education, annotated bibliographies in special interest areas of adult education activity are also needed; e.g. adult literacy, agricultural extension, education of married women.

One important indication of progress in the 70's is evident in Durston's second category, namely surveys. The Australian Association of Adult Education, with the financial support of UNESCO and the co-operation of state and federal departments and a wide range of voluntary agencies, was able to complete a provision and needs survey of adult education in Australia in 1978. The survey documents have been published by the Association and are available from the Canberra Secretariat. One of the important lessons emerging from that exercise was that it is a major operation and requires substantial resources. To this end, the AAAE Executive have made representations for a repeat activity for 1980 with greater governmental support.

A third category of research need was defined as methods and techniques. While attention may be drawn under this heading to the importance of small groups in adult learning or the value of audio-visual materials in adult education, there seem to me to be two very important emerging needs in terms of methods and techniques. The first is self-directed learning. If we are to accept (and while the degree may differ, the general point seems to me to be true) the point made by Allen Tough about the importance of the 'individual learning project' in the life of the adult, then the means of facilitating this vast amount of learning must receive priority. Ref. Allen Tough "The Adult's Learning Projects", OISE Research Series No. 1, Ontario, 1971. Secondly, because of Australia's strange geography and demography, special research attention needs, in my view, to be devoted to distance learning. I mean this in terms of the isolated person in the mining community in WA, the sheep station back of Bourke but also those who are isolated because of the urban sprawl, physical handicap, etc.

Durston also mentions evaluation. His emphasis is on 'objective' evaluation, i.e. of the learning. I agree. However, whether it is because of the re-discovery of the fact that educationalists are accountable or because of tighter economic conditions, all educators, including adult educators, need to become aware that judgments are going to be made about their educational programmes by organisations, bureaucracies, resource allocators, prospective students, etc. While it is vital that the participants of adult education should see the growth of their own learning, others who judge adult education from different perspectives need to be shown how the activity is "valuable".

In a rapidly changing society, there are those who want to play down history and historical research. I would not agree and therefore agree the Durston's call for historical research in adult education. The historical perspective on such so-called current problems as adult literacy, education and leisure, industrial training, parent education, would add a dimension to the discussion. Further, the development of significant adult education agencies, e.g. WEA's in various states, YMCA, Churches, even Universities, would give some perspective to the discussion of the newly emerging agencies and institutions.

Another Durston category could be given the title of the "governance" of adult education. Who really makes the important decisions? How is the system controlled? Is there really a system? What is the contribution of the voluntary sector? What are good models for the structure and size of adult education agencies? These questions require answers.

I would like to take a sentence from Durston's discussion and raise it to a special category. We need to know much more about adult educators themselves. Who are they? By what titles are they known? Where are they? Where have they come from? Are they planning to stay in the discipline (or profession) or move out and, if so, where? Apart from being valuable information in itself, I feel that this research should be a prior condition before institutions begin the process of putting the aspiring, would-be adult educators through pre-service and in-service courses. As a potential growth market, there are many institutions ready to embrace the field of training adult educators. Let us not leave out the part-time volunteer. You may be interested to know that the AAAE has a working party looking at the problem of training adult educators.

Beyond these categories, and to be fair to Durston he mentions this factor, the adult educator needs to be aware of research that is going on in other disciplines. Can I suggest further that the adult educator can probably suggest important areas of research. Those working in the community with family groups will surely point to the need for research in the area of the changing family pattern and structure in our society. Those working in large organisations will probably point to the need for research in the field of organisational change and the introduction of innovations. Those working with unemployed people, will surely point to the need to research the social and economic implications of having a permanent and large pool of unemployed in our society. So the story could go on.

To this point, I have looked at the question of definition, made some general observations and discussed some need areas in adult education research. My final point is an attempt to suggest some reasons why I believe that if the present situation is allowed to continue then someone carrying out this same operation in ten years will comment again on a similar large area of need and report on little having been done. However, I hope to finish on a more optimistic note, suggesting some directions in which a solution may be found.

I believe that there has been little progress since 1970 because of two factors. The first is a very personal impression and the second the subject for high level philosophical debate.

I think part of the reason is because of the nature of the adult educator. They are doers rather than researchers. Over a number of years, interest groups at conferences that have had an academic research thrust have been avoided. Others with a more practical bent, one that can be applied in their working situation, e.g. industrial democracy, media workshops, have been over-subscribed.

There is a more recent example. From a small working group at the last AAAE Annual Conference in Hobart, the idea emerged for a conference on 'Innovations'. There was no problem getting people to attend; despite the Albury-Wodonga location. By contrast, with a longer lead time and widespread publicity and personal communication, and a special series of workshops, the response to this Conference has been poor.

There may be other examples, there may be other reasons for what has happened but it seems to me, quite subjectively from my knowledge of the beast, that the adult educator is a doer, a trier out, a learner by experience, and not much interested in academic research.

An alternative point, and this leads to the more serious level of debate, is that the adult educator may not be interested in the sort of research that is

seen as being represented by HERDSA, the scientific, hypothetico-deductive kind. I do not want to engage in the debate at length. Nevertheless, can I suggest that the action-research model (or models) may provide a better vehicle for the adult educator, as he/she is involved in live-institutions, in a changing environment where variables cannot be held constant and where objectivity cannot be gained and subjectivity needs to be recognised and accounted for.

Therefore, I do not see the profession of adult educators responding to the need areas for research outlined above, particularly because they appear to be more within the traditional field of research. One would then look to the tertiary institutions.

On the surface, or on a detailed scrutiny, the tertiary institutions would not seem to be able or willing to set adult education research as a priority. Universities seem to be reacting to reduced funding by retreating from 'marginal activities' such as adult education. One half of one percent does not give the CAE's much room to manoeuvre.

There is, however, one bright hope in the Williams Committee Report, or I see it as a bright hope. The call in the Report for Universities to make their stand in research may re-ignite an interest somewhere in the hallowed university decision-making halls to seek to develop a special research facility in adult education. I would see its function as working in the areas outlined above. I would see the problem as being that universities are retreating from adult education. Perhaps there is the possibility that some "Education" faculty, facing the declining demand for school teachers, will take seriously the notion of lifelong education and discover the adult.

Finally, if my assertions about adult education research needs and the adult educator are correct, then there may be a role for HERDSA in the on-going scene. HERDSA may have an important dissemination function to the scattered adult educators out there who want to know about what is going on in research or who can suggest fields where research is needed. By Conferences and particularly publications, this function may be carried through.

I feel confident that the AAAE, through its Executive, publications and conferences, would be interested in working with HERDSA on this problem.

At the organisational level, I trust this initial contact has been useful for both organisations and hope that it will be the beginning of an on-going contact and dialogue with advantages to research and adult education.

# Staff development for experience-based learning

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&

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The aim of this paper is to describe a project designed to assist people who supervise students or trainees in experience-based learning situations and to discuss some of the implications for staff development in tertiary institutions more generally.

It focusses on what is meant by experience-based learning and contrasts this with what is often vicarious learning from books and lectures. Two aspects of the role of supervisors in experience-based learning are discussed: the authoritative aspect in which the supervisor acts as an expert practitioner, and the facilitative aspect in which the supervisor acts as a guide and assists students to plan and monitor their own learning.

The project concentrates on the facilitative role. A Staff Development Guide, a set of training materials for use in workshop settings, has been produced to provide activities which aim to develop skills in the facilitation of learning. The Guide is currently undergoing field trials in New South Wales, the ACT and California with a variety of secondary and post-secondary groups.

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## What is Experience-based learning?

In his Miscellaneous Essays, Thomas Carlyle wrote "Experience is the best of school masters but the school fees are heavy." This comment on the role of experience in learning both highlights its importance and hints at its potential problems. In recent years there has been a renewed examination of the role of experience in education. The terms 'experience-based' and 'experiential' are now used to distinguish first-hand learning through direct experience of various kinds from learning that results from studying a discipline or subject primarily through reading, listening to lectures and discussion.

High on the list of problems associated with learning from experience are those associated with time. It is clearly inefficient to leave learners to discover anew all that has been established in the past. Books have long been a major storehouse of human knowledge and learning via the written and spoken word has been a major feature of education. Experience-based learning aims to provide students with an appropriate blend of direct experience and traditional study to enable the learner to benefit from the advantages of both without exacting the high price that Carlyle observed.

Experience has always played an essential role in learning. The finest lecture or book is of minimal value to a learner who has no experience of the concepts being discussed. Traditional study by reading, lecture and discussion builds upon concepts that the learner has acquired from experience. In other words, a minimum of experiential learning has always been necessary and in certain areas of study, the school or academy has had to make provision for such experiences. Excursions, visits, practical work and laboratory activities are just some of the ways that experience was provided.

The current increase of interest in the use of experience-based learning in education should not be regarded as simply an alternative way of bringing about the same learning. The importance of experiential educational methods lies in the fact that they result in a different kind of learning.

When what is required is acquaintance with a field of knowledge, emphasis on traditional study may be appropriate. The learner's first need is to become familiar with the discoveries, theories and views of those scholars who contribute to the field. The traditional approach of reading, lecture and discussion is probably the most efficient and effective way to provide this background information which then provides a base for experiential approaches in the future or may be sufficient in itself if a theoretical knowledge is all that is required.

For many areas of study now undertaken, such an approach is neither efficient nor effective. Significant among these areas are the sciences and professionally oriented courses. The knowledge explosion has resulted in a re-evaluation of what should be learned in an educational programme. Even in areas where it is possible, to learn about a subject or discipline is not enough. The point can be dramatically illustrated by considering the problem faced by people at all levels in the area of electronics. Advances in materials, devices, design and manufacture have occurred at such a rate that most of the specific knowledge of the new graduate is obsolete a few years after graduation. When bodies of knowledge are relatively dynamic or when ability to apply knowledge in real situations is required something more than simply learning about the discipline is needed. In such circumstances it becomes imperative that educational programmes not only lead to the acquisition of a knowledge base but that they also develop the student's ability to manage his or her own learning on a continuing basis. Until recently, learning how to research the body of information contained in the literature of a discipline was reserved for those few percent of students who did honours and research work. Now, the ability to trace and utilize information is an important skill for a large proportion of the workforce.

When knowing how to approach new learning tasks is added to the list of outcomes expected at the end of a course of study, experiential learning takes on a new importance. Experiential learning puts the learner directly in touch with the realities being studied. When properly managed, experience-based learning involves testing the dynamics of reality to learn more about it and apply what is learned to achieve a desired result. As a result, students gain insights into themselves as learners and problem solvers as well as into the phenomenon under study.

#### Some problems in the supervision of experience-based learning

There is nothing new about experience-based learning - it can be found in many contexts at present, mainly in professionally orientated areas. For example, clinical practice in the health professions, field work in the biological and earth sciences, community placement in the social sciences, and various kinds of project and practical work everywhere. Many educational programmes make use of off-campus or out-of-school activities in order to provide the learner with appropriate learning experiences.

The apprenticeship model which has dominated the training of tradespeople places the learner in the work environment for the major part of the time. Formal classes, often provided by an educational institution, have aimed to develop an understanding of theory and principles of practice which support the work of the skilled tradesperson.

A variety of approaches have been used in the training of professional en-

gineers. The sandwich course requires a year or semester of field experience part way through the academic programme. Another approach calls for a year of approved professional experience as a requirement for graduation. And, of course, part-time study has been a common path taken by people working in engineering who wished to gain professional qualifications.

For many students, the value of such field-based learning has been less than might be hoped. Often, field-based learning meant learning in chaos with the learner lacking the kind of supervision necessary to draw the most from what was experienced.

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\* Further discussion on experience-based learning and current developments in Australia can be found in our collection Experiential Learning: Developments in Australian Post-Secondary Education (Sydney: Australian Consortium on Experiential Education, 1978)

Regardless of the location of the learning activities, the role of the person supervising the learner directly influences the extent and quality of the learning.

When the learning activities of an experiential learning programme occur within the school or campus, their supervision is usually managed by teachers. If not specifically trained in education, these people at least identify teaching as their control role. When off-campus or field-based learning activities are arranged, supervision may be the task of a teacher, or a person who works on the field, or a combination of the two. One arrangement involves the coordination of field work by academic personnel with on-site supervision being provided by a practitioner.

Two major aspects of the supervisory role can be identified. These apply equally to classroom-based and field-based learning.

The authoritative aspect of the role is characterised by a focus on the knowledge and skills that need to be learned for proficient practice in a particular field. There is a concentration on the tasks to be performed and the outcomes that are required from the student in terms of the content of what is to be learned. The teacher or supervisor acts as an expert in the field and instructs the student on what is required.

The facilitative aspect is characterised by a focus on the process of learning for an individual student and how a student can effectively gain the knowledge and skills of the field. This aspect concentrates on the needs of the student, provides assistance in the identification of learning goals, the planning of learning experiences, the monitoring of progress and providing on-going feedback to the learner. The teacher or supervisor acts as a facilitator of learning and a guide to how learning can take place.\*

For a student to learn effectively from experience the supervisor needs to combine both aspects and be aware of the importance of both. The most desirable outcome of any educational experience should be the development of knowledge and skills in the substantive content of the field of study, the development of knowledge and skills in learning how to learn about the topic of study, and of decreasing dependence on the expert supervisor. If the supervisor emphasises

the authoritative role then there is the danger that students might develop specific technical skills at the expense of knowing how to manage their own learning and if the facilitative role is over-emphasised there is the danger of the student failing to develop some of the content expertise which practitioners may regard as essential.

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- \* An extensive discussion of authoritative and facilitative interventions is given in Heron, J. (1975) Six category intervention analysis Guildford, Surrey: Human Potential Research Project, University of Surrey.

Supervisors are often faced with some role conflict between the needs of the situation and the needs of the student. For example, in a hospital setting the ward sister responsible for student nurses has to provide for proper patient care and for providing appropriate learning experiences for the students. This can often be difficult to arrange at the best of times, but when the supervisor has been trained almost exclusively in the authoritative role, student needs can be lost altogether.

It is commonly the case that the authoritative aspect is more highly developed than the facilitative, particularly when the supervisor is employed principally as a practitioner and secondarily as a teacher. That this is also the case for many tertiary teachers whose main task is teaching is outside the scope of the present discussion.

Three reasons can be suggested for such an imbalance. Firstly, the training and experience of the practitioner typically encourages a focus on professional performance with little examination of how professional competence is best acquired. Secondly, the relationship that develops between the supervisor and trainee sometimes corresponds to a supervisor - junior-employee relationship. In each case, to the extent that the learner's attention is dominated by the tasks themselves, so the opportunity for reflection and consolidation is reduced. The higher order learning goals of experience-based learning can, as a result, be overlooked.

Thirdly, the authoritative aspect of supervision is probably more comfortable for the supervisor. Performance on tasks and the outcomes of tasks are usually more readily monitored than the students' ability to approach new problems and initiate learning for themselves.

The effects on the student of the facilitative aspect tend to be more private to the learner, more individual and less directly observable by the supervisor. Further, the supervisor usually has only his or her own experience as a learner to draw upon when attempting to assist others learn. To a large extent, then, the facilitative aspect can demand knowledge, abilities and insights that many supervisors have not acquired.

Both the facilitative and authoritative aspects of supervision are vital in experience-based learning. There is a need to develop a more general awareness of the facilitative aspect of supervision and to provide the opportunity to develop that ability.

Experience-based Learning and the Facilitative Role of Teachers - a materials development project.

The need for resource materials that will assist people develop the

facilitative aspect of the supervisor's role has resulted in a project on Experience-based Learning and the Facilitative Role of Teachers. This project originated in the Far West Laboratory for Educational Research and Development in San Francisco, and is presently being conducted in Australia in association with the Sydney-based Australian Consortium on Experiential Education.

The initial product of the project is a Staff Development Guide containing instructions and suggestions for activities and readings for a series of workshop meetings. The purpose of these materials is to provide an opportunity for teachers and others in supervisory capacities to learn about and to practice skills involved in the facilitative role.

This purpose is achieved by a combination of features:

1. The learning activities and readings are grouped into units, each of which focusses on one aspect of the facilitative role. The units are entitled:
  - I. The Nature and Rationale of Experience-based Learning and the Facilitative Role of Teachers
  - II. Planning With Students
  - III. Preparation For Field Placement
  - IV. Monitoring Student Progress
  - V. Assessing Student Progress
  - VI. Orienting Others
2. Learning is designed to occur through action and use, and is supported by readings between workshop meetings. The competencies to be acquired are most appropriately developed in an experience-based setting with facilitative supervision.
3. The materials are structured, with directions provided both for workshop participants and for a person who will act as a training coordinator. As a result, the training coordinator provides a model of the facilitative role through the management of the workshop and field activities, and the participants experience both the role of supervised learner and the various aspects of the facilitative supervisory role.
4. Each Unit of the materials offers a variety of learning activities. Training coordinators and participants are encouraged to adopt and add activities to meet the needs and special interests of the group.

The activities range from reading and discussion to field activities involving observation and participation. Insight and practice in aspects of the facilitative role are gained through scripted vignettes of interactions between students and supervisors, role plays based on descriptions of problem situations and discussions of participants experience in developing their facilitative skills. Workshop participants are encouraged to keep a journal of their own experiences as a means of encouraging reflection and heightening their awareness of the kinds of difficulties encountered by students in experience-based learning programmes.

The central aim of the Staff Development Guide is to develop skills of facilitation that enable the supervisor to work with students in planning, monitoring and assessing learning. The goal lying behind this aim is to assist those being supervised to move towards greater self reliance in the management of their own learning.

Once teacher and student have progressed through the planning stage, they are ready to engage in what is probably the most difficult phase of any educational process---the learning activities themselves. In experience-based programmes, this phase is further complicated by the number of people involved, the fact that many experiences occur away from the "school" site, and that what occurs at an experience site is likely to be much more complex than what occurs in the classroom situation. It is to be anticipated, and even welcomed, that the learning plan will undergo continuous revision.

How does the teacher handle the complexity of the monitoring process? It is a difficult question to answer simply. Here, perhaps more than anywhere else, the sensitivity, creativity, and ingenuity of the teacher will be drawn upon.

: Learning Activities:

1. Teacher Perspectives on Monitoring  
*The group invites guest speakers to discuss monitoring techniques in experience-based programmes.*
2. Dealing with a Learner's Lack of Confidence  
*Teachers analyse facilitative behaviour on the part of a teacher in a monitoring session with a secondary student. Vignette.*
3. An Unsuccessful Interaction  
*Teachers identify inappropriate facilitative behaviour in a monitoring session with a post-secondary student. Vignette.*
4. A Classroom Monitoring Problem  
*Teachers examine some problems of monitoring students in a secondary classroom-based project. Case study.*
5. Relating Site Activity to a Student's Learning Plan  
*Teachers select a strategy to deal with a problem and identify the educational assumptions behind their choice. Case study.*
6. Handling a Problem with a Resource Person  
*Teachers explore different problem resolutions and discuss the likely effects of each of these on both student and resource person. Vignette.*
7. Handling Student's Personal Problems  
*Teachers exchange viewpoints and develop guidelines for dealing with students' personal problems.*
8. Observing Monitoring Techniques  
*Teachers act as observers or participants in one or more monitoring sessions.*
9. Self-Assessment  
*Teachers analyse personal learning from Unit IV and specify additional competencies required.*

READING: Monitoring Student Progress

A principle which has guided the development of the Staff Development Guide is that learner responsibility and quality learning go hand in hand. Two key assumptions are offered as a guide to supervisors when making decisions concerning the learner:

"Every learner should be headed toward individual responsibility. A modified way of working with students is needed, and being responsive to individuals and situations may be the key.

The teacher's (supervisor's) responsibility includes the assurance that selected learning activities are of high quality. Therefore, the teacher must be able to select and monitor learning activities wisely through appropriate assessment of learner needs and interests, providing feedback, replanning, extending and integrating learning."

(Experience-Based Learning and the Facilitative Role of Teachers: Staff Development Guide, Field Trial Version, San Francisco: Far West Laboratory for Educational Research and Development Jenks, C.L., Murphy, C.J. and Simms, D., December 1978, p.39).

These same assumptions are reflected in the tone and approach adopted in the Guide itself. Throughout the workshop meetings participants are expected to maintain a high degree of self-direction and responsibility for their own learning.

The Guide has been specifically written to exemplify congruence between espoused principles and the kind of learning experiences provided for workshop participants. Observation of others in the supervisory role and direct experience in both the learner role and supervisor role all work towards developing the kinds of awareness and abilities necessary to enhance the facilitative aspect of supervision.

#### Australian participation

The Field trial version of the Staff Development Guide is now being evaluated in a wide range of settings in and around San Francisco and in Sydney and Canberra. This version is based upon the revision of a draft guide which was extensively reviewed in Australia and the U.S.

The Australian field trials will not only provide information for the published version of the Guide, but will enable an evaluation of its flexibility in assisting supervisors who work in a wide range of situations.

Trials are being conducted with people working in both secondary and post-secondary education. In the secondary area, workshops based upon the Guide are being run as part of the initial training of teachers and as an in-service staff development activity for practicing Careers Advisors. In post-secondary education, the Guide is being used in staff development activities with a team of tutors in a first year medical course and with clinical supervisors who work with students of occupational therapy and physio-therapy. Workshops are also being planned for staff developing a course for adult educators, for Trainers

and Staff Development Officers in the Commonwealth Public Service, and for people working in the Outward Bound movement.

The revision phase commences in the middle of 1979 and the final version of the Staff Development Guide should be available early in 1980.

### Is a materials development project appropriate?

The idea of developing educational materials centrally to be used for courses and workshops is now rather unfashionable. Both in the United Kingdom and the United States the explosion of national curriculum development projects of the 1960's has now subsided. There are many reasons for this, not least being that financial support for such projects has dwindled. This decline has occurred for good reasons, the chief of which is that the high quality products which were produced often did not find their way into classrooms in the form that was intended. Teachers, not unnaturally, did not take readily to materials which often represented a fundamental challenge to their existing ways of teaching and introduced material with which they had little experience. In other words, teachers did not feel they owned these products and perceived them as a threat to their professional competence.

If this is the case why, it may be asked, should the project on Experience-based Learning and the Facilitative Role of Teachers choose an approach based upon a package of materials? The main reason for this was the recognition that, in most situations, these materials were not replacing some pre-existing activity, or at least, were not replacing an activity which was perceived to be functioning well. The main audience for the materials in Australia has so far been groups which have received little or no training in educational matters at all.

### What does this project contribute to the general problems of staff development?

It is our belief that the project is important in at least one other way. Apart from its worth in assisting supervisors in improving their competence, the project provides a model for staff development. Staff development programmes seek to produce change in actual performance. For this to occur, not only must new skills be acquired but these skills and the reasons for developing and applying them must be valued by the participants in the programme. Valuing and commitment to change come from the person and cannot be imposed from outside.

There are two aspects of the approach adopted in the Staff Development Guide that contribute towards commitment to change. The first is the experience-based approach of the programme, and the second is the nature of the relationship between the learner and the supervisor. The key points are well made in the Guide (drawing upon the work of Argyris and Schon\*):

"...field experiences simultaneously enhance the learner's theoretical knowledge of the field, process skills in the field, and the ability to monitor one's own behaviour, draw out its implications and modify it.

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\* Argyris, C. & Schon, D. Theory into Practice: Increasing Professional Effectiveness. San Francisco: Jossey Bass, 1974.

Crucial to this process...are: (1) the availability of valid information from other persons, (2) free and informed choice on the learners part for tasks to be undertaken, (3) a learner commitment to the choice and monitoring of the learners chosen task by another. Since the learner must be willing to participate and critically evaluate his or her own performance, the supportive role of the supervisor is extremely important." (Jenks et al, op cit, p31,32.)

The approach to the supervision of learning being promoted by the Guide rests on three assumptions:

"...that you learn best when you are personally involved in the learning experience, that knowledge has to be discovered by yourself if it is to mean anything to you or make a difference in your behaviour, and that a commitment to learning is highest when you are free to set your own learning goals and actively pursue them within a given framework." (Jenks et al, op cit p.25.)

It is our experience that when teachers and supervisors work in a way consistent with these assumptions in their interactions with students then these assumptions become fair descriptions of what does, in fact, take place.

Finally, in our view, it is profitable to see all staff development activities in tertiary institutions as the supervision of experience-based learning. The teaching staff for whom courses and consultations are provided are day-by-day engaging in teaching, which under suitable conditions could provide valuable learning experiences for them and lead them to the improvement of their own teaching. Experience alone does not lead to learning though. What is required is a non-threatening setting in which teachers can reflect upon and analyse what they are aiming to do in their classes and what does in fact occur, and be provided with the support they need to do this. The products of the present project provide a mechanism for conducting workshop activities which focus on the facilitative role of teachers. What is required in addition is the institutional support which can allow such workshops to take place and can enable teaching staff to feel that the improvement of their teaching is something which is important enough to be formally recognised by their institution as an essential part of the professional development of its staff.

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# European approaches to staff development

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The paper gives a survey of different approaches to staff development in Europe, especially the U.K., the Netherlands, Scandinavia and West Germany. These approaches are discussed within their context and constraints of institutions and systems of higher education in the different countries. Recent developments of concepts of self-confrontation are described as they are used in staff development.

Different elements of communication theory are used to analyse these approaches. Furthermore, it is discussed how concepts of 'traditional' microteaching need to be modified to be useful in staff development, based upon recent research in London, Copenhagen and Aachen. The different approaches are related to and compared with models of Teacher Education. Finally, recent activities to cope with institutional constraints are described.

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## Introduction

During the 60's and 70's, the students' numbers in institutions of Higher Education in most countries of the world - among them all European countries - increased dramatically. It brought about a considerable unrest and turmoil affecting whole nations, as is well known to all of us. One of the groups particularly criticized were university teachers who appeared to stick unmovingly and unmoveably to traditional methods of teaching and management when everything else around them seemed to have started changing. Hence, the necessity became obvious to improve first of all teaching and administration in Higher Education. Centres designed to introduce innovations in teaching were established in many universities. Some of them initially considered their task to be research and development on educational technology, but they started moving into staff training by offering courses on educational technology (e.g. in the U.K. and the Netherlands) Some other centres started by doing research into Higher Education, but they also extended their programmes into staff development in order to link with faculty inside the university (e.g. in Germany).

Nowadays, staff development programmes look very much the same in Europe wherever they are being offered, as a result of mutual contacts and international cooperation. In the following paragraphs, I shall describe some features of these programmes taking into consideration programmes implemented in the U.K., Sweden, Denmark, the Netherlands and W-Germany. I am afraid, neither France or Italy, nor any of the other European countries have joined into cooperating with the countries mentioned, in terms of staff development. Therefore, I shall report only on these countries discussing programmes I have been personally involved with through cooperation or exchange of experiences. The programmes are listed in table 1. I am referring to these programmes in this paper by using the term 'we'. The HDZ Aachen (Centre for Research and Development in Higher Education) - my home institution -

offers one of the programmes to be described here: simultaneously, it has been involved in several projects of interuniversity cooperation both on national and international level. My paper has been written on this background.

## I. Staff development courses: European experiences

### The aims of programmes

The aims of staff development programmes in the countries mentioned above have emerged as the following

- to make the participants aware of the problems of university teaching by sharing experiences and common concerns
- to offer informations about teaching by referring to concepts of educational technology, learning psychology, group dynamics etc (supported by written materials, e.g. hand-outs, references, occasional papers etc)
- to practice various methods of teaching including innovative approaches (e.g. personalized system of instruction, small group teaching, project orientation etc)
- to bring about change in the structure of student-teacher communication toward a more symmetrical process where both teachers and students think of themselves as learners
- to stimulate as well as encourage the participants to support innovations and reforms in university teaching, taking into account boundary conditions of the participants' professional lives within the university.

Not all of these aims summarized here are followed up in every course - the courses vary in detail from university to university, and their final design is dependent on both the individual teacher who is in charge of the course, and the particular group of participants he or she is working with. Obviously national differences play nearly no role in it.

### Approaches

To achieve these aims, the centres have adopted approaches combining residential courses with seminars and study groups, supported by short workshops on special topics.

A typical programme comprises

- a residential introductory course lasting between 4 and 7 days, dealing with teaching methods, course design, AV-media, students assessment etc.
- study groups meeting weekly for several months
- a series of workshops on simulations and role play, improving lecturing, small group teaching etc.

Several centres offer also two-year part-time courses leading to a Diploma (or M.A.)

### International cooperation

As mentioned before, some centres in Western Europe - including HDZ Aachen- have

started to exchange experiences and to cooperate across borders. We hope, in this way,

- to improve mutual understanding of our different systems of education
- to gain additional stimuli to implement innovations in teaching and learning
- to increase knowledge of each other's staff training methods

During the last few years, the following joint courses have been offered (or are to be offered in 1979/80):

- a series of tri-national workshops run jointly by a British-Swedish-Dutch team (1976 - 78)
- a German-British four-day workshop organized by the HDZ Aachen (1976)
- a truly international course run during the 4th international Conference "Improving University Teaching", Aachen 1978
- a German-Swedish course (planned for 1979)
- a series of four-national courses (planned for 1979/80) involving centres in the U.K., Denmark, Netherlands and W-Germany.

#### Results of evaluation

These national and international programmes have been evaluated by questionnaires, interviews, observations etc. The results show that

- the information offered is appreciated by participants only if it is truly relevant to their specific problems in teaching
- most participants experience change of attitude and behaviour in teaching: e.g. from teacher-centered toward student-centered approaches
- several months after the course (or even later) participants report (and show in their teaching) the impact of the induction course they attended: their willingness to structure their teaching by using objectives, or concepts of self-instruction; their eagerness to get students involved in learning etc.

#### Difficulties encountered

In the first instance, it is surprising to see similar approaches emerging in countries which boast of having different traditions of language and civilization. I would like to suggest that universities show similar structures, and nourish similar beliefs, because, so far, Research is the main concern leading to promotion and tenure. Thus, universities are agents of socialization through Research, as supported by recent research especially in Germany. Hence, we have got to go similar ways in order to cope with similar problems in our different countries. But too few teachers feel compelled or stimulated to take advantage of what we offer, and even less teachers can transfer experiences gained in our courses into their teaching practice, hampered by institutional constraints.

Thus, we are trying to move into two different directions:

- that for a teacher, the process of improving his or her teaching should be a stimulating and intrinsically rewarding experience

- that the institution he or she is working in should reward improvement of teaching and reinforce extrinsically the teacher's individual concern about his or her teaching.

In the following two paragraphs, I shall discuss these two points in more detail.

## II Teachers' concerns and the structure of staff development courses

### Teachers' concerns

Concerns of university teachers have been recently investigated in the U.K. (1) and Denmark (2). The findings suggest that

- inexperienced teachers tend to be 'ego-centered' (one of their main concerns is: not to 'loose the thread' during presentation and discussion etc)
- experienced teachers tend to be 'teaching-centered' (e.g. their concerns are: teaching methods, students assessment etc).

Furthermore, the results show that both groups are basically concerned about their teaching. As one of our colleagues has put it: 'We want to do our job well, and we spend time and effort discussing possible improvements with our colleagues and sometimes even with our students. We are conscious of our weaknesses - and we are sensitive about them' (3)

We can learn from this statement the importance of taking into account weaknesses or anxieties of our colleagues whom we are intending to assist in improving their teaching. It is characteristic of most of the courses considered here that efforts are made to deal in earnest with the participants' actual situation in their multiple roles as teachers and as researchers and administrators. Some of the courses deal intensively with universities as agents of socialization. The result of this is that during those courses creative and active participation are more common than receptive behaviour and the participants are involved in the instruction process to about the same degree as the persons in charge.

### Strategies and ideas underlying staff development courses

A common element to most of the various approaches to staff development is the underlying rationale of assisting university teachers to improve their teaching competence without implying them to be incompetent in the first place. Obviously teaching is ideal for generating and maintaining motivation to improve competence. As the main strategy for achieving this goal, self-confrontation is being used. As Perlberg points out: (4)

"The discovery of discrepancies... between experienced and observed behaviour and intentions or goals is both an activating and motivating force, leading to its own reduction".

Following Perlberg and others, many faculty development courses offer university teachers the concept of self-confrontation as a tool and technique to diagnose gaps between reality and goals and to narrow these gaps. Self-confrontation implies the transmission of information about the self from outside sources, e.g. through Video, motion pictures, or any oral or written, verbal or nonverbal communication. Within this concept of staff development, the person in charge of the course may see his/her role as a 'consultant', rather than as an expert. The consultant strives for a structure of communication which allows all participants to be partners of communication on equal terms. We may call this notion 'symmetrical communication'.

In reality, however, cooperation and symmetrical communication require a continuous effort to be reached: as people become aware of their inner drives, motivations and rationale of acting, as well as of external constraints. Thus, there are rules to be observed by the consultant. The participants, however, may see the use of rules of communication as manipulation. Hence, it is necessary to lay open the strategy underlying consulting activities, as soon as it appears sensible to do so.

At the HDZ Aachen, we are using three different categories of communication and interaction structuring consulting activities: they were suggested by our team members Werner and Drexler (5):

A) interactions in preparation for mutual understanding:

- the consultant may induce symmetry of communication:  
(e.g. he/she may encourage those participants who non-verbally announce their willingness to share in the discussion)
- the consultant may ascertain comprehension:  
(e.g. he/she may induce a 'controlled dialogue' by asking participants to repeat statements of predecessors before responding)
- the consultant may act strategically:  
(e.g. he/she may prevent discussions of issues likely to arouse conflicts)
- the consultant may act in terms of maintaining 'fairness' and 'tolerance':  
(e.g. he/she may take care not to let any participant be offended or injured by unbalanced opinion:)

B) interactions temporarily abandoning cooperation and communication

The consultant may be forced to abandon his/her initial aim of integrating every participant into his/her efforts to achieve symmetry of communication. He/she may apply the strategy of keeping the participant superficially satisfied so as to prevent him from interfering: the consultant may go on talking with him without responding sympathetically. We may consider it a 'paradoxical' situation.

C) interactions which occur once symmetry of communication has been achieved.

In such situations the consultant can abandon all educational strategies: he/she can communicate with the course participants openly and unreserved. Affective and cognitive domains of learning are involved into the interaction process to the same extent, participants are both active and responsive: as whole and responsible persons - a notion which resembles the concept of 'confluent education'. (6)

#### The role of students in courses for university teachers

It is important that students participate in staff development courses because they deliver fundamental feedback. In so-doing they learn to articulate their own needs and difficulties in studying, and thus, take over some responsibility for improving the teaching style of their own teachers. It is essentially left to the students' activity and creativity to bring about change in the structure of students-staff communication.

At the HDZ Aachen, two groups of students are assisting in running these courses: First, students who are integrated into the course team; they may even be partly responsible for the design and conduct of the courses, Second, some of the students enrolled in classes run by participants are given the task of "simulating" the

audience for their own teachers and so making the simulation of teaching events possible. Furthermore, these students join analyzing the "real" classroom events and subsequently counsel their own instructors. The advantage in giving this task to students may lie in that they tend not to raise feelings of anxiety or competition among the teacher participants. This phenomenon may be due to the students' supposedly inferior role within the university hierarchy. Furthermore, students have proved to be shrewd (through sometimes awkward) judges of whether the course teams stick to their aim in bringing about change in university teaching, or whether they are satisfied by the apparent smoothness - and hidden ineffectiveness - of their courses. But we may consider involvement of students in staff development a feature special to W-Germany: in my country, students are 20 or 21 when they enter university education, and they finish with 26 or 28, with their first degree. Hence, student members in my course team have the same age as lecturers or research fellows in the U.K.

### Self-confrontation through Video

In some of the courses considered here the framework for self-confrontation of university teachers has been adopted from Microteaching using Video-feedback. The concept of Microteaching is based upon the experience that training of teachers is more effective if performed

- in a 'laboratory' situation (rather than in a 'real' classroom)
- with small groups (rather than in front of a large class)
- using a brief sequence of 5-15 min (rather than a whole lesson)
- presenting material which may be easy to teach (rather than complex material)

There are two more elements of Microteaching which in the programmes considered here are used in a modified way:

First, the training of isolated skills - which we tend to replace by improving teaching behaviour in a more complex context of classroom interaction and communication

Second, the use of pre-structured or pre-defined criteria of 'good teaching' as a basis for assessing teacher performance in a microteaching exercise - which we try to replace by the participant's own intentions stated before the exercise in his/her own terms.

In the viewpoint of the HDZ team, both these strategies are governed by the perception of 'symmetrical communication' as discussed before which, in these exercises, we may put forward (according to our roles as consultants or fellow participants) by personal statements e.g. 'Personally, I felt threatened by the way you asked us this question'.

Thus, teachers are challenged to find out by themselves about how to improve their teaching: They are, however, guided and assisted by the consultant. This pattern shows some similarity with what in the U.S.A. has been widely discussed as "Competency/Performance - Based Teacher Education Movement". (7) The model specifies the competencies to be demonstrated by the student and makes explicit the criteria to be applied in assessing the student's competencies. Competencies referred to are attitudes, understandings, skills, and behaviours which the student may help to determine (7).

The common goal of staff development as described in this report, and "Competency/Performance - Based Teacher Education" is to increase competence and to improve performance of teachers (e.g. University teachers) in 'real' teaching situations

through specially designed programmes comprising practical exercises in teaching simulations: it is not surprising to observe common strategies being used in staff development as in teacher education. It can be argued, however, whether it is possible - and indeed acceptable to university teachers - to explicitly define criteria to assess university teachers' competency. In our viewpoint, university teaching seems too complex a process to be described in behavioural terms, and it would contradict the notion of symmetry of communication if we tried to define in advance objectives to be met by our colleagues in their roles as course participants. Nevertheless, there are certain skills which can be trained according to pre-set objectives, and many participants appreciate to be told what to expect in courses or workshops they attend. Hence, several of the programmes described here have integrated well-defined skill-training workshops into an approach which - as a whole - is open to negotiations with each new group of participants.

### III Institutional constraints and institutional rewards

Many staff development courses as described here are well received by participants. There is criticism prevailing, though, that they cannot stand the test of everyday teaching in a normal university environment. The institutional constraints mentioned among the aims of our programmes are too strong to be withstood by a lecturer who - returning from one of our courses - would like to put time and effort into improving teaching rather than developing further his or her research. He or she may be considered to have 'backed the wrong horse'. Hence, it is being argued - and we have tested in several innovative projects - that it is necessary to involve the department as a whole (teachers, students, administrators and technical staff) into revising its philosophy of education. For this task, the consultant requires a detailed knowledge of the way the institution works both in itself and in relation to its environment, and the consultant must be acceptable to all groups inside the department.

As an example, I shall describe the work of one of my team members who came into our centre (as an engineer) for some initial training as a consultant. Simultaneously, we ran a training course for staff of the department of mechanical engineering he came from; it was attended by the majority of the departments' junior staff. He then returned to his department to work on improving teaching while he kept close contact with our centre. He ran introductory courses on teaching methods for his colleagues; furthermore, he counselled and assisted them in running their classes, which included assisting in preparing AV-materials and hand-outs, and classroom observations with subsequent counselling sessions. He also ran his own classes - like his colleagues, and he tried to stimulate re-thinking of the department's philosophy of education in many informal talks. The success of the project was due to three conditions:

- the consultant was not working by himself, but he was supported by some of his colleagues from within the department, from the start; the support was gained through the HDZ's training course offered previously.
- within the department, there was an increasing willingness to discuss matters of teaching in a cooperative manner, as a result of the HDZ's training course
- the support of the head of department had been gained in three steps
  - 1) he complied to his staff attending our course
  - 2) he then agreed to re-employing our team member (on our expenses) to assist his staff in improving their teaching
  - 3) he finally asked us to visit his lecture (like those of his staff) to be recorded for subsequent analysis and counselling

We have learned from this project - and from similar projects - that it is possible, in this way, to have some impact on teaching in a departmental environment.

Here we may go back to where we started from: It is not our task to teach teachers how to teach better according to what we consider better teaching: we can, however, support and assist teachers who want to improve their teaching and we can, in this way, contribute to making the departmental environment conducive and encouraging to communication and cooperation on issues related to teaching and learning. Rewards for teachers committed to better teaching may lie in obtaining promotion or tenure but it seems unlikely that the career system in Higher Education will change quickly. Rewards may also lie, however, in that they get feedback and appreciation from students, from their colleagues and from their head of department that they do their job well.

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Table 1

	United Kingdom	Sweden	Denmark	Netherlands	W-Germany
Students enrolled (1975) (8)	332 000	113 000	60 000	120 000	836 000
Institutions Considered here	UTMU, U.o.London IET, U.o.Surrey	Nat.Swedish Board of Univ. and Colleges, Stockholm	Inst.for Studies in HE, U.p. Copen- hagen	D en D,Rijks- Universiteit Utrecht	HPA, U.o.Bochum HDZ, Aachen
basic courses	UTMU: 5 days(res) IET: 7 days (res)	3 weeks (res)	6 weeks,8 hrs/week (part-time)	5°days (res)	HPA: 7 days (res) and 12 weeks (part- time) HDZ: 2 days and 8 weeks (part- time)
Workshops	2-4 days (res) 4-8 weeks (part- time)	Sweden offers one-week or four-week courses for staff after 2, 5 or 9 years' service	1-7 days (res)	2-5 days (res)	1-4 days (res)
long courses (Diploma or M.A., part-time)	2 years		1 year	1 year	1 year (combined out of courses as above)
remarks	Courses based upon recommen- dation of the Committee of Vice-Chancellors and Prinipals (1971)	Courses compul- sory for new staff (Since 1977)			HPA courses are jointly offered by 7 universities

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# Preventing Industrial Conflict in Higher Education

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The working assumption of the paper is that industrial conflict can be avoided if a mutually fulfilling work relationship can be established between administration and staff. In establishing such a relationship the administration would be expected to contribute to the general welfare of staff, while staff would be expected to contribute to the viability of their employing institution. Trust should be established between administration and staff if staff are seen to be furthering the viability of their employing institution and if the administration is seen as truly contributing to the general welfare of staff. An implication of such trust should be the avoidance of conflict.

One section of the paper describes how staff can contribute to the viability of their employing institution. The first step in doing this is to develop indicators of viability. These indicators are developed by having various groups describe those activities and conditions that they believe are indicative of the institution's capacity to grow, survive, and adapt. The paper describes the questions and techniques used to elicit these indicators as well as the strategy used to select the most critical indicators of viability. Job descriptions for staff are then developed around the most critical indicators of viability.

A further section of the paper discusses monitoring. Two processes need to be monitored, the first being the extent to which staff perform those jobs and tasks that are needed to maximise the viability of the enterprise, and the second being the extent to which the administration provides those benefits and programmes needed for the fulfillment of staff visions. Both the non-performance of tasks and the failure to provide benefits are serious problems but they should never be resolved in a bi-partisan manner because bi-partisan solutions further distrust and conflict. The final section describes how non-partisan solutions to these problems can be developed and central to the resolution process is an expanded version of the ombudsman concept.

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## INTRODUCTION

The working assumption of this paper is that industrial conflict can be avoided if a mutually fulfilling work relationship is established between staff and administration. Each section of the paper presents concepts that can be used in practice. These concepts were developed because the working assumption of the paper was found correct, given comments made in the literature which indicated that conflict seemed to be avoided when administration and staff had established an acceptable interdependence or a mutually fulfilling work relationship (Cooper and Bartlett, 1976).

The concepts presented follow a certain logic, they describe the particular responsibilities of staff and administration with respect to establishing a mutually fulfilling work relationship. The first section of the paper describes the responsibilities of staff with respect to establishing this relationship. The second section describes the administration's responsibilities and the third section describes the joint responsibilities of both staff and administration. The final section describes personnel and organisational factors that may limit the possibility of establishing a mutually fulfilling work relationship.

## STAFF RESPONSIBILITIES

Staff are responsible for stating and clarifying their expectations regarding benefits. This will provide the administration with guidance as they deliberate how to use those resources that have been set aside for staff benefits. These expectations could be of two types. They could involve the improvement of benefits based on staff evaluation of existing benefits, or they could involve an expansion of benefits based on a staff decision that the administration could play a greater role in the promotion of the general welfare of staff.

It's likely that a work relationship would be fulfilling, at least from a staff's point of view, if existing benefits were improved and new benefits were added for the purpose of promoting the general welfare of staff. With regards

to the evaluation of existing benefits, the most critical problem is the setting of evaluation criteria while the most critical problem in the expansion of benefits is being able to distinguish between what is and what is not a legitimate contribution to the general welfare of staff.

When has the general welfare of staff been fully realised? Ideally when staff can say that all that they expect for themselves and others has been realised. Practically when staff can say that reasonable progress has been made with respect to fulfilling their expectations or visions. By implication the expansion of benefits must first begin with the stating of staff visions.

A staff vision may be defined as a response to the following question, "As a member of staff of (insert the name of the enterprise which employs the staff member) what do you really want for yourself and others?". A benefit may be defined as a contribution which the administration can make to the fulfillment of a vision. As an example of a vision staff might say that their most important expectation for themselves is "to be able to maintain a productive relationship with my family and friends". The establishment of an effective but inexpensive staff counselling service would be a benefit related to that vision. Other benefits could include a salary increment that would enable staff to purchase counselling services or the provision of development programmes in which staff can learn counselling skills that they themselves might employ.

In developing benefits from visions staff must first ask themselves how should a specific vision be fulfilled (this describes a programme for fulfilling the vision) and then ask themselves how might the administration contribute to this programme (this will outline possible benefits). For example, staff may have stated that their most important vision for their colleagues is that they perform research that is socially responsible. When asked how this vision should be fulfilled, staff may have said that they should be provided on a bi-annual basis, a listing of research topics that are consistent with the emerging needs of society. Appended to the list should be references to work already done in which progress and problems are outlined and also appended should be a listing of likely funding sources. The provision of these lists could be seen as a staff benefit.

Staff should realise that the administration may not be able to contribute to the fulfillment of all their visions. The federal government, as opposed to the administration, would need to be the promoter of the following vision which staff may hold for others "to realise equitable treatment of minorities". Although the administration can contribute something to the fulfillment of this vision, such as affirmative action in hiring and promotion, a more pervasive contribution would need to come from government. Some work has been done on the sorting of visions according to jurisdictional considerations, i.e. among the federal government, the state government, the community, the institution and the individual (Hodson 1974a, 1974b).

Staff should also realise that there may be conflict among visions. The visions of older staff may conflict with the visions of younger staff. Other types of conflict are possible. Before benefits can be conceptualised conflicts need to be resolved so that priorities can be set. Hodson's work also addresses this point.

Why might staff be interested in an evaluation of existing benefits? Their interest may be contingent upon their role. If staff set evaluation criteria their interest might be high. Staff interest might be low if someone else whom the staff don't know or trust sets criteria. Staff usually have little

knowledge of those consultants who might be contracted to set the criteria for evaluating benefits; and staff are usually cautious of the administration. When staff interest in an evaluation is low, the final report will have little credibility and this lack of credibility can gradually grow into an attitude permissive of industrial conflict.

If the choice is made to have staff set the criteria for evaluating existing benefits then the staff need to be more than simply consulted. They need to be assisted in going from general to specific statements of criteria without the end result being a trivialisation, that is something measurable but something irrelevant. For example one of the existing benefits might be an on sight health services system. In evaluating this system, one general statement of criteria from staff might be "that the system employ well trained doctors", and a staff generated specification of this criteria might be "that the employed doctor can help me manage stress that is generated by the criticism of my work". A trivial specification of this criteria would be "that the employed doctor will have taken at least one course in doctor patient communication". The number of courses taken is easily measurable but it is only weakly related to competence. Low staff interest in an evaluation of existing benefits can be generated by errors other than the failure to set relevant criteria, but these errors have been well documented elsewhere and need not be discussed here (Benedict, 1974; Hutchinson, 1976).

### THE ADMINISTRATION'S RESPONSIBILITIES

The administration is responsible for describing its expectations regarding work. One type of work expectation will come out of the evaluation of existing work. A second type of work expectation will come out of work to be performed in the future. In this section the emphasis will be on the developing of future work expectations because less is known about this than about the evaluation of existing work.

Future work should contribute to the viability of the enterprise. Individual job descriptions outline the contributions of individual staff members. It's logical to assume that the administration will be satisfied if the future work of staff contributes to the viability of the enterprise and a satisfied administration should be less likely to take initiatives that may result in industrial action.

Matching job descriptions to viability first requires the identification of indicators of the enterprise being viable. This in turn raises the question of technique and then raises the further question of who shall identify the indicators. With regards to technique the following four questions could be used to elicit indicators of viability. What things indicate to you that the enterprise is viable? What things indicate to you that the enterprise is capable of adaptation? What things indicate to you that the enterprise is capable of survival? What things indicate to you that the enterprise is capable of growth? The last three questions are an elaboration of the first and would be presented as a set after the first had been answered. It is assumed that viability can be defined as being able to grow, survive, and adapt; and that the issues of growth, survival and adaptation cover most of the specific concerns of practicing administrators. It has been found that when asked, these questions identify issues of actual concern to the administration (Heffernan, 1979).

The answers to these questions provide an outline for the future work of staff. Suppose that when the staff of a university were asked the question "What things would indicate to you that the university (the enterprise) is viable?"

they responded by saying "It first needs to demonstrate its relevance to the community, it then needs to foster excellence in the research and teaching of its faculty, and it finally needs to have its operations accepted as administratively and economically efficient". All three answers, which are each an indicator of viability, have clear implications for staff tasks: The demonstrating of community relevance could involve the review of curriculum, the analysis of community needs or the establishment of community focused liaison and consulting services. Each of these tasks could involve a substantial number of staff. Task areas could also be identified for the other two indicators of viability identified by staff.

In using indicators of viability to outline future work areas, two pitfalls need to be avoided. The first is not giving enough consideration to the work needed to bring about a given indicator and the second is not giving enough consideration to the support needed by those who are to perform the work. Suppose that students identify adequate career counselling as an indicator of the university being viable. This indicator obviously implies the development of a counselling system but careful consideration needs to be given to the purposes of that system. Fundamental questions need to be answered in the light of existing knowledge. Should students be counselled out of careers that are oversupplied? Should students be prepared for more than one career? Should a student's career preference be challenged and if so how and to what extent? If such considerations are not made, the system might fail because it has been conceived of in a way that is inconsistent with what we know has worked or with what we know is required.

Once the nature of the counselling system has been decided upon the administration can now make rough estimates as to the person or team who will implement the system and then once this is done the problem of support must be addressed. The administration should ask themselves what types of resources and support will be needed at each stage of the team's operation. This could include equipment, time, money, information, guidance, training, secretarial assistance, or access to people. If this is not done the team may fail in their work due to lack of support and such failure will not in any way raise the credibility of the administration who asked the team to perform the work in the first place.

There is another problem that the administration should be aware of and that is having too small a list of indicators of viability. The danger in this is that it limits the range of work options that can be offered to staff and staff interest in working for an enterprise is effected by the range of work that they can anticipate themselves becoming involved in. This danger can be overcome by having indicators of viability identified by the general public, clients of the enterprise, staff, administration, funding agencies, and allied professions. Sampling techniques can be used when it is too costly to contact each member of each group. The interviewing of opinion leaders is another economical form of contact.

#### JOINT RESPONSIBILITIES

There are three responsibilities that must be shared by both staff and administration if conflict is to be avoided. They both must reach a consensus regarding what benefits are to be exchanged for what type of work. They then need to develop and agree to implement a system for monitoring the provision of benefits and the performance of work, and finally, they must devise and commit themselves to a method of resolving conflict which involves industrial action only as a last resort. There are particular problems with respect to carrying out each of these joint responsibilities.

Biases may get in the way of reaching a consensus regarding the equation of work and benefits. The administration may be biased towards expecting a higher level of performance than is possible given real staff potential. Staff may be biased towards expecting an unrealistic level of benefits. Breaking these biases may depend on each side demonstrating to the other that they are cognizant of their limitations and have conceptualised steps for overcoming them. The administration should be willing to be realistic if the staff can demonstrate that they are willing to try to increase their potential. The reverse should also hold.

Distrust may get in the way of development of a monitoring system and it may also disrupt the development of a system for resolving conflict. One way of quieting distrust would be to have both sides consider implementing an expanded version of the ombudsman concept and the expansion of the concept would involve the ombudsman being given the power to test solutions rather than simply present them. This changes the ombudsman's role from statesman to active empiricist. He/she must devise a number of workable solutions and prepare for testing them against a range of criteria that have validity for both staff and administration. The "answer" thus becomes a solution that is holistic and workable - holistic because in design it accommodates the desires of both staff and administration; workable because when tested it actually meets these desires. Given a conflict situation, the staff or the administration's rejection of a solution that is non-partisan and which works should be seen as an act of bad faith.

#### LIMITATIONS

There is one personnel factor and one organisational factor that may limit the possibility of avoiding conflict. The limiting organisational factor is the present level of tension and the limiting personnel factor is the inventiveness of both the staff and the administration.

Before a mutually fulfilling work relationship can be established the existing level of tension needs to be diagnosed and if it is high, staff and administration need to enter into discussions with the intent of identifying and resolving the disagreement. There isn't a great need to discuss how to approach and manage these discussions because how to negotiate seems to be one aspect of industrial relations about which we know quite a bit, but there is a need to talk about how to manage moderate amounts of tension because moderate amounts of tension are more prevalent a condition than open conflict.

Moderate levels of tension can be lowered directly or indirectly. The direct approach involves resolving the problem that generated the tension, while the indirect approach involves demonstrating that the likelihood of future conflict can be decreased. When it is believed that future conflict can be prevented, trust is raised and present tension is lowered. The demonstration involves explaining the concepts mentioned in this paper. The administration may be willing to put aside the past and look more to the future if they accept that staff will be contributing to the viability of the enterprise. The staff may also be willing to look more to the future if they can anticipate receiving benefits that will promote their general welfare.

The administration needs to be inventive with respect to overcoming constraints on the objectives that their institution may pursue. If administrators are inventive enough to diversify the functions of their institution, then a broad range of work can be offered to staff and this should increase the interest of staff in working for the institution which in turn should decrease their generation of conflict. There is no reason why the inventiveness of the administration cannot be directly increased through training and the conducting of such training should be seen as a valid component in the prevention of

industrial conflict.

Being able to maintain a diverse set of functions also increases the total amount of satisfaction that can be expected by the clients of an institution. This is likely given the fact that institutions are now being asked to satisfy a greater number of needs of a greater number of clients and the adherence to singular or narrow functions is inconsistent with this request. However, constraints are not easily overcome and the administration may need training in how to seduce those constraints that confine their institution to a singular identity.

The staff needs to be inventive with respect to overcoming their own biases. Most staff tend towards "purism", which is a commitment to what is correct rather than to what's workable. Although this tendency facilitates the performance of research, which to be of quality must be correct rather than acceptable, it is inoperative outside the experimental setting, especially in the workplace, where what you do must be a mixture of personal desires and actual possibilities. Staff may need training in how to invent outputs that are as rewarding to them as professionals as they are to their administrators.

The staff's inventiveness can also be increased through training and this should raise the credibility of the staff because the administration can anticipate more practicality and less purism. Thus training the staff in inventiveness should also be seen as a valid aspect of preventing industrial conflict in higher education.

In conclusion, there are situations in which conflict cannot be avoided. These are institutions in which either the administration or the staff or both are unwilling to censure those of its members who act in bad faith. Voicing a complaint is not in itself a censurable act. What is censurable is an elitist advocacy of dismissals, restrictions, strikes or disruptions as the only acceptable solutions to a contentious issue. Leaders of both staff and administration must be willing to respond quite directly to mischief and the constituencies of these leaders should withhold their commitment if this directness is lacking. One who is interested in applying the concepts discussed in this paper is advised not to apply them in institutions where the staff and the administration are not willing to contain bad faith.

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# Intervention and staff development

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The degree to which those responsible for staff development intervene in teaching/learning is central to an understanding of this work. The staff developer can be responsive to the needs of his colleagues and the institution or take an active evangelic role in improving teaching.

The degree to which he intervenes or adapts his degree of intervention is determined by a complex set of forces only some of which he can control. This paper examines the roles that a staff developer can adopt and discusses the way in which he becomes an adaptive interventionist.

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## Introduction

In this paper I am going to develop the idea of the 'adaptive interventionist' in staff development. But before I proceed, it is necessary to make one or two assumptions about the circumstances that are being described. Staff development can be defined as:

"Activities provided for teachers ... that intend to improve not only their teaching, but all aspects of their work."

And a staff developer is:

"A member of ... staff whose main function is neither wholly research nor teaching but establishing, maintaining and improving the quality of teaching (and learning) in the (institution). (McAleese, 1978a)

These definitions restrict the remit of staff developer considerably and it is now more common to include in this work, all aspects of the lecturer's work and career development (study leave, secondments, etc.) However, the sense in which I use the term is the restrictive UK university definition (see McAleese and Nisbet 1979) as opposed to the more general higher and further education sense (Harding and Greenaway, 1978).

In using the terms staff developer, trainer, I am using a characterization of what may be either an individual or a corporate activity.

The second assumption is about the nature of intervention itself. -By intervention, I mean

"The degree to which the trainer (staff developer or corporate tertiary unit) challenges, critically examines and analyses the overt and covert rules assumptions and policy of the host organisation".

In other words - intervention is being an irritant to the institution. Intervention means a definite policy of going out and looking for business, of suggesting changes and obtaining empirical evidence to help change practice. It has as its focus a commitment to change. Intervention is central to staff development work for it is a continuum that at one end has "maintaining the status quo" and at the other "suggesting radical policy changes". Very few examples exist in Australasia, of a tertiary unit acting as an institutional irritant. When the Centre for the Study of Higher Education was reported on by a staff-student body (Assembly) three years ago the author made this point:

"It would be unfair to call the Centre a failure - that word should be reserved to describe the almost inevitable outcome had it in fact attempted to question seriously the established verities - but the correct notation on its record must surely be "recorded absent"  
(Borthwick, 1977)

The same point has been made to me by several academics - "Why don't you stir it up a bit more?". The answer to this question and rationale behind the CSHE (up to the point when Borthwick wrote his report) is far from simple. Staff development is a political activity that like other such activities depends on 'the possible'. The circumstances that govern what is possible are complex. This paper attempts to characterize this intervention in the person of the 'adaptive interventionist' (McAleese, 1978a).

To develop the idea of the adaptive interventionist, I am going to first analyse the roles that the staff development trainer undertakes and then discuss intervention. The analysis is based on a five year action research analysis of my own work in the University of Aberdeen. I will tackle this under these headings.

General Training Tactics  
Barriers To Change  
A Job Description.

#### General Training Tactics

Two general training tactics which have emerged in Aberdeen may be described here under the headings: Seeding and Weaning.

#### SEEDING

In seeding the staff development trainer attempts to achieve a multiplier effect by having training work transfer from one client to other individuals. Just as the chemist uses a particular type of crystal to grow larger crystals (the initial one is a 'seed' for growth), so the trainer exerts a multiplier effect with his work. Miller (1977) calls this tactic the 'snowball effect'. Writing of the role of an Australian tertiary education unit, he says:

"I am hopeful by involving some lecturers ... I shall enable them in turn to assist their colleagues ... In other words I am hoping to initiate a 'snowball effect'". (Miller, 1977)

As a tactic it is well recognized; in the 'Letter to a Vice-Chancellor', Dundonald Minor (1966) gives this advice to his Australian mentor:

"We must accept the fact that this training cannot cover more than a minority of all those who are passing through their professional education - from this minority the principles of training will be diffused more widely".

If a trainer could only achieve what he set out to do or was permitted to do with one individual then training would not be cost-effective. As it is, training is labour intensive. The tactic adopted has to be one of working with an individual who will turn out as a seed for further training and new ideas. This seems a simple and obvious tactic when it is set out in this general way, but it is far from straightforward in practice. The crux of the problem is the identification of the 'seed' individuals. It is not sufficient just to rely optimistically on the hope that these individuals will somehow emerge. The tactic of seeding in the abstract, is intentional, in that an individual is identified with the intention that he will provide a multiplier effect, but in practice this may be both impossible and undesirable. While it is possible to theorise about the characteristics of good 'seeds', at present such theorising has a low predictive capacity. On ethical grounds it is not desirable to 'use' colleagues in an instrumental fashion. Further, a distinction needs to be made between induction work with new and inexperienced staff, which is concerned with improving or changing the system. For reasons referred to below, (in particular, their status in departments) such individuals do not provide good seeding material. If one takes innovative work, example, then one of the aims is to have a transfer of training or a carry over to other members of the department.

The tactic that appears to be most effective is to choose a high status low threat departmental member for the seed. Such an individual, in terms of social interactions, is central as opposed to peripheral. Their high status need not necessarily be due to seniority and would seem to be most effective is based on their personality. Low threat means that they are not perceived by the 'counter innovationists' or adherents of the status quo as being important. (A tempting metaphor here is the Wooden Horse!) Other possible combinations of status and perceived threat are not effective. For example, the high status and high threat individual will be regarded with suspicion and even hostility by his colleagues. The low status low threat person will be peripheral in departmental decision making and therefore unlikely to provide any multiplier effect. The combination of low status and high threat (for example, the radical 'outsider') is obviously ineffective for this particular tactic.

A further consideration with regard to seeding is the 'level' of entry into the system: what is the best level of entry into the system for an innovative force? In management training some authors (for example Argyris, 1961) suggest that innovations must come from the top. While this may work in a strict line-management situation in industry, the conventional departmental structure in universities permits less control over 'line-employees' by the head of the department. Nevertheless, there is an advantage in access to the decision-making in a department, and therefore status is important, though too high a status may mean high threat. It would seem therefore in practice at least that the level of entry question is answered in staff development with the high

status, low threat lecturer.

## WEANING

In weaning the trainer progressively removes himself from the centre to the periphery of the innovative process. This is not the same as being pushed to the periphery by the institution. This tactic is one of adopting, in the microcosm of a project, a marginal role, not being forced into a permanent institutional marginal role. McAleese (1967b; 1978c) suggests the weaning model for the media consultant in developing countries. In staff development the tactic is similar. Unless the trainer is able to remove himself to the periphery of the innovation, therefore encouraging the client to take over the leadership, then there is likely to be a dependency relationship created between trainer and client. In such a relationship (i.e. dependency) the innovation takes place only in the presence of the trainer, that is the 'catalytic tactic'. Because a dependency relationship is set up between trainer and client, the client is unable to be weaned to self-sufficiency. In practical terms innovative work with a client, for example on the design of laboratory practical books, is not transferred to the design of lecture handouts, in that he tends to return and ask for help. To achieve weaning, the trainer must progressively provide less and less input and give the client more and more say in the innovative work.

Weaning is of course the same principle that is used in counselling. In the counsellor-client relationship there is a contract that the counsellor is going to withdraw from the contract - eventually. Unless the client can once again become fully involved in making his own decisions, a dependency situation is created. Two questions apply equally well to counselling as to staff development consultancy. First, when does one begin to withdraw support? Second, how does one decide? There are no clear answers in staff development although the bond between consultant and client is likely to be as strong as between a counsellor and a client. When, is answered in terms of the original contract. If the contract (that is, agreed terms of reference) is clearly explicit then no problem exists. The consultant withdraws when he has achieved the agreed goals. However, when the contract is implicit or ill-defined, the consultant needs to continually re-negotiate the terms of reference. As this is the commonest form of consultancy, the parallel with behavioural counselling is very strong (see for example, Krumboltz and Thoresen, 1976).

The situation sometimes arises where the explicit contract becomes only an excuse for some other work. The client asks for a simple answer and when this is provided, more complex questions arise until the real reason for the enquiry becomes apparent. This situation is often used by the media basic consultancy services. Technical support is often a precursor to asking for teaching support. Some consultants use this knowledge to always look out for a hidden or implicit need. This situation can be called the 'platform ticket problem'. In this the client buys a platform ticket to get on the platform, then he makes up his mind to go somewhere and gets a free ride. In counselling this tactic is often used by clients anxious about working with the counsellor. They use a simple reason to gain access, then as they are about to leave they give the 'real' reason for their visit.

How, is a matter of becoming physically more distant (fewer meetings, etc.) and using more non-directive tactics in the working relationship. In practical terms this may mean leaving some loose-ends untied, but the termination of any consultancy will inevitably leave something unfinished. In contrast to counselling, staff development consultancies have less clearly defined end-points. Indeed there can often be a carry-on to another project. The problem for the trainer is to know when to say, 'Now you are on your own'. There is no simple

answer beyond being aware of signs of dependency.

One further complexity may arise in terms of dependency when it is not the client who becomes dependent, but the consultant. It may be possible in a particularly successful consultancy to resist its termination. While consultants should be more aware of the problems, they are often no less susceptible to dependency-creating situations.

### Barriers to Change

There is a tendency for those experiencing job frustration or finding the process of innovation too slow, to explain their static position by erecting barriers they have had to cross. For example:

"All the forces which contribute to stability in personality or in social systems can be perceived as resisting change. From the standpoint of an ambitious or energetic change agent, these energies can be seen as obstructions".

(Watson, 1970) (my emphasis).

'Barriers' or 'resistance' or 'opposition' are conflict terms that are easily applied to innovative situations. Whether this is a good metaphor or not will be considered below, in the meantime, assuming that it is possible to see innovation frustrated by forces either within or outside the control of the innovator, what are these forces?

There are two groups of forces, those external or outside the control of the trainer, and those internal or within his control. The distinction can also be made between those that relate more to the system (external) and those that relate to the trainer (internal). External barriers consist of: the system's propensity to maintain a status quo (homeostasis); the system's preference for a new state of organisation, once it has changed (dependency); the system's preference for accepted form of behaviour (conformity); the special interests of some individuals in a system (vested interests); and the natural resistance of a system to outsiders (outsiders). Internal barriers relate to the way the trainer does his job. McAleese (1978b; 1978c) suggests barriers in using probabilistic conditional knowledge (knowledge); of making gross simplifications in detailed arguments (trivialisation); and misusing facts, ideas (appropriateness of knowledge). The barriers will be discussed one at a time, beginning with external barriers.

**HOMEOSTASIS:** Social systems are usually seen to be in, what Cannon (1932) called 'homeostasis'. In biological terms, any living system has a mechanism that regulates its functions to 'normal' levels, this is homeostasis. For example, if heart rate is elevated by exercise then the human body will tend to reduce this rate to a resting or 'normal' rate as soon as possible. It is argued that the same is true of any system. When an educational system is affected by some external force then its natural reaction is to attempt to maintain the status quo or if this is impossible to return to the status quo as soon as possible. Indeed some authors have taken the biological metaphor further with some types of innovations. McAleese (1977) and Mitchell (1977) among others, have used an extension of this metaphor to describe the dissemination of educational technology knowledge. They suggest that systems resist the infection presented by the innovation in the way the human body resists biological infection. This concept of homeostasis is basic to an understanding of barriers to change. Watson (1970) points out that the other external barriers occur as a result of homeostasis.

**DEPENDENCE:** When a system is unable to resist an innovation it is changed by it. This new state becomes the 'norm' and the system acts as if it were dependent on it; in the way humans show dependence on drugs. This dependence is a resistance; in that further changes (i.e. removal of the innovation) are resisted, thus maintaining homeostasis. An example of this may be seen in the dependency relationships that can be created between a trainer and a client. After initial resistance, the client 'needs' the support of the trainer. When considering media innovations this is a useful analogy. If one takes, for example, closed circuit television then the dependence can be seen. Many universities resisted closed circuit television in the form of central television services. However after the 'infection' had become accepted by the host (in a symbiotic relationship), the removal of the irritant by other interests is resisted by the system as a whole.

**CONFORMITY:** Systems tend to conform to norms. The trainer will be told, "that is not our 'normal' practice"; we don't 'usually' do that." Such norms often non-existent but erected as barriers. The system may 'sense' that it needs to resist a change and to justify it, and claims 'normal' practice. Changes in assessment procedures often identify conformity. It is argued that the normal practice has been, for example, to have term-essays marked by two markers. When asked about the practice, members of staff are not keen on the idea, but as a department there is opposition to not double-marking term essays.

**VESTED INTERESTS:** An organisation is made up of individuals who have their own goals, interests and positions to protect; such is social organisation. Vested interests can be found in any part of the system; the department, the institution, or the individual. Such interests have to be 'protected at all costs'. These interests are related to the homeostasis of the system for they are part of resistance to change. For example, some work was concerned with redesigning laboratory practical books. One of the suggestions was to abandon the practice of marking such books. Apart from educational reasons why this practice was doubtful, the organisation of marking was a problem as it took one individual a lot of time to make sure each section was marked and double-marked by the relevant teachers or demonstrators. A vested interest became apparent when the change was opposed by the organiser of the marking. He felt that the marking was a worthwhile exercise. This might be seen as simple conformity; however, it became apparent that the organisation of the marking conferred on the individual a certain status in the department. He opposed the innovation not simply to maintain the present system (conformity) but to protect his vested interests.

**THE SACROSCANCT:** Some areas in innovation are more open to change than others. Watson suggests:

"The greatest resistance to change concerns matters which are connected with what is held to be sacrosanct. Traditional ceremonies are apt to persist despite doubts as to their educational impact ... The closer as reform comes to touching any of the taboos or rituals in a society the more it is likely to be resisted."

(Watson, 1970)

In universities two particular practices are considered sacrosanct: the lecture and assessment (in particular the three-hour examination). Attempts to alter or modify either practice is usually met with opposition. Such resistance is most difficult to overcome. It is as if the 'ego' of the institution was

threatened, when alternatives to lecturing or formal examinations are suggested. Such resistance often has its roots in legitimate fears about a deterioration in existing practices. However, quite often opposition to innovative methods is irrational and can only be explained by assuming that some ideas are, like Caesar's wife, 'above reproach'.

REJECTION OF OUTSIDERS: Resistance to change is resistance to change from 'outside'; that is it is outside the normal practice of the system. The trainer is often seen as an outsider. He has, what Stonequist (1961), called a 'marginal role'. That is, a role in an organisational setting which is peripheral to the main functionings of the institution. Such individuals may be rejected as 'outsiders' even though they work very hard and otherwise further the goals of the system. Goode (1960) suggested that 'marginal individuals' are subject to role stain. They lose direction because of being outsider with no clearly defined central role in the institution. Hendry (1975) observes that:

"Where (the individual's) role is not central to the goals and function of the organisation ... he can be subject ... 'role pressures'."  
(my emphasis)

The trainer experiences this role marginality when he is treated as the 'outsider'. The host system creates a resistance to the individual by shifting him to the periphery in decision making and support for his activities.

Resistance is common in all situations.

"Research, development and engineering units are familiar with the way in which a new project is hampered if it is seen as N.I.H. (not invented here)"  
(Watson, 1970)

Outsiders in institutions are treated as peripheral as are their ideas, their values and practices. In a different sense some teachers resist the 'outsider' in the form of audiovisual resources materials and textbooks. No 'resister' will accept that a tape-slide programme, made in another university, is better than the one that he can make; even though his endeavours to make one will be considerable and will result in duplicated effort. This resistance to externally produced material is one of the principal reasons why transfer of innovative material from department to department, or faculty to faculty, is so difficult to achieve.

Homeostasis, dependency, conformity, vested interests, the sacrosanct and rejection of outsiders can be thought on as External forces on the trainer. Internal forces are at work as well. These forces mainly concern the status of the trainer's job with respect to how he treats his training tactics and his knowledge.

KNOWLEDGE: The quality of knowledge about training and teaching practices itself is one of the primary barriers to the trainer from within. It is often assumed that a trainer is an expert in his subject like any of his other colleagues. A chemist 'knows about' Chemistry, so a trainer 'knows about' training, change, educational innovations, good teaching practice, etc. This is not the case; the trainer's knowledge is probabilistic and conditional. Ned Flanders has quite rightly pointed out that knowledge about teaching effectiveness and the training of teachers is 'probabilistic and conditional' (Flanders, 1977). McAleese (1978d) has made the same point about the state of educational technology

knowledge. In staff development the trainer does not have a handbook of known facts or established relationships to call upon. When asked by a client "What do you know about the effectiveness of continuous assessment?" he can only reply, "Well in some circumstances (this) may happen, in other circumstances (something else) may happen ... it all depends on what you want to do ...". There may be situations where the technologist is working with 'harder' data and less dependent on value-judgments, nevertheless he experiences a resistance to this ambivalence or 'posturing on a fence'. Lecturers are apt to say, "You are an expert in education ... don't tell me it all depends ... what is the ('correct') answer!" This internal problem is exacerbated by the expectations of clients who may see the trainer as a provider of answers in all teaching/learning circumstances. Such expectations show a misunderstanding of the nature of educational knowledge and practice.

In practice, knowledge about scientific relationships are no more concrete; however doctors seldom have to persuade an ill man to take a medicine even though both may know that its effects are uncertain. Such expectations are superimposed with beliefs. There are few instances where the trainer encounters such expectations.

TRIVIALISATION: Often in avoiding the pitfalls of probabilistic knowledge the trainer falls into the trap of trivialising relationships or findings. In this, the trap is laid with a question relating to a probabilistic judgment. "Are multiple choice exam questions better than short answer exam questions?" A trainer finds a 'trivial' position when he unequivocally says 'Yes, multiple choice questions are better'. He knows quite well that the real answer (if there is such a thing) is more complex, but how does he give a simple answer to such a question without trivialising the concept? The real problem lies with the question and the expectations of the questioner. No client should expect a simple answer, however in reality they often seem to do, so some clients' expectations are characterised in a response I have heard more than once ... "Come on, all I want to know is which is better, not the pros and cons of the argument ..."

Another aspect of this problem relates to the general way researchers and 'experts' communicate with each other. There is often a shorthand form of communication which is characterised by technical terms that represent very complex ideas (some call this jargon!) For example, the distinction between paradigm, model and archetype are often confused. The real distinctions are clear according to 'experts' at least (see Black, 1962). This situation has arisen in staff development when talking about a 'paradigm' of teaching, I have used the term 'model' inappropriately, but more conveniently, as using paradigm would have needed a complex definition; whereas 'model' had an apparent implicit and explicit denotation.

APPROPRIATENESS: Sometimes the trainer has to give reasons for something or argue a case, for example, continuous assessment. An internal barrier exists in using inappropriate knowledge. Some knowledge is culture specific, some context specific; when it comes to choosing explanations for actions or making recommendations a trainer must select appropriate knowledge. For example, research on assessment and assessment methods relate to many different circumstances other than university teaching. Knowledge about marking schemes for essays based on public exams (e.g. High School Certificate) may not be appropriate to term essays.

The trainer is in a marginal role; he is eclectic in his choice of work, has enthusiasm and drive, and is flexible in his approach. Such an individual may seem difficult to tie down, but it is possible if one describes his work in terms of the roles he plays. Such a job description can be distinguished from a model in that a model needs to explain and predict actions, processes, etc., whereas a job description attempts to separate out the various elements and identify: "The purpose, scope, duties and responsibilities of a job" (Johannson & Page, 1975). The trainer can be seen as encompassing the sub-roles of organiser, teacher, researcher, facilitator, counsellor and consultant. The trainer is acting as a strategist in his role as organiser; he is a tactician in his adoption of the other sub-roles (teacher, research etc.).

ORGANISER: As an organiser the trainer has to cope with the day to day organisation of staff development. In many instances this role may be delegated, particularly with regard to simple clerical work. In larger organisations, delegation of simple decision-making occurs, for example, details regarding dates for courses, general outlines of work undertaken, meetings, etc. Organisation would seem to be the least personally rewarding role, but one that links together the other sub-roles. In that sense, it is strategic rather than tactical. As an organiser, the trainer is concerned with formal courses and system engineering.

RESEARCHER: Instances where the trainer is solving general problems concerned with training or development or where he is attempting to establish relationships between teaching variables can be roughly classified as 'research'. This 'scholarship' has two main functions. Firstly, it establishes and maintains the scholarly credibility of the trainer in his university. Whether this is desirable or not is of little importance, as the trainer must work in a real situation where expectations of what is important or who is important have to be encountered. In universities scholarship is prized and half a lecturer's time is normally allocated to such work. In order that the trainer be 'parens inter pares' he must take part in the 'academic market place'. Such activities not only enhance his perceived status, but probably bring him closer to his colleagues in terms of shared experiences and may build a bridge between like-minded individuals. Secondly it permits the trainer to solve problems associated with his work. Self-confrontation and the use of systematic observation feedback instruments in Aberdeen come into this category. In his sub-role as researcher, the trainer may find himself either carrying out research-based studies or providing new data for consultancies.

TEACHER: Early attempts at providing staff training emphasised the teaching role. Indeed the provision of training in most universities is dominated by the formal course (e.g. Initial Teaching Course). Teaching in formal courses is a basic aspect of the trainer's work and a role that usually emphasises maintaining the 'status quo'. It may therefore be contrasted with an 'innovative' role which the trainer subsumes in consultancy, research or system engineering. The main characteristic of formal courses is that the trainer can arrange the content and the outcome of the teaching. If one takes Glaser's distinction between training and education, then the teaching function can be characterised as having fairly clear objectives which the trainer determines and sets out to minimise individual differences (Glaser, 1965). Such teaching, according to Glaser, should be called 'training'; i.e. training has specific objectives and sets out to minimise differences. The Annual Teaching Methods Course as a whole has specific objectives, as do each individual objectives session. However, the trainer's aims are being constantly modified by the needs, expectations and responses of trainees.

In distinguishing staff training from other forms of training (industrial, military or sports) the key feature is the specificity of objectives. In industry, clear behaviour objectives can be written for many training problems. The same is true in the military context. In staff development work such specificity is seldom reached, objectives are nevertheless determined by the trainer.

The roles of facilitation, counselling and consultancy overlap to a greater degree than the previous three. However, to clarify the job description, they are separated.

FACILITATOR: The concept of facilitating activities is closely associated with Carl Rogers (e.g. Rogers; 1969) i.e. helping learners to achieve goals. Among the characteristics that Rogers considers important in facilitating learning are:

- a) helping elicit and clarify goals
- b) organising resources for learning
- c) using the facilitator himself as a resource
- d) becoming a member of the learning group
- e) being alert to emotional and attitudinal feelings
- f) recognising and accepting the limitations of the facilitator.

He suggests that several characteristics are counter-facilitating:

- a) a 'phoney' approach to teaching
- b) an overeagerness for the achievement of goals
- c) the facilitator being more concerned with his own problems.

Patterson (1973) suggests that the facilitator structures, listens, accepts, understands and responds.

"The facilitator is not a leader in the usual sense of the word. But his role and function may be defined quite like that of a humanistic teacher who is attempting to make possible self-initiated learning, explanation and the achievement of personal meaning"  
(Patterson, 1973).

Rogers and Patterson's characteristics for the facilitator are too broad for the staff development trainer as they are primarily intended to operate in humanistic education and encounter groups. Nevertheless the concept of facilitation is important. Some of Rogers' ideas are more properly subsumed under counselling (e.g. being alert to emotional and attitudinal feelings; see below) or consultancy (the trainer using himself as a resource; see below). In facilitating staff development, the trainer is not a leader "in the usual sense of the word". (Patterson, 1973), more, using the less precise term, a 'catalyst'. That is, providing a guiding hand to help clients achieve their goals. The trainer as a facilitator can elicit and clarify goals; however the goals are not his, but his client's. In this role the trainer is operating in the area called 'Consultancies' as opposed to, for example, providing formal courses. A consultancy is made up of different phases and the trainer may adopt different roles. However, the role of facilitating staff development is the most important.

**COUNSELLOR:** The distinction between counselling and facilitating in staff development is largely the difference between a one-to-one situation and a group situation. In his counselling role the trainer is normally working with one client; in his facilitating role a group or a department. There are of course other differences. The main one of these being the focus on personal problems, as opposed to more general teaching or 'educational' problems.

A trainer shifts into his counselling role when he detects an emotional tension in a consultancy. Take, for example, the situation where a lecturer enquires about the design of a student evaluation form. The role which the trainer tends to adopt is that of consultancy. However, there have been occasions where the design of the questionnaire has been a 'platform ticket', in that the lecturer is more concerned about some tension that exists in his teaching. The explanation and possible resolution of this tension leads the trainer into a counselling role.

A clarification should be made at this point about the use of the term counselling. There are major debates in counselling literature with regard to the authority of the counsellor; in staff development, authority is absent in the trainer's counselling role. Again the term is frequently used synonymously with psychotherapy. There are major differences between the trainer's counselling role and psychotherapy. Counselling is the way the trainer helps a client; the help is psychological and derives from the nature of the staff development relationship between the two. There is no attempt to extend staff development counselling into clinical counselling. The limits of the counselling are the tensions related to teaching. Where such tensions have wider implications, the trainer has to refer to more specialised agencies.

**CONSULTANT:** The term consultant is difficult to pin down. Many authors use synonyms or related terms; for example, expert, advisor, change agent, change therapist, problem-solver and catalyst, to mean 'consultant' (see Bolam, 1975; Hoyle, 1970). Unfortunately, authors use the term in a generic sense to include many sub-roles. For example, Juarez (1969) subsumes: analyst, advisor, advocate, system linker, organisational linker, technical innovator, educator and leadership trainer. McAleese (1978c) subsumes: organiser, teacher, resource person, evaluator and facilitator. The staff development trainer when subsuming the role of consultant is an expert resource person. That is, he is someone who has a professional command of a field of knowledge and who will identify alternative strategies and suggest priorities. He is responsive to the needs of his clients in providing information. The trainer may have to help define objectives and to identify problems but as a consultant he is distinguishable from the facilitator in his giving of advice. Lucio and McNeil (1962) come close to a description of the consultancy role when they say:

"A consultant is an instructional specialist assigned to promote the improvement of teaching and the curriculum by advising with teachers ... and others. He is especially concerned with the discovery and use of instructional aids, materials, teaching guides, methods of teaching and resource units. He has little or no authority for decision - making".

(my emphasis)

Consultancy in staff development can mean answering questions, providing references, designing questionnaires or writing reports. The distinction between the role of consultant and consultancies is the distinction between a role the trainer plays, and a generic term to describe a variety of activities.

## A Framework for Understanding the Staff Development Trainer

From the above job description it is possible to suggest a framework that links together the various sub-roles of the trainer's job. Figure 1 gives an illustrative account of one part of such a framework. The staff development trainer has six intersecting sub-roles. When teaching, he has common elements with organising, facilitating and researching. That is, the roles are not homogeneous but have degrees of overlap with related sub-roles. Likewise, some sub-roles have little communality. As a counsellor the trainer has common elements with facilitating the counselling. Figure 1 indicates not only the degree of overlap between sub-roles, but suggests the relative importance of the various sub-roles in the job description. The size of the circles reflects the relative importance of each of the sub-roles to the overall job description. The sub-roles decrease in their relative importance as follows: facilitator, organiser, consultant, teacher, researcher and counsellor. In other words, the trainer will find that he subsumes the sub-role of facilitator more often than that of organiser, and so on.

Figure 2 shows schematically a further aspect of the framework, the relationship between the trainer's sub-roles and the type of work undertaken. If one considers the type of work undertaken then it is possible to identify the contribution of the various sub-roles.

Formal Courses: Mostly teaching and organising, with minor contributions from counselling and facilitating. In some cases, particularly in discussion, the trainer is a consultant or expert in his field. Only researching is not included.

Research Based Studies: Concentrated on researching.

Consultancies: The trainer is principally a facilitator, with the role of consultant next in order of importance. Researching and counselling are included in about equal proportions.

System Engineering: Mainly a facilitative role with organising and consultancy contributing to some extent. The 'political' side of system engineering is split between organising and facilitating.

In each area of the trainer's work there is a degree of role shift; that is, the trainer subsuming different roles at different points in his work. He may start as a consultant and finish as a counsellor. If one examines Figure 2 one can see that in terms of the variety of roles adopted, formal courses require most role shift followed by consultancies, system engineering and research-based studies. As was suggested above, the trainer adopts role shift due to external pressure (political, etc.); role shift can itself cause internal tensions in the trainer. That is, tension due to uncertainty as to the selection of the most appropriate role; tension due to dissonance between the client's expectations and the trainer's tactics. There are inherent tensions between the trainer's sub-roles themselves. The principal tension is between the role of facilitator (non-direct support) and organiser (interventionist); that is, the degree of intervention (see Figure 3). Two other tensions occur to a lesser extent. Between consulting and researching there is a process-product tension. In consultancies the trainer is concerned with maximising the gains in the processes of the work; in researching he is goal directed towards finding out some relationship or achieving a product. Finally a tension exists between his counselling role and his teaching role. As a counsellor he is subject or topic free, while with teaching he is concerned to help his staff know more about some topic or some aspect of teaching (i.e. content).

The framework presented here may be used to describe the staff development trainer as an adaptive interventionist. (see also McAleese, 1978a) Such a trainer will spend most of his time in consultancy work with formal courses, research-based studies and system engineering following in that order. In formal courses he is most adaptive, and in general he finds that his principal sub-role is that of a facilitator. This framework is not a model. It merely illustrates the way in which the adaptive trainer meets his work, and the way he shifts his tactics depending on a complex set of variables.

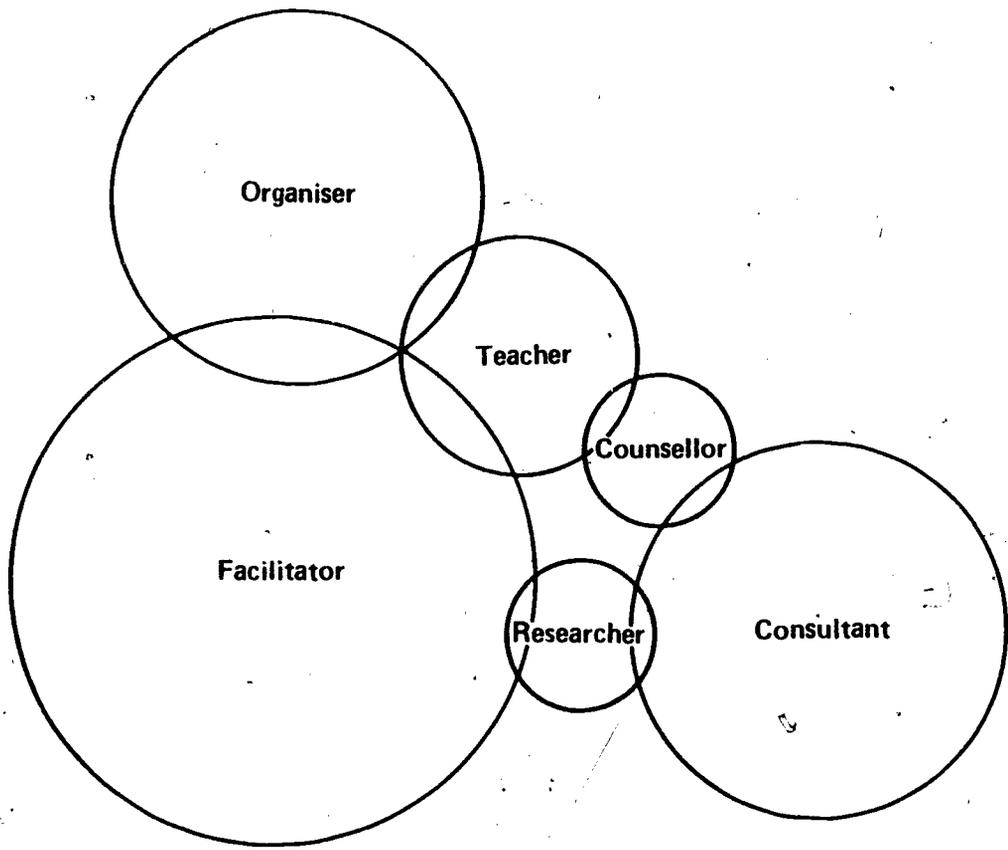
### Conclusion

The characterisation in this paper has been that of the staff development trainer. The analysis is as pertinent to a Centre or a Unit; whatever it may be called. We all have to answer the question "Where do you stand with regard to intervention?" Are we a stamp of institutional approval, with our locus in the status quo of the institution, or, are we located at the periphery of conservatism - in a radical position. Wherever we find ourselves, the circumstances that brought us there are complex. Some we can control, some we cannot. An awareness of the situation must be a necessary condition for our survival.

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**Figure 1: Sub-Roles Adopted by the Adaptive Interventionist**

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Trainer's Roles \ Type of Work	Formal Courses	Research-based studies	Consultancies	System Engineering
Organiser	Very Important Contribution	No Contribution	No Contribution	Some Contribution
Teacher	Very Important Contribution	No Contribution	No Contribution	No Contribution
Researcher	No Contribution	Some Contribution	Some Contribution	No Contribution
Consultant	Some Contribution	No Contribution	Some Contribution	Some Contribution
Counsellor	Some Contribution	No Contribution	Some Contribution	No Contribution
Facilitator	Some Contribution	No Contribution	Very Important Contribution	No Contribution

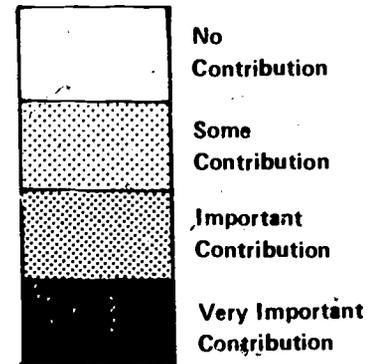


Figure 2: The Relationship Between the Sub-Roles of the Adaptive Interventionist and the Type of Work Undertaken

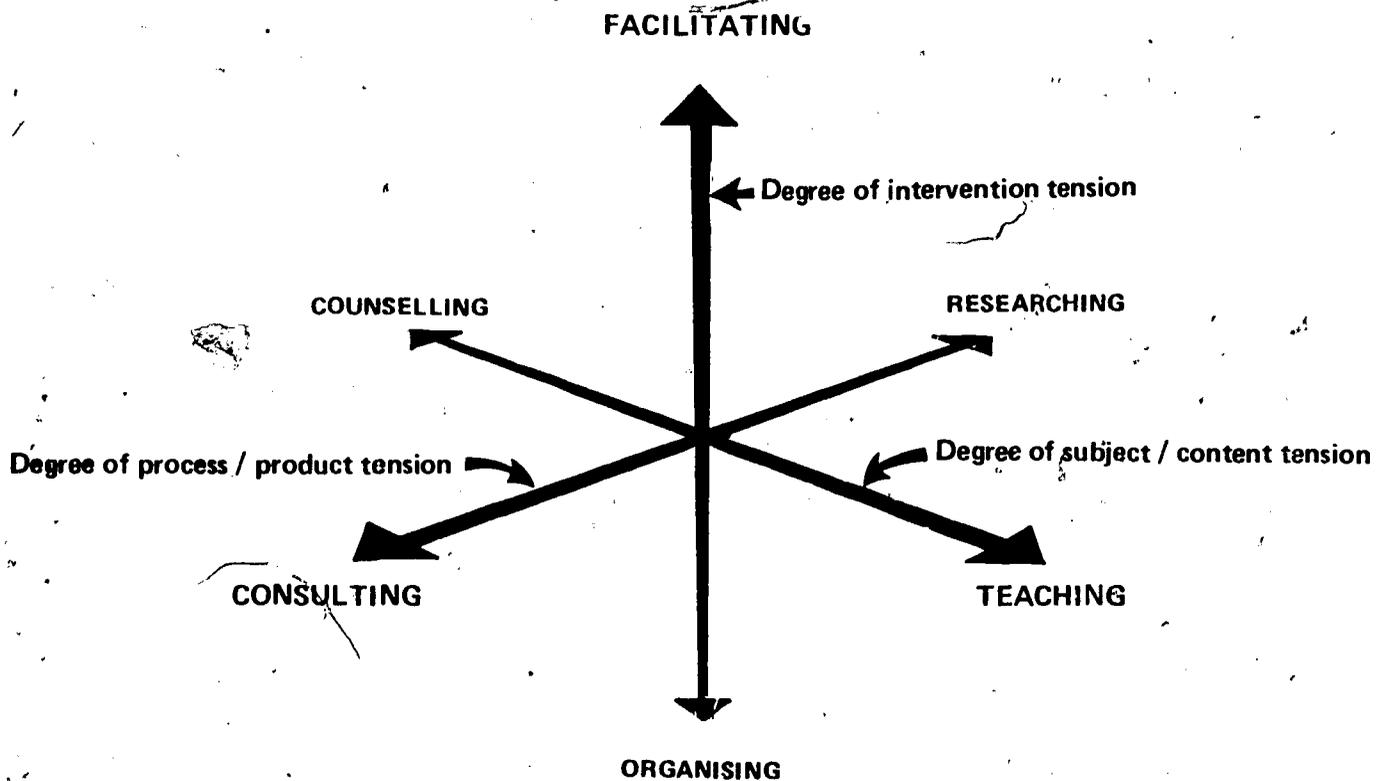


Figure 3: Tensions Between the Sub-Roles of the Adaptive Interventionist

# Learning in general practice - the Newcastle experience

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The paper proposes answers to the questions:

1. Why should students work in general practice?
2. What are the broad aims of such an attachment?
3. What specific objectives are to be achieved?

The paper goes on to describe a new approach to learning in general practice, substituting an active, critical involvement on the part of students for the more usual passive observer role.

After a brief overview of the organisation of the practice attachment the paper describes a session for a student in general practice in the second year of the course. Working Paper XV of the Faculty of Medicine details the aims and specific objectives for student learning in general practice. Reference is made in this paper to a selection of these objectives illustrating how they may be used to focus the student's attention on the process of the general practice consultation.

Comment is made on the training of general practitioner supervisors, assessment of students, and evaluation of the attachment.

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The paper describes the educational philosophy of a new medical school, outlines the ways in which that philosophy has been derived and implemented, and takes as an example the approach to learning in general practice, traditionally a rather ill-defined experience, using a carefully defined set of educational objectives. Finally, it describes the process of assessment and evaluation of that "Field Work" experience.

## EDUCATIONAL PHILOSOPHY

The Medical School at Newcastle does not offer courses of lectures. Indeed, it does not provide any discrete course of study, and students do not undertake set laboratory exercises. There is no division between the sciences basic to medicine and the clinical disciplines. Both are totally integrated throughout the 5 year course through learning in order to solve and manage problems of individual patients and groups in the population.

Newcastle, the first provincial medical school in Australia, has adopted an analytic, systematic approach to planning, implementation, assessment and evaluation of undergraduate education. Individual and small group work is emphasised as a part of this policy to create graduates who are efficient at problem solving and can assume full responsibility for their own further education.

## GEOGRAPHICAL LOCATION

Newcastle is a medium sized industrial city with a well defined surrounding rural region and a total population of about 420,000. The Hunter Region, as it is called, represents Australia in microcosm from the point of view of population characteristics (occupations, product, requirements, facilities, etc). This makes the area particularly suitable for studies in community medicine, one of the reasons for the choice of this area for a new medical school by the Australian Universities Commission. Professor Maddison was appointed as Dean of the new Faculty in May 1974.

## DEFINITION OF AIMS

Before deciding on the educational strategies to be adopted, it was necessary to define as accurately as possible the characteristics which would be desirable in a new medical graduate. As the first graduates would qualify in 1983, they would have to be provided with an educational background suitable for the practice of medicine well into the 21st century.

These characteristics were defined at Newcastle in a series of programme objectives which express clearly, though in general terms what the graduate is expected to be able to do at the end of his undergraduate course. These objectives number forty-five in all: a selected few will form the subject of a later part of this paper.

The programme objectives are listed under the following headings:-

- Objectives related to:
- (1) the student's own learning
  - (2) scientific method and procedure
  - (3) clinical diagnosis, investigation and management
  - (4) attitudes and personal characteristics
  - (5) community medicine
  - (6) the Doctor/Patient relationship

As with the other early policy decisions of the Faculty, these objectives were drafted by the Dean and discussed, altered and finally ratified by a consultative committee. This consisted of medical academics as they joined the Faculty, non-medical academics, the Regional Director of Health, and senior members of the medical profession practising in the region. Finally, these objectives were published as a working paper of the Faculty (1976)<sup>1</sup> - there are now fifteen of these working papers outlining the policies of the Faculty.

In setting out a series of detailed programme objectives due acknowledgement was made of the traditional pessimistic view that such exercises are very time consuming (as indeed they were) and only produce a series of bland generalisations with which everyone agrees. The Faculty chose, however, to adopt the philosophy crystalized by Simpson (1972)<sup>2</sup> that "a detailed, realistic and behavioural statement of objectives is needed if we are to be able to

have any reasonable expectation that our courses are going to have the effects on our students that we want them to".

We do not yet know the end result, but it can be firmly stated that, at this stage, two and a half years after their formulation the objectives continue to be central to the development of the course.

### EDUCATIONAL STRATEGIES

Having defined, as meticulously as possible the end result, and bearing in mind the exponential rate of growth of medical knowledge, it became obvious that the education of students should concentrate as much on the process of learning as on the content. Facts which are learned will become outdated; the student must learn how to acquire new facts and competences to adapt to changing needs and circumstances.

The process of medical diagnosis is now recognised as a true problem solving exercise; it is almost exclusively hypothetico-deductive in operation. The word 'now' is used to emphasise that this was not formerly recognised. Traditional medical education stressed an approach which closely resembled the inductive, although physicians quickly reject this approach in actual practice.

It is becoming increasingly apparent that medicine should be concentrating its attention on prevention of disease and the promotion of health. In this context today's medical students should learn to think about the health of communities and groups of people, as well as about individuals.

It was with these thoughts in mind that the following programme objectives were developed:-

At the conclusion of his undergraduate course the student will:

1. Have demonstrated his ability and his willingness to achieve and maintain responsibility for his own learning and for the continuing evaluation of his own performance as a physician
2. Have demonstrated his ability to adopt a problem solving approach
3. Have demonstrated his ability to assess the structure and functioning of community health services in relation to the needs of individuals or specific groups
4. Have demonstrated his ability and willingness to apply scientific principles to the study of the behaviour of individuals, groups and institutions
5. Have demonstrated his awareness of the importance of the practice of medicine in both community and hospital settings

These are but a sample of the programme objectives which form the foundation for the Faculty's analytic and systematic approach to planning.

## IMPLEMENTATION

The Faculty has developed a course where the relevant basic and clinical sciences are studied in order to solve and manage either patient centred clinical problems, or problems of groups in the population. Clinical problems are presented from the first term of the first year. They are studied in groups of eight with a non-specialist group tutor. Through the exploration of these problems the students identify the knowledge, understanding and skills they require in order to solve and manage them. Each problem is structured round a set of educational objectives and deals with matters ranging from the molecular nature of disease to its effects at a community level with, of course, varying emphasis depending on the nature of the problem. The problems and their underlying causes, for example chest pain and ischaemic coronary artery disease, are selected for their frequency in the population, their seriousness and their preventability.

This group study of clinical problems not only provides the basis for the learning of the sciences relevant to medicine, but also provides students with active participation in the process of problem solving and in group dynamics.

In parallel with this problem solving strand, students study and practice 'Professional Skills'. These are the comprehensive set of skills necessary for the practice of medicine and include interviewing and examination of patients, counselling, critical appraisal of scientific papers and design of experiments.

While the study of these skills is initially based at the University and at the teaching hospitals, one programme objective requires students to be able to determine the type of medical care that is most appropriate to the immediate needs of the patient, at home, at work, in a general practice, a health centre or a hospital.

It is thus necessary to give students experience of the practice of medicine in a variety of settings, including general practice. It is particularly important to do this at a relatively early stage of their career before they become set in the ways of hospital specialist medicine. Attachment to general practitioners is therefore commenced at the beginning of the second year of the five year course.

## ANALYSIS OF GENERAL PRACTICE

To ensure maximum benefit from the educational experience it was necessary to attempt to define the objectives of such an attachment. These objectives have been evolved from an analysis of general practice experience and are detailed in Working Paper XV (1978)<sup>3</sup> of the Faculty which answers the questions:-

1. Why should students learn in general practice?
2. What are the broad aims of such an attachment?
3. What specific objectives are to be achieved?
4. How can students be helped towards these objectives?
5. How will we know whether they have achieved the objectives?

The rationale which underpins the attachment of students to general practice has already been touched upon in relation to the Programme Objectives.

THE BROAD AIMS OF THE ATTACHMENT are: -

1. Students should become familiar with the range of delivery of health care. By starting with patients in the primary health care situation, students can learn to assess whether their needs are best met there or in some alternative setting, for example a hospital.
2. The student will learn to appreciate those features which make the general practice situation unique. Here patients often present with problems which are undifferentiated: ill defined either by their nature or by the fact that they have not yet developed. Many other conditions are seen almost exclusively in general practice and rarely in a teaching hospital.
3. To give the student an opportunity to practice his interviewing and examination skills on patients selected for him and to present his findings to the general practitioner. This allows the student to operate in a more private situation than in a hospital, and the practitioner, from his own knowledge of the patient, may draw attention to aspects of the patient's problem which might not emerge in a hospital setting.

GENERAL OBJECTIVES

As a result of his learning in general practice the student should be able to demonstrate certain competences, which, although not the exclusive province of the general practitioner, are exemplified in special ways in general practice.

The competences relate to:-

1. The selection of appropriate health care
2. Treating the patient as a whole person
3. Efficient problem solving
4. Referral for special investigations or specialist management, or to allied health professionals
5. Recognising and managing specified common conditions
6. Prescribing drugs and other forms of conservative treatment
7. Critical examination of medical records
8. Continuing education and self evaluation

Under each of these headings are developed a list of specific objectives which state not only what the student is expected to demonstrate but how he is to do this, for example, in relation to referral for investigation, the student must demonstrate that it is important to make a critical selection of investigations which will be helpful to the patient, non-invasive where possible, and cost effective. In order to do this the student will list and critically

evaluate investigations ordered and be able to find out and sum up the costs involved.

Before going on to consider this in more detail, it is necessary to describe the situation in which the student is involved in general practice, the amount of time he has there, and how he spends that time.

### TIME SPENT BY THE STUDENT IN GENERAL PRACTICE

This paper is concerned with the second year of the course. During the three university terms of that year, each student spends one half-day session once a fortnight with his general practitioner supervisor. In all, therefore, he can be expected to attend for a maximum of twelve to fourteen sessions in his second year.

During a session the student will interview and examine a patient whom the doctor has pre-selected for him. This patient should suffer from a condition which the student has studied as one of his 'working problems'. This sounds, and at times is, difficult to organise, but with fore-thought on the part of the supervisor it can usually be arranged. For example, if a patient visits regularly for supervision of hypertension it may be quite easy to ask the patient to come a little early for the next appointment and to arrange this for a time when a student is present.

For the remainder of the three hours which he spends with the practice, the student will sit in on consultations and analyse the process he sees. He will, in addition, be called by other members of the practice to see conditions which occur frequently in general practice and rarely in hospital - a patient with measles for example. He will also talk with the other members of the staff and perhaps with the local pharmacist, but his major task is the analysis of the consultative process. It is here that the specific objectives of attachment come to the fore.

### THE SPECIFIC OBJECTIVES

In a traditional attachment, a student may sit and observe what is going on in the consulting room and learn very little. What he does learn depends upon his own motivation and on the doctor's willingness to teach. In this situation, neither party may really know exactly why the student is there, except that it is obviously a "good thing", so that even the teaching may be wide of the mark.

As a contrast to this the student at Newcastle has to analyse what is going on, note it, and act upon it. The general practitioner will probably not have to do any 'teaching' whatsoever except perhaps to explain why he took the action he did. His most difficult task is to avoid the type of teaching to which he is himself accustomed, and to adopt a socratic discourse approach returning question with question and thereby encouraging the student to observe, think and deduce for himself.

An example may clarify this:-

A 48 year-old high school master comes to see his doctor about his indigestion: it emerges that a friend of his recently had similar symptoms and was found to have cancer of the stomach.

The doctor has treated the man for several years and remembers that he is inclined to react to stress by the development of psycho-somatic symptoms. His records show that he had identical symptoms to the present ones this time last year (associated with school examinations). The patient had forgotten this. Last year's symptoms had responded to simple reassurance and treatment. After examination and consideration of the issues involved, doctor and patient agree to apply the same remedies again and let a little time go by with the assurance of investigation of the symptoms should things not settle down.

This brief sketch of a mundane consultation cannot, of course, expand on all the issues involved. The unsensitized student might well dismiss the incident as another example of a neurotic wasting the doctor's time.

An examination of the process with a set of objectives transforms the consultation. Using a single sheet of paper which lists the objectives as a reference, the student will see that this patient exemplifies several issues on which to comment. Thus the student should be able to demonstrate an appreciation that (for example):

1. In this case the general practitioner was the most appropriate person for the patient to consult first. He should be able to list alternative sources of primary care with their accompanying advantages and disadvantages
2. Personal knowledge of the patient was crucial to the outcome
3. It is frequently safe and appropriate to make use of time as a diagnostic tool
4. Psychological and social factors played an important part in the production of this patient's symptoms
5. It is important to show consideration of the patient as a thinking, feeling person by involving him in discussions regarding management and being open to change of plan in the light of the patient's feelings. In this case open acknowledgement of the anxiety about cancer and a careful evaluation of the symptoms led to a solution comfortable to the patient

Having read all these issues into the consultation it is to be hoped that when his time comes the student-become-doctor will not dismiss his patient as neurotic with a script for tranquillizers, a request for a Barium X-ray and if, as expected that is normal, a referral of the by now highly anxious patient to a consultant physician, and perhaps even a psychiatrist! An absurd extrapolation? Perhaps: but it must happen not infrequently and account for a substantial proportion of the costs of health care.

Having seen this case, and a number of others during his session, the student may elect as his 'task' which will constitute part of his assessment, to:

"Discuss three or more cases in which the general practitioner's personal knowledge of the patient has helped to clarify the patient's problems and to assist in working out with the patient their appropriate management".

## ASSESSMENT

There are some thirty-two specified objectives and a similar number of tasks which the student must perform in relation to these. Each task seeks to draw upon experiences derived from a number of consultations. In writing up a task the criteria for success are that the report should express its message clearly and concisely, in two hundred words or less. In order to ensure that the cases are not all made up (though even that might have some educational value) the supervisor is asked to initial these tasks and also the student's notes on patients he has examined.

Informal, formative assessment of these processes will take place frequently between student and supervisor. Assessment will take place in the middle of the second term of the year. The two part-time Academics responsible for this general practice attachment will require four satisfactory 'task' summaries and four case notes at this stage and eight of each by the middle of the third term. Assessment in this, as in other assessments at Newcastle, is criterion based and graded as either satisfactory or not satisfactory. In the event of a non-satisfactory performance, opportunities will be given for remedial work, but continued failure would be taken into account in considering a student's progression through the course.

## SELECTION AND TRAINING OF GENERAL PRACTITIONERS AS SUPERVISORS

The annual intake of medical students at Newcastle is sixty-four. The requirement is thus a minimum of thirty-two general practitioners with practices suitable for students. The position of supervisor carries no financial reward and no academic title; it involves extra work and planning and the possibility of damage to the practice caused by patients' reluctance to have students present at consultations. All the many interested general practitioners in the area were interviewed by the two part-time 'Fellows in Community Medicine' who are themselves general practitioners part-time. In addition, a comprehensive handbook was written explaining exactly what was required of supervisors. This was reinforced by two evening training sessions which dealt partly with the mechanical details of the attachment, and partly with expectations, and anxieties concerned with the attachment both from the supervisors' and the students' viewpoint. The educational purpose of the attachments and the methods to be used were reviewed and discussed. These sessions were very well attended: indeed, the general enthusiasm for the attachment is uniformly high.

These initial contacts will be supplemented by encouraging the students to discuss problems with supervisors and by continuing close contact with the Faculty. The processes of evaluation will ensure further contact.

It would be naive to suggest that all supervisors are ideal role models who, as a result of their training by the Faculty, are good non-directive facilitators of student learning. The students, however, are accustomed to self-directed learning which has been fostered by their problem solving training. At this early stage of his career a student is still at heart a patient, a consumer of medical services. Our students are sometimes critical of consultations which they see both in hospital and in general practice. They are encouraged to put themselves in the patient's position and, if they were unhappy about a consultation, to ask themselves why this was so.

## EVALUATION

Newcastle lays great stress on the evaluation of the educational process. Indeed the Faculty possesses as one significant portion of its structure a Division of Medical Education and Programme Evaluation and students are expected to participate in a constructive appraisal of their educational experiences as an essential part of their education towards the ability to adapt to, and participate in change.

Evaluation of the general practice experience addresses itself to the questions:-

1. Is the practical organisation working as it was intended?
2. Can the arrangements be improved?

Answers to these questions are sought by means of informal and formal contact with both students and supervisors during the attachment, by use of a log book in which all incidents relating to the attachment are recorded, and by questionnaires.

3. Did the attachment work out in the way we expected?
  - 3.1 Was there any conflict with the broad aims of the Faculty?
  - 3.2 Is learning in general practice coherent with other learning in the Faculty?
  - 3.3 Did the arrangements make the best possible use of the facilities available?
  - 3.4 To what extent have students progressed towards the attainment of the objectives?
  - 3.5 Has the choice of supervisors facilitated, enhanced or prevented the attainment of the objectives?
  - 3.6 Do the objectives and designated tasks facilitate learning?
4. What have the students learned in general practice that they could not have learned as well, or better, elsewhere in the course. Do they consider it a worthwhile part of their studies?

Answers to these questions will again be derived from the sources already mentioned. In addition a video-tape will portray a consultation which might be in either a hospital or a general practice setting. Students will be asked to identify the setting and to list the observations on which they have based their selection.

## CRITERIA FOR SUCCESS

Although the criteria differ slightly from question to question, a 'satisfactory' reaction to the attachment by 80-90% of the students is required for the scheme to be deemed successful.

It has been emphasised that there is close integration between the problem solving aspects of the medical course and the practice of professional skills both in hospital and in general practice. Another strand of the course was touched upon in relation to the Programme Objectives: this relates to the study of the problems of groups.

A group may be defined as the inhabitants of a geographically defined area, or as a number of people with a similar occupation, or with a common problem; the aged for example. As a sub-strand of this 'Group Medicine' activity, students are called upon to study a family over the course of two and a half terms. This family attachment is organised and facilitated through general practitioners who introduce the student to a family with a member who has some chronic medical problem.

The development of Group Medicine at Newcastle forms the subject of the paper which follows.

### CONCLUSION

This paper is conceived and delivered in the context of a session devoted to Field Work. The experience of a student in a general practice is closely analogous to other forms of field work. Attachments to general practice, in common with many other types of experiential learning, have tended to be haphazard. The present programme is designed to provide the student with clear guidelines as to what he is expected to achieve, what he can do to achieve it, and how to assess his achievement.

This approach is consistent with true scientific field work: the geologist looking for minerals is more likely to succeed by a careful study of the terrain and identification of the strata likely to be productive, than is a casual hiker picking up rocks. It is to be hoped that the medical student, similarly armed with an analytical approach, will be enabled to unearth that which is of value in the general practice consultation, and that this study of process as well as content will be of lifelong value.

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# Field experience in community medicine - Development at Newcastle

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This paper describes the establishment of an innovative course in Community Medicine which deals with the delivery of health care to groups of people in the community, in contrast to the more traditional understanding of Community Medicine as the care of the individual in the community (General Practice). Field experience is central to the educational process of this course and student learning is focused around an active involvement in meeting some of the health and social needs of communities in Newcastle.

The paper goes on to discuss methods of assessment, student reaction to the course, and proposals for field experience in the health care of groups other than geographic communities. In the second year of the curriculum, this will be concerned primarily with workers as a group (occupational health) and the needs of families of the chronically disabled.

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In the previous paper, Dr. Reid outlined the essential components of the Newcastle curriculum and the methods by which students achieve the levels of competence expected of a newly graduated doctor. The educational strategies involved in this curriculum focus from the outset on the practical application of knowledge rather than its acquisition as an end in itself, and the learning of medical information takes place in the context of solving problems presented by patients. To this end students are interviewing patients and learning the skills of history taking from the third term of their first year, a stage which students in other medical faculties do not normally reach until late in their course.

Learning the skills of those aspects of medical practice which are performed outside a hospital setting also takes place in real life contexts rather than classroom situations, and field experience in this aspect of the curriculum occupies a significant proportion of student time. Dr. Reid has discussed the educational process as it affects one aspect of Community Medicine, that of general practice, which may be defined as the delivery of health care to individuals in the community. In this paper I will focus on the educational issues arising from another aspect of community medicine, the delivery of health care to population groups.

## INDIVIDUAL MEDICINE AND GROUP MEDICINE

Of the forty-five Programme Objectives that outline the competences expected of a graduate from the Newcastle Faculty, thirteen are listed under the heading of community medicine. This number represents a sizeable proportion of the skills that a graduating doctor will have acquired after five years work and reflects a commitment by the Faculty to the development of a more community oriented medical training. Dr. Reid has already noted three of these objectives: a mention of others will indicate some of the competences expected of a Newcastle graduate. For example, at the conclusion of his undergraduate course the student will:

1. have demonstrated his understanding of the importance of environmental factors in the causation and maintenance of illness, and in its response to treatment.
2. have demonstrated a positive, consistent and informed attitude towards the prevention of illness and the maintenance of health, at both individual and population levels.
3. have demonstrated his awareness that major changes in individual and community health are likely to depend as much or more on change in the behaviour of people as on the manipulation of the physical environment.
4. have demonstrated that he has the necessary knowledge to make an effective contribution to the identification and solution of community health problems and to evaluate the results of his intervention.

These broader aspects of medicine have an entirely different focus from that of most medical practice: rather than dealing with individual patients, this branch of medicine is concerned with population groups. In an early statement of its programme of "Learning Objectives for Undergraduate Medical Education", the Faculty distinguished between these two branches of medicine as *individual medicine* and *group medicine* (Working Paper XIV). In that working paper Individual Medicine is defined as:

"The delivery of health care to an individual and his immediate family or associates. It includes all those aspects of medicine where an individual patient can be identified and presents to the doctor, even though the individual can be characterised as a member of a defined group".

Most present day medical practice concentrates on individual patients in a wide variety of settings such as general practice, specialist practice and hospitals. Concern with the health care of groups however is the focus of other branches of medicine; preventive medicine, epidemiology and occupational health. This second type of medical practice, known as Group Medicine, is defined as:

"The health care for a community or group in situations where the care of a single individual is not the primary consideration. A significant number of health problems can only be resolved through the organisation of appropriate resources and the development of community-wide preventive strategies. This broader view of the practice of medicine will contribute in the preparation of future doctors to adapt to change and to participate in change.

The distinction between these two types of medical practice is not merely pedantic. There are important practical reasons for emphasising the existence of a perspective in medicine that is concerned with the needs of population groups rather than the needs of individuals. To quote the working paper again:

"The demand for health care already exceeds the financial ability of even the world's wealthiest nations to satisfy it. It is likely that demand will continue to outstrip the supply of resources; rational decisions about the most needy areas for deployment of

these scarce resources cannot be made at the level of individual medicine, which is still the most overwhelming preoccupation of contemporary medical education".

The skills required for the practice of these two types of medicine differ and separate sets of objectives were developed to define the necessary competences expected of a Newcastle graduate. The objectives for individual medicine outline the basic skills required for the diagnosis and management of the medical problems of individuals. The objectives for group medicine outline skills that are concerned with the major aspects of delivery of health care to population groups. There are five major aspects of group medicine detailed in these objectives: identifying needs for health care, identifying health care resources, meeting needs for health care, reducing the need for health care, and assessing process and outcome of health care (evaluation).

#### GROUP MEDICINE IN THE CURRICULUM

Individual medicine forms the major part of the curriculum. Students work through medical problems presented by simulated clinical patients at the rate of approximately one per week, in sequences organised around the major bodily systems. Student learning centres around the analysis of a problem presented by a patient on a videotape, with additional details of the case described on paper. There is continual emphasis on students learning within the context of a real life problem.

Simulating the health problems of population groups within a classroom situation is an unsatisfactory method of developing student competences in this field. Student learning in group medicine therefore takes place in real life contexts. Throughout the curriculum, there are opportunities for students to participate in projects which expose them to a variety of population groups and their specific health needs. These groups are defined in terms of the characteristics which the members of the group have in common, such as age, sex, ethnic group background, occupation or geographic location. In each case students are required to analyse those aspects of life-style and environment specific to a particular group which determine their health status and needs; to identify resources available for meeting those needs, to identify strategies for reducing health care needs; and to evaluate the process of health care delivery to that particular group. For the early part of the curriculum students undertake group medicine in parallel with but separate from their individual medicine activities. In later years these two strands will be integrated as far as possible.

The first group medicine activity takes place in the context of geographic communities. There are a number of reasons for this choice. Although modern communities lack the social cohesion found in traditional villages the members of a geographic community nevertheless share a living space, facilities, and services. The locality is also an index of socioeconomic status and there is a considerable literature describing the inequalities of health status between class and status groups in western society. Those higher on the status scale tend to have better health, greater chance of living to retiring age, and better access to health care facilities (see e.g. Powlis 1977). Tudor-Hart expressed these inequalities in the 'inverse care law': "the availability of good medical care tends to vary inversely with the need of the population served" (Tudor-Hart 1971). We endeavoured to expose students to these inequalities in health care by allocating them to a range of communities in Newcastle that typified the class and status differences within Australian society.

The first student intake to the Faculty took place in 1978. Group medicine in that year was highly experimental for all concerned, as there was no precedent in Australian medical education for the activities which ensued. Coe and Pepper's description of the Community Medicine programme at the University of St. Louis which significantly parallels that of Newcastle, did not become available until the end of 1978 (Coe and Pepper 1978). For staff and students the experience was very novel.

The aim of the first year of group medicine was to give students an overview of the cycle of health care delivery to population groups, ranging from the identification of group health needs through to the evaluation of strategies aimed at meeting those needs. Each group of eight students was allocated to one Newcastle community. The eight communities selected for student activity displayed some diversity: one new, and two older middle-class areas; two inner city working class localities; one suburb comprised predominantly of housing commission dwellings; one older inner city community that was rapidly becoming renovated and social mobile; and a suburb with a long tradition as a mining community.

The task of students in first term was to analyse the structure and function of the community with a view to identifying significant health needs. The analysis was presented at the end of term in a joint report and a presentation to the entire student body. Students were expected to work in pairs in researching one particular aspect of the group's task, but the reports of the four pairs of students were added together to form a coherent joint report.

The objectives for term 1 1978 indicate the work required of the students. They were as follows:

When presented with a locality (such as a post code area) the student will, in combination with another student, prepare a joint report accurately describing the first of the following items in any one of the remaining:

- a) a problem list of some of the basic health needs of the community perceived by several people interviewed by the student.
- b) the basic demographic structure of the community, using readily available census data, bearing on the above basic health needs of the community.
- c) the main institutions available for health care of that community and the needs which they currently set out to meet.
- d) the major social and economic features of the community which have a bearing upon health needs.
- e) examination of the ways which might be used to prevent the health problems either by community action or by individual action, weighing up the pros and cons of each approach in an elementary way.

Data available to students included census material, information gathered by private research bodies and academic research work on particular communities. Students also contacted the health care facilities in the communities including both professional and voluntary agencies. Most groups undertook small surveys in order to determine residents' perception of their health needs. Students were time-tabled to spend three hours per week on group medicine, with as much time again usually involved in further research.

The reports presented at the end of term 1 varied considerably in quality, but overall displayed a sophistication which was surprising considering the youth of the students. The high standard was partly explained by the presence within nearly all the groups of at least one older student who had some background in a relevant field such as social work, nursing or psychology. With the exception of one group, all the reports satisfied the objectives. The students were weakest in their analysis of health problems, tending to list the opinions of health professionals or a few community residents without any detailed analysis. The analysis of community health needs however, is complex and demanding and something which many full-time community health practitioners have yet to achieve.

COMMUNITY ACTION IN TERMS 2 AND 3

Student activities in terms 2 and 3 developed from their identification of significant health issues within each locality under study. The students were required to fully document the particular health problem in their locality, and to plan, implement and evaluate a limited strategy of community action to meet this need. Two of the communities studied in term 1 were found to be lacking in any overt health issue that could be easily identified in the time available. The two groups allocated to these communities were then transferred at the beginning of the second term to two of the inner city working class localities which were studied by students in term 1. These two groups continued to work separately from the group which preceded them in the community, but were able to make use of the first term reports.

A brief outline will demonstrate the wide range in the activities performed by the students in terms 2 and 3. Two student groups working independently in an inner city locality established discussion groups for women. One of these groups attempted to raise the participants' awareness of health issues pertinent to women by instituting classes and discussion on contraception, gynaecological problems and sex education generally. The other group focused on the suburbs primary school and established a mothers' group concerned with parenting problems: they invited speakers including a dentist, paediatrician and a G.P., to lead discussion with the mothers on problems they were having with their children.

Groups working in the two communities with significant numbers of housing commission dwellings were also successful in their activities. One group established a playgroup for isolated young mothers living in a large housing commission complex of flats. Many of these women were unaware of other mothers in the same situation prior to the establishment of the playgroup. The students identified the lack of contact between young mothers with similar needs for support and recreation outside the confined areas of the housing commission dwellings. During term 3 a successful programme was implemented that brought these women together and established the structure of a playgroup organisation. The group continued to thrive after the students' withdrawal at the end of the third term. The nutrition of primary school

children became the focus for the other group working in a suburb with a large number of Housing Commission tenants: working with the school's canteen committee, the group developed a programme for improving the childrens' nutritional intake by eliminating foods with low nutritional value from the school tuckshop. In both instances the students were successful in a limited piece of community action that had significant preventive health value.

The other four groups were less obviously successful in their efforts. One group working in an old established community identified the isolation of many old people as a significant health issue. The influx of many younger people into the area had disrupted the traditional social networks which had provided support and care for the aged residents. The students attempted to implement a 'job swap' scheme whereby residents exchanged services without monetary gain in order to stimulate contact between community residents. The scheme got off to a tentative start but floundered after students withdrew at the end of term 3. Another group of students became involved with an aged peoples' group within a church organisation in an attempt to stimulate independence among the groups' members. There were some small successes in this direction, but little could be shown to have changed following the students' withdrawal.

Youth unemployment became a significant issue for another group but their attempt at increasing the awareness of local G.P.'s and health professionals of the likely health problems of the unemployed met with some resistance. The final project to be mentioned was perhaps the most ambitious: a student group working in an inner city industrial locality were concerned about the lack of organisation to focus the involvement of residents in their community. In common with communities of a similar social composition, there was an inability of residents to collectively influence decision making and the distribution of resources, including those of health care, in the community. The students explored various strategies for setting up such an organisation, and in the process produced some excellent reports discussing community structure and the relevance of various community development strategies. Their work had reached the point of identifying a small group of people willing to be involved and of a number of community issues around which such involvement could be organised, when the year ended and their activities had yet to bear fruit.

Students were assessed on a joint report presented at the end of each term. The report analysed the issue on which the students were working, and outlined their participation in the strategy devised to meet that need. Some of these reports were major documents of over fifty pages in length, although the average length was closer to twenty-five pages. The reports were assessed by tutors of groups other than their own. Student performance was judged on the quality of analysis of their project and the reasons for its success or failure. No group was judged unsatisfactory simply because its project had been unsuccessful. In each term there were two groups whose efforts were not judged to be satisfactory, and in both cases the students were required to revise their reports and present them again.

EVALUATION BY STUDENTS

Papers describing innovative courses in higher education frequently make a point of emphasising the positive reaction by students. Unfortunately



I cannot report such reaction by Newcastle medical students to their group medicine activities. Circumstances did not permit a rigorous evaluation in the first year of operation of the course, but it would be less than honest to deny student dissatisfaction and difficulty with this strand of their curriculum. In attempting to understand this reaction by students however a number of educational issues are raised that are pertinent to any consideration of field experience.

Student feeling about the course varied widely, and individuals changed their views during the year but there was an overall lack of enthusiasm compared with other curriculum activities. There were of course students who responded positively throughout the year but they were in the minority. Most students went through ups and downs as they tried to come to grips with what turned out to be a very complex unit of study, and even more so when they attempted to implement the strategy to resolve a community health problem.

The nadir of student reaction was undoubtedly the end of term 2 and the beginning of term 3. By that time issues had been identified and students were attempting to implement strategies of action. They soon found that attempts at changing long established patterns of behaviour invariably meet with resistance and inertia. The early enthusiasm of many students for social action was gradually dissipated by the inevitable frustration caused by community apathy. Professional community workers develop an immunity to frustration that could not be expected in the students. Expressions of dissatisfaction were frequent and widespread.

The end of term 3 saw a distinct improvement in student response to group medicine. By then the strains of action were over and a more balanced view was possible. At the final group medicine review session of the year, there was considerable opposition to our proposal to alter the 1979 course to accommodate the changes which had seemed necessary following their earlier response. The students then expressed the view that although the work had been difficult, skills had been acquired which could not have been learned in any other way! In an evaluation conducted at the end of term 3, students rated group medicine in term 3 as one of the most positive aspects of the whole year's work.

The balanced view was expressed in a comment contained in a course review published in the student orientation handbook written by 1978 students for those entering the Faculty in 1979:

"Student reactions to group medicine were so varied that I am reluctant to tackle this area of the course. It would be fair to say that this was the most traumatic area of effort spent for most students. The need to work as a group towards commonly decided goals can be side-stepped in any strand of your course but this one. I feel the diversity of projects finally presented by the different groups in 1978 does credit to the students but a lot of difficulty had to be overcome before the final report on the final day. I am sure you will run into students with nothing positive to say for group medicine but you will also meet students who found it one of the most rewarding tasks of the year".

## AMBIGUITY AND ROLE MODELS

There are a number of possible reasons for the students' negative reaction to group medicine, and a prime one relates to the very nature of field experience. A significant reason for instituting field experience within professional training is to prepare students for the ambiguities of real life in which their professional practice will take place. Learning in the field is more effective in this regard than learning in the classroom, which can never adequately simulate the complexities of everyday life. The experience of ambiguity is therefore a necessary preparation for the frustrations inherent in the practice of group medicine. Professional community health workers for example regard frustration as an occupational hazard; a limited experience of frustration is necessary for students learning the art if they are to be adequately trained.

These difficulties are particularly pertinent to medical students. The ambiguities of field experience are heightened when contrasted with the apparent certainties of individual medicine. The exact structure and function of the body stands in marked contrast to the variability of human behaviour. Many students have an image of doctoring as the application of an exact scientific knowledge to the problems of individual patients, a situation in which they are very much in command. The delivery of health care to population groups in the context of social and political uncertainty is therefore likely to rank poorly in their priorities.

This view is reinforced by the role model provided by most medical practitioners, which presents the doctor as a practitioner of individual medicine. Most students perceive the prime goal of their training to be a qualification in individual medicine, and therefore perceive skills in group medicine as less central to their training. Three of the tutors in the 1978 group medicine course were medical practitioners, with backgrounds in epidemiology, internal medicine and medical administration, but who lacked experience in direct community action. The other tutors were either social scientists or social workers whose lack of a medical background may have contributed to student perception of the course as less relevant to their needs. The absence of role models in group medicine is a significant factor in student reaction; a reaction that is likely to persist until the health care of groups achieves greater status and prominence in medical practice.

## OBJECTIONS TO OBJECTIVES

A prime difficulty identified by students concerned the specificity of objectives. Some students expressed the view that their task in the community was ill defined. They believed the responsibility of identifying a health issue and attempting its resolution was too great a burden. They would have preferred a greater degree of structure in the exercise, including a definition by the Faculty of specific problems with which they could work.

As Dr. Reid demonstrated in the previous paper, objectives have a significant effect in determining student activity in a field experience. In the general practice setting, objectives transform the witnessing of a consultation from a passive observation into an active learning process. The general practice situation however only involves three people, and the activities

which take place there are reasonably predictable.

Thousands of people are involved in the life of communities and the activities of such large numbers of people are by no means predictable. It is not possible to predict with any precision the details of social life that will be encountered by eight students entering a community. The broad issues of likely relevance are available from demographic statistics: for example paediatric problems are likely to be a prime health problem in a new housing estate containing a high proportion of young married couples. However the precise details of issues and appropriate strategies can only be ascertained from a detailed study. Any advanced study of this kind to pave the way for student activity would short-circuit a very important aspect of a student's own learning process. More specific objectives would also have restricted the students' activities to a narrow range.

The objectives for term 2 are a case in point. Students were asked to demonstrate in a report that they had:

- a) identified a significant health problem in their locality for further study and described it accurately.
- b) identified and clearly described in a scientific manner reasons for the problem, including those which are routed in the structure and function of the community.
- c) correctly applied to theoretical bases for various forms of community action to resolve or reduce this health problem.
- d) identified the practical possibilities and limitations of implementing such courses of community action for the resolution of the health problem.
- e) identified further resources required to implement such a programme.
- f) given documentary evidence that the group has gone some distance towards implementation of a plan to resolve the problem if this is appropriate.

Two examples of student activity will illustrate the diversity of work which was judged to indicate satisfactory achievement of these objectives. Mention has already been made of the group in a locality where the lack of community organisation was an issue. Their work involved a sophisticated conceptualisation of community processes and considered such broad issues as power, urban planning and community decision making. All these issues were dealt with in the context of considerations of the distribution of community resources, including those of health care. Their focus was thus on community-wide processes.

At the other extreme was the work of the student group on the nutrition of primary school children. Their successful campaign to improve the nutritional quality of food sold in the school tuckshop was concerned purely with school, except in dealing with educational authorities located outside the community

in the Regional office. The focus of their action was considerably narrower in community terms than that of the first project, as they dealt with a specific issue within a single community institution. The first group was concerned in contrast with broader issues that involved all community institutions.

The scope of each of these two projects is markedly different, yet both demonstrated an achievement of the objectives. In both instances students<sup>o</sup> identified a need and went some distance towards meeting that need. The difference between these two projects indicates the range of activities open to students if objectives are defined in a flexible manner. A more rigid definition of objectives by the Faculty would have hampered the problem-solving process conducted by the students.

The experiences of term 1 in 1979 have already demonstrated this point. In an attempt to accommodate some of the student dissatisfaction with the previous year we included specific suggestions of community health issues in the objectives for the 1979 student cohort. Six of the groups were allocated to the same communities in which students worked in 1978; two groups are breaking new ground in other localities. Most students therefore are able to draw on the work done by the preceding students. We suggested chronic disability and problems of the aged as two community health issues for students to assess in terms of unmet needs in their communities. The two issues are written into the objectives for term 1 of 1979 as suggested points of focus for analysis.

It is already apparent however that for most groups other issues have come to the fore. Only one group has focused on meeting the needs of the chronically disabled in a community context, while the others have already become involved in different issues, including community health education, the needs of single parent families, and aboriginal health. The conclusion we draw from this diversity of projects is that a certain degree of flexibility is necessary in the construction and interpretation of objectives for field experience in Community Medicine.

#### GROUP MEDICINE IN LATER YEARS

Geographic communities are but one of a number of groups to be considered in the context of health care delivery, and the students will encounter the health needs of others throughout the five year course. Although group medicine activities will be integrated in later years with those of individual medicine, there is one additional activity which students undertake separately. This is an attachment to a family over the period of one year.

Knowledge of the role of the family in the etiology, management, and rehabilitation of illness is included in the Programme of Objectives as competence expected of a graduate of the Faculty. The definition of individual medicine includes within its province the family of an individual patient, but the emphasis in this definition is on the family in relation to the sick individual. Consideration of the family as a unit demands a conceptualisation of the family as a group: the principles governing the structure and function of the family viewed as a system are of a similar order to those governing the

structure and function of other human groups. A learning experience in relation to family factors in illness is therefore considered to fall within the orbit of group medicine.

To add a medical focus to this attachment, families are selected which contain a member suffering from a chronic disability. The chronically disabled are a group whose continuing management needs are receiving increasing attention from the medical profession, as evidenced by the creation of Chairs in Rehabilitation Medicine in a number of Australian faculties. To view the management of a chronic illness in the context of the whole family is to add a new dimension to its study. In the second year of the course these two areas of group medicine are combined in a single activity.

Students are allocated to a family from the practice of the G.P. with whom they have been placed. The families contain a member suffering from a chronic illness such as asthma or diabetes; or a chronic physical disability such as paraplegia or an amputation. We discourage the selection of any families in which there is a terminal illness or an overt behavioural pathology such as alcoholism.

There are three general objectives for the family attachment. The first is concerned with the family's internal dynamics and examines the effect of the chronic problem on the family's roles and decision making. The second objective examines the family's resources within the community and assesses the extent to which these resources help them cope with the problem. The third objective requires the students to analyse the factors determining the family's response to communication on health matters.

Students will spend on average two or three hours per fortnight with the family in their own home. It is likely that some of the more capable students will become in effect additional members of the family, while the less capable are likely to function merely as observers. As 1979 is the first year of the family attachment, we have only just begun the exercise. At the point of writing, students are still lining up their contacts with the families. Preliminary feedback from students is favourable: this may be interpreted as suggesting that for medical students, a family is a more manageable unit of study than is the complex structure of a whole community.

## CONCLUSION

In this paper I have described the first year of an innovative course in Community Medicine that emphasises field experience as an educational strategy. I suggested that student reactions to this course were attributable to both the difficulties of community action and to the ambiguities inherent in the nature of field experience. Objectives in this course provide a framework for student learning but an excessive rigidity in their construction and interpretation may diminish the educational value that field experience uniquely provides.

Our approach is new and innovative, but ultimately we hope to achieve a balance between student satisfaction and the necessary demands of a training in group medicine. Only then are we likely to achieve the Faculty's aim of

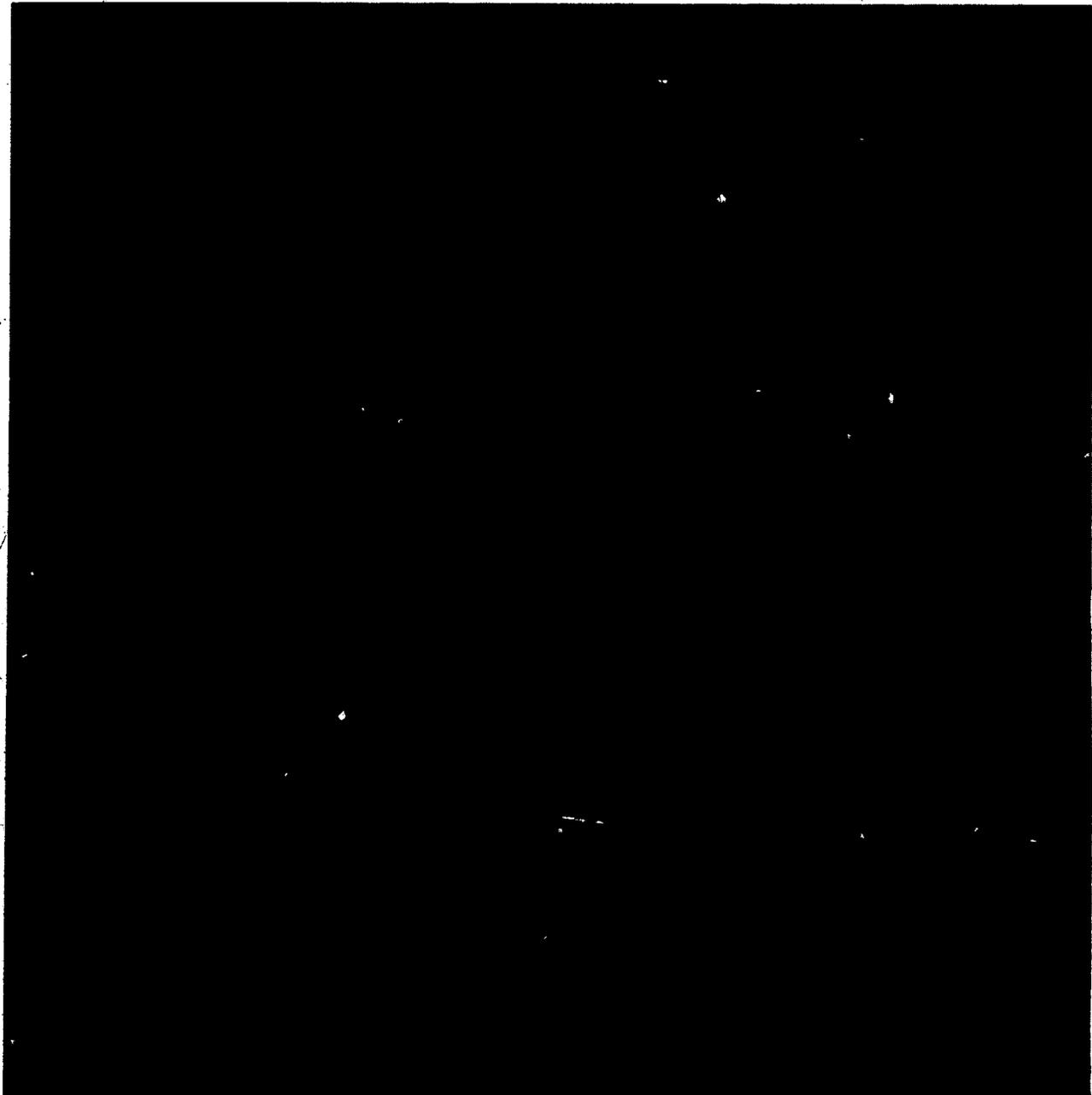
producing medical practitioners who are responsive to the communities they serve.

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*Diane Luke/Harry Stanton/Geoff Foster/Marjorie Searle*

# **Student response to continuous assessment, examination format, and peer marking**

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A mixed group of seventy-nine full-time and part-time students studying for Associate Diplomas in Clinical Laboratory Techniques, Health Surveying and Applied Biology, was studied.

They were brought together to study a core course in Microbiology. Since the students from the various groups clearly identify their future roles in the work-force as different, the relevance of the core course material was seen differently by them. The aims of the teaching strategy were; to stimulate students to study regularly, to increase interest in the subject and, by improving their understanding, to improve their overall examination performance.

To help realise these aims the programme was designed so that examinations were conducted every two weeks. The papers were a mixture of multiple choice questions, short answers and some practical work. The students were involved in peer marking under the supervision and guidance of staff. The academic performance of students was assessed on a numerical scale and their attitudes to the examination system were assessed using a questionnaire with provisions for free comment.

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## INTRODUCTION

The course on which this investigation was carried out is a basic course in Microbiology dealing with the growth of microorganisms, methods of controlling their growth, their relationship to human disease and an introduction to immunity. The course was designed to cater for students in the second semester of a four semester programme at Associate Diploma level. The minimum entry standard was a T.E. score of 741 compared to a minimum T.E. score of 810 for students in a degree programme.

The course was meant for Health Surveying Students (HS) and Students of Clinical Laboratory Techniques, (CLT).

The course in microbiology ran for fifteen weeks and consisted of one lecture and three hours of practical per week.

After studying the core course, the clinical laboratory techniques students proceed to more advanced courses in laboratory techniques fitting them for laboratory work. The health surveying students on the other hand, proceed with more theoretical subjects for which the core course provides a basis. Naturally the students from these different courses view their future roles, and the subjects studied, from different points of view.

## THE DEVELOPMENT OF THE COURSE UP TO THE INVESTIGATION

The course started with relatively small numbers of students but grew rapidly. The type and mix of students is shown in Table I.

TABLE I  
THE CHANGES IN TYPE AND MIX OF STUDENTS IN THE COURSE  
MICROBIOLOGY II

YEAR	SEMESTER			
	AUTUMN		SPRING	
	PT	FT	PT	FT
1975	-	HS(13)	-	-
1976	HS(6)	HS(11) CLT(13)	-	-
1977	HS(5) CLT(1)	HS(11) CLT(24)	-	-
1978	-	HS(22) CLT(31) AB -	HS(7) CLT(9) AB(9)	

- HS = Health Surveying Students
- CLT = Clinical Laboratory Techniques. Students
- AB = Applied Biology Students
- ( ) = Student Numbers
- FT = Full Time
- PT = Part Time

### ASSESSMENT METHODS

Initially three intrasemester tests of twenty minutes duration and requiring short written answers were used. These were spaced about one month apart. A final two hour paper of four essay questions rounded off the examinations. This method worked well for two semesters where only health surveying students were taught. In the third semester a mixed group of health surveyors and clinical laboratory technicians did not perform so well. The increased class size and a change in attitude apparently had an effect on performance. Both groups felt that the work was biased towards the interests of the other group. In the next semester Autumn 1977 the group consisted of five part-time health surveyors and one CLT student who was repeating the subject. The same format was used as before except that students helped to mark the intrasemester short-answer tests. The tests were marked in class and valuable discussions resulted. All of the students passed the examination at first attempted.

The Spring Semester of 1977, brought 24(CLT) and 11(HS) students into the course. In an attempt to detect potentially failing students and encourage regular study habits, the teaching approach was modified.

The examination format was changed. Multiple choice questions were introduced as well as short answers, essays were dropped. Mixed theoretical and practical problems were presented and the students helped to mark the multiple choice questions. This practice again generated useful tutorial sessions.

The student performance gauged on passing the examinations at first attempted without supplementary examinations, was only slightly improved. They still found difficulty in application and problem solving exercises. Answers to short questions were still poorly answered.

### THE EFFECTS OF CHANGING THE TEACHING STRATEGY

The aims of the revised teaching strategy were; to stimulate the student to study regularly, to increase interest in the subject and by improving their understanding and to improve their overall examination performance.

To help realise these aims examinations were conducted every two weeks. The papers were a mixture of multiple choice questions, short answers and some practical work. Six examinations worth 15% each and a final one worth 10% helped to reduce the apparent stress of each examination. The practical time for this subject was reduced from three to two hours per week. In addition to this the practical work load in the two hours was reduced to allow more time for discussion of results and student involvement in marking the papers.

Papers were marked under the supervision of demonstrators. The nature of the practical work necessitated a ratio of staff to students of 1:8. This enabled small group tutorials to be developed spontaneously during marking sessions. Student involvement in the marking process and immediate feedback with discussion of answers helped the learning process. Two other factors had an important bearing upon the success of the programme. One was that practical classes for full-time HS and CLT students were conducted separately. The more mature and highly motivated mixed part-time groups worked well together although they were allocated different areas to work in as opposed to being mixed on the same bench. The other factor was that students of similar academic ability were grouped together to work as a team. Their ability was judged on their performance in the introductory microbiology course. This allowed a more even pace of work to develop within an ability group.

The gradual building of confidence of students in themselves encouraged them to greater efforts. A number became frustrated enough in their early lack of improvement to seek advice on study methods. Others realised that greater effort was required on their part and made that effort after the first few tests.

The academic performance of students was assessed on a numerical scale finally expressed as a percentage. Scores for individual tests were two or three times their final value e.g. 30 questions worth one mark each were set then scored out of 15.

This procedure tended to reduce the emphasis placed on one right or wrong answer and allowed a more thorough coverage of the subject matter.

### STUDENT RESPONSE TO THE TEACHING AND EXAMINATION PROCEDURE

In order to obtain formal feedback from students they were presented with the questionnaire, Table II which was filled in anonymously before the final part of the assessment.

TABLE II

Question

% Response

FREQUENCY

I prefer assessment to be ....

- |                                   |    |
|-----------------------------------|----|
| (a) mainly by a single final exam |    |
| (b) midway and at the end         | 17 |
| (c) every two weeks               | 80 |
| (d) monthly                       | 3  |

Reasons for preferring fortnightly exams

It encouraged regular study  
 Material was learned and retained easier  
 Positive regular feedback allowed students to gauge effort and performance.

TYPE

I would rather answer...

- |                     |    |
|---------------------|----|
| (a) Multiple choice | 14 |
| (b) Essays          | 0  |
| (c) Short answers   | 11 |
| (d) Mixed, a and c  | 75 |

Preference for mixed questions

Allows student to display specific knowledge  
 Essays marked more subjectively  
 MCQ's helps to jog memory  
 Essays more often a test of expression as opposed to knowledge.

WEIGHTINGS

I think the weightings for the examinations....

- |                               |    |
|-------------------------------|----|
| (a) is good                   | 34 |
| (b) about right               | 54 |
| (c) bad                       | 4  |
| (d) should be more at the end | 8  |

COMMENTS ON WEIGHTINGS

Allows recovery if one test done badly  
 Relieves stress and prevents cramming at end of semester  
 Equal emphasis on all sections of work.

TABLE II (CONTINUED)

IN GENERAL

% Response

The Exam questions were.....

(a) too easy	3
(b) too hard	10
(c) challenging	84
(d) irrelevant	3

Further Comment:

Questions

I did not receive enough information about my mistakes and misunderstanding...

This type of assessment made me work harder ...

The style of this type of examination helped me to understand the whole subject more thoroughly

This type of assessment was fair ...

Too much time was spent in examining and not enough in getting information to the student ...

This type of assessment helped me to improve my study skills and habits ...

	TRUE	FALSE
I did not receive enough information about my mistakes and misunderstanding...	28	72
This type of assessment made me work harder ...	77	23
The style of this type of examination helped me to understand the whole subject more thoroughly	87	13
This type of assessment was fair ...	87	13
Too much time was spent in examining and not enough in getting information to the student ...	12	88
This type of assessment helped me to improve my study skills and habits ...	56	44

Do you think that the stress association with this style of assessment compared to other styles of assessment was:-

greater than	21
less than	50
the same as	26
don't know	3

In general I enjoyed the course

<u>TRUE</u>	<u>FALSE</u>
87	13

Please give any further information which you believe might be useful. This may include good and/or bad points about the course and assessment.

In conclusion the expectations of lecturer and students were realised. The changes instituted were accepted by the students the challenges accepted and the pass rate was high 94.8%, the average mark being 60%.

The course in 1978 was a success largely due to the tolerance, patience and cooperation of my colleagues and, not least of all, the students.

# An educational model for assessment of student competence in medicine

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&

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A two-stage process for the assessment of students' competence at the end of each academic term has been introduced for medical undergraduates in their first year at The University of Newcastle, N.S.W. The first assessment, held in the week following the end of the learning phase for a term, enables students: to demonstrate their competence on pre-stated learning objectives; to review their peers' performance and the nature of acceptable (model) answers for each item in their written assessment; to examine their own scripts with their group tutor; and to receive diagnostic advice and academic guidance to plan their remedial studies if necessary. The latter activity is vital for students judged 'not-competent' at that stage, since they are given an opportunity to demonstrate their skills in a second assessment held nearer the end of term.

Student evaluation of the assessment programmes after the first year of introduction has been invaluable in helping to make the system a viable process as an integral aspect of the Faculty's educational philosophy.

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## INTRODUCTION: What is different about this Faculty's Education Programme?

The new Medical Faculty at The University of Newcastle, N.S.W. has introduced an innovative undergraduate programme, designed to avoid certain inadequacies of contemporary medical education. One feature of the Newcastle programme is that its curriculum is structured by a series of clinical patient-problems. Course-work is based on problem-solving (e.g. middle-aged man, complaining of chest pain) and in this paradigm, students encounter all aspects of medical, social or financial importance for each problem-type. A second feature is the total integration of the curriculum across academic and clinical strands. Knowledge and skills traditionally held as pre-clinical science (i.e. biochemistry, psychology, anatomy, etc.) are presented only in the context of each patient-problem. Students are presented with clinical problems in their first year and this process extends throughout their five-year programme. Both of these features promote meaningful learning, and the curriculum has little in common with the traditional pre-clinical/clinical sequence of medical education. A more comprehensive statement of these, and other educational features is given in the Faculty Working Papers (FWP), especially number VI.

## How does the assessment programme tie in with these features?

The Faculty regards examinations (i.e. student assessment) as an integral aspect of its educational programme. In one sense, this approach de-emphasises their traditional role as a formal 'certification of competence' only. In another sense, it emphasises the remedial role of examinations. A comprehensive programme of assessment should also provide students with timely and specific diagnostic feedback on their performance. The specific principles outlined for the Faculty's assessment programme are that it should:

- (i) provide students with opportunities to demonstrate application of knowledge, attitudes or skills where appropriate, and not just the recall of information;
- (ii) test for problem-solving and patient-management as the most important applications, besides the use of the underlying sciences in justifying decisions for action;
- (iii) allow students who can complete learning tasks earlier to proceed with elective studies (to follow their own interests, and promote independent learning), but at the same time
- (iv) allow the other students more time and guidance to achieve competence without the problem of intervening (new) learning tasks;
- (v) provide rapid knowledge of results, with an emphasis on diagnostic information to allow students to monitor their own progress and plan remedial studies;
- (vi) be an open system, where standards are known, and where the required levels of competence are stated beforehand;
- (vii) encourage assessment of their own and their peers' performance as a means toward their own further education, through observation, discrimination and decision-making;
- (viii) encourage students to evaluate carefully this and other aspects of the educational programme, towards their future skills in adapting to, as well as fostering change responsibly.

Most of these principles represent radical departures from traditional university practice, but they were incorporated into the actual programme that was instituted for the assessment of students' clinical problem-solving near the end of Term 3 (i.e. end of Year 1). Table 1 indicates the time-tabling of events related to that assessment which took place two weeks before the end of the term. Problem-based learning for Term 3 centred around two five-week Blocks - one related to five gastrointestinal patient problems, and the other to five renal and urinary tract patient problems.

The assessment programme for Term 3 involved a two-stage process, in line with the Faculty's philosophy that the first summative (or Term) assessment should initially provide students with an opportunity to demonstrate their skills, devoid of as much 'fear of examinations' as possible. It should also allow the Faculty to make academic judgements of the students' competence in problem-solving. Students whose written performance was judged not-competent at this first assessment were able to use the procedures set down in Table 1 to help them plan towards achieving and demonstrating the mandatory levels of skill at a second summative assessment, conducted nearer the end of that term.

## How was the assessment programme conducted?

Student competence in problem-solving and patient-management was assessed by a separate paper (Section) for each of the two Blocks studied in Term 3. In both Sections each patient-problem was explored using the Modified Essay Question (MEQ) technique (see Hodgkin and Knox, 1975). This uses a sequential presentation of items, some of which involve practical skills such as interpreting x-rays, microscopic sections and videotaped segments of behaviour as they related to the given problems. This technique needs careful development (on the part of staff in its construction, and students in the method of completing it). All items must be attempted; in a strict sequence; and without students being allowed to preview new items or review/change previous answers. Most of these difficulties can be overcome (see Figure 1), and student feedback indicates a reasonable acceptance of this assessment instrument.

## What aspects of the programme provide remediation?

The Review session for clinical problem-solving in Term 3 (see Table 1) served a dual purpose. Firstly it provided an open forum for students and Faculty staff to discuss systematically the items included in each Section and their respective model answers, together with relevant issues from the students' educational experience during the term. Not only did this approach serve to make the criteria open to student scrutiny, but it also underlined the need for students to examine external criteria critically before using them to interpret the work of a peer. Thus, the second purpose was to offer a form of peer review where each student was asked to judge another student's script (anonymously) in relation to the model answers. Two consecutive two-hour sessions were scheduled in a lecture theatre for reviewing each Section in turn. Almost all students and the appropriate staff (i.e. group tutors, assessors for each Block - including general practitioners, specialists and academics) attended the Session. An independent faculty member acted as chairman of the sessions. When the scripts had been distributed amongst the students, the model answers for each MEQ item were presented in turn using overhead projection transparencies, and students were encouraged by the chairman to raise any queries they could not resolve in relation to the script they were marking. Questions or suggestions on additional or alternative answers were referred to the panel of assessors seated at the front of the theatre. The assessors would decide to admit or reject such suggested amendments. Where a test item appeared to be ambiguous, the assessors reserved the right to delete the questions from their final judgement of student performance. Students were required to judge each item as either Satisfactory (S) or Not Satisfactory (NS) on the basis of the criterion presented with its model answer. If they could not make a confident decision for any item, they were asked to mark (D) for a doubtful response. These judgements (S, NS, or D on each item) were then transferred to the summary mark sheet attached to the back of that Section, and all scripts were recollected and passed on to the appropriate assessors for that Block.

In the Checking sessions for each Section the assessors validated the student-markers' judgements on each item and made recommendations on each student's overall competence in problem-solving. The two checking sessions were conducted simultaneously in adjacent rooms and required all assessors to attend within the nominated period - thus facilitating discussion and striving for consensus in marking items originally judged doubtful (D). After they had finished checking all scripts item by item, the panel of assessors for each Block worked towards reaching agreement on which written performances clearly demonstrated competence overall, and which ones definitely did not. After

providing appropriate notes for recommended remedial studies, and which Faculty members should be consulted for that particular problem, the assessors then turned their attention to those students whose scores fell between these distinct competence and non-competence limits. As the written performance of these students included a number of doubtful (D) responses in relation to the model answers, they were each scheduled for an interview with two of the assessors.

The Interview was designed to resolve any doubts on a student's competence in specific items in the MEQs. This assumed that students might have misinterpreted the question(s), or expressed themselves poorly on paper in spite of their knowledge or skill in relation to the specific objectives that had been tested. In this 15 - 20 minutes session it was not intended to intimidate students with a form of viva or re-examination. After each interview, the assessors conferred before making a judgement of overall competence on clinical problem-solving in conjunction with the newly-resolved responses. They then reviewed all scripts, providing counselling advice or explanatory notes for academic guidance on the summary mark sheet in preparation for students reviewing their own scripts with their clinical problem-solving group tutor.

The Results Panel consisted of the Block Chairmen and the chairman of the Assessment committee. They met to review the assessors' judgements and diagnostic comments on clinical problem-solving (Table 1). This group made final decisions for each student as to whether the written performance met the expected standard, or whether he was to be asked to sit for the second test at the end of term for one or both Blocks. Following this meeting, each student was then given a recommendation on his overall performance together with a photocopy of his summary results sheet for each Section which contained more specific, diagnostic details (see Figure 2).

The Tutorial Review session was introduced in Term 3 to allow each group of eight students to: review their own examination scripts for both Sections; identify and discuss individual problems within the group with the tutor; identify and discuss group strengths and deficits in performance relating to specific aspects of the summative assessment programme; and identify and discuss aspects of the MEQs which they felt clearly deserved attention for future reference. Information on the utility of this session was sought in separate one-page reports from each group's secretary and its tutor. A subsequent meeting between group tutors and assessors for Term 3 followed up issues arising from these reports.

The academic Counselling sessions for students with deficiencies in performance identified on their scripts were governed by two considerations. First, as an integral part of Faculty philosophy each student was ultimately responsible for his own learning, so that a measure of self-initiative was required. Students for whom specific guidance was recommended had to make their own appointments to see the appropriate Faculty members. Staff were asked to make themselves available on the last day of assessment week for urgent counselling - since the second assessment was scheduled for a fortnight later. This raised the second consideration, namely that students needing most guidance in planning their remedial studies deserved earliest attention.

The second assessment programme (referred to as 'reassessment' in Figure 2) was streamlined in relation to the first assessment. It was designed to allow students a second (and final for the term) opportunity to demonstrate competence using MEQs. It took the same form as the first assessment, and was of comparable size (i.e. item total) and difficulty. Model answers were prepared in advance, but were not subjected to scrutiny in a student review

session. Each script was examined by two assessors for the relevant Block, and a third and independent Faculty member was consulted before a final decision was made. Interviews were not used, but unsuccessful students were given extensive counselling and academic guidance by the Chairmen of the relevant Block(s).

The Student Progress Committee of the Faculty considered the collated assessment results for each student. Where the Results Panel had recorded a judgement of non-competence, the Committee would review any extenuating circumstances before entering FAIL in the student's academic record. All other students would receive an ungraded PASS. The Faculty's philosophy emphasises the need for collaboration, rather than competition among students. Honours for the degree are not decided until the final year of the course, when students can be assessed for competence in actual clinical practice.

#### What do Faculty and Students think of the Programme?

While the general programme of assessment had been systematically developed over three terms, it also depended heavily on constructive student feedback and similar evaluations by the Faculty (e.g. problem-solving group tutors and assessors) for its rapid and relatively smooth introduction. Information from students was gained through two methods during the Programme Evaluation session (see Table 1) in the first assessment week. The first method was a printed (37-item) questionnaire, summarising the students' impressions of the first year, which dealt with several aspects of assessment in Terms 2 and 3. Most students agreed that summative assessment was tied to the objectives for that term, but that they would have understood the assessment system better if there had been more 'trial' assessments available. There was no clear indication of their feelings for improving the organisation of the four-day programme for first assessment, and they strongly felt that marking each other's scripts and the Review sessions themselves were valuable learning experiences. However, those 17 students who received interviewing and those who received counselling in Term 2 because of their unsatisfactory performance at first assessment had mixed reactions to the validity of those two processes. Unfortunately, no evaluation of reactions from the nine students in a similar position in Term 3 was possible at that stage.

Another encouraging feature was the students' increasing acceptance of the Modified Essay Question for assessing clinical problem-solving. Although the students' greatest concerns were the ambiguity in questions relating to model answers and their desired breadth or specificity, many of the administrative hazards in the case format and time-management had been eliminated. Another serious concern raised by group tutors, as well as by students during their Tutorial Review sessions, was the apparent discrepancy between assessors in marking the same item. In spite of requiring all assessors to be in the same room simultaneously for the Checking sessions, this problem was created by having each assessor mark complete student scripts rather than one assessor marking a related set of items in all scripts. Such an alteration for future terms may eliminate this criticism and even reduce the time required for the Checking process.

The second method was a nominal group process conducted in the lecture theatre after students had completed the questionnaire (Colditz, 1978). It addressed the strengths and weaknesses of the first year course, and the first topic listed was summative assessment. Its positive features included: examinations at the end of each term (giving students an indication of their competence); the Review session, which showed the examiners which questions

were ambiguous, highlighted students' own inadequacies and involved the whole class as well as many members of the Faculty, and its timing soon after the assessment; the Interviews, which gave students a chance to express themselves though associated with some stress; the privacy of results and the lack of grading (however the statement of results (via Figure 2) for the term helps them know where they stand); and the flexibility in the assessment itself with regard to additional time for completion if requested.

The negative features were listed as: inadequate definition of the depth and specificity required in answers to questions; the indecision shown by the panel of assessors in the Review session on some issues; student involvement during this session needed clearer guidelines and more time for making decisions on each item; lack of practice in answering examination questions of the MEQ format and poor knowledge of its virtues; and inconsistent requirements between successive Blocks in assessment of cumulative learning.

The Faculty itself has had to come to terms with this novel and "open" approach to assessment, so contrary to previous experience with examinations. Assessors have not found it easy to construct assessment instruments that test for specific objectives and for problem solving. They have recognised the need for validation of the model answers through consultation with other colleagues, and they have become more comfortable with making quick decisions during the Review sessions. Certainly, the role of chairman during these sessions represents a very special challenge in conducting an open and productive forum for educational progress.

The overall impression gained from the student evaluations and subsequent discussions involving problem-solving group tutors and assessors was that the Faculty had developed a working model of assessment which, although not without its problems, was capable of providing students with accurate information about their competence on the pre-stated learning objectives for that term as well as giving the Faculty a valid and reliable process for making academic judgements.

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Colditz, G.A. (1978). An Innovative Undergraduate Medical Course. The Students' View of the First Year at The University of Newcastle, N.S.W. Faculty of Medicine, The University of Newcastle, N.S.W.

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TABLE 1

TIMETABLE FOR FIRST ASSESSMENT - TERM 3, 1978.

	MORNING	AFTERNOON
Monday	Section A (2 hrs)	Section B (2 hrs)
Tuesday	Review Session for Sections (students and staff)	Checking session for Sections (staff only)
Wednesday	Programme Evaluation by students	Interviews
Thursday	Results Panel (Staff only)	Tutorial Review session
Friday	Counselling	Counselling

FIGURE 1

AN EXAMPLE FROM ONE OF THE TWO EXAMINATION SECTIONS

On the left-hand page appeared:

The case so far...

Your fifth patient of the afternoon is a 31 year old typist, Mrs. Bruce who has only recently returned to Newcastle from Sydney with her husband, after two years away. They had previously been patients of yours until October, 1976.

She complains that she has the "runs again, Doctor," and you ascertain that her diarrhoea has been intermittent for the past 4 weeks.

New data...

As the interview proceeds, you discover that:

- she has been previously healthy (in the two years in Sydney)
- the diarrhoea consists of three to five loose motions of normal colour each day
- there is no blood in the motions
- she has not lost weight
- she suspects that her husband is being unfaithful

On the right-hand page appeared:

B-2 Explain how at least three of these items help you to distinguish between your hypotheses.

(5 mins)

(C. Time : 41 mins)

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FIGURE 2

EXTRACT FROM OVERALL RESULT STATEMENT  
AT FIRST ASSESSMENT

The results of your assessment are:

- |       |  |                          |
|-------|--|--------------------------|
| (i)   | entirely satisfactory ... ..   | <input type="checkbox"/> |
| (ii)  | satisfactory, but some counselling will be helpful... ..   | <input type="checkbox"/> |
| (iii) | not entirely satisfactory, go ahead with the mini-elective, you will need counselling in depth and your electives supervisor has been informed. Reassessment is required ...   | <input type="checkbox"/> |
| (iv)  | not satisfactory, you may not proceed with the mini-elective, you will need counselling in depth and your electives supervisor has been informed. Reassessment is required ... | <input type="checkbox"/> |

# The adaption of FIAC to evaluation of university teaching

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In this paper the application and adaptation of the system of verbal interactional analysis according to Fianders will be described. Based on the experiences in relation to university didactic advanced training and especially university didactic advisory guidance, the system which has been developed is appropriate for the analysis of speech structures in various types of classes. The results can be taken as a starting point for didactic considerations and didactic changes and, thereby, they can be of important significance in assisting the attempts to improve university classes.

The development of the observational categories specific to the university will be described and substantiated. The construction of different characteristic values for classes will be illustrated and finally, the various forms of matrix analysis will be presented. Furthermore, it will be explained how the model, by use of the possibility of data processing, can become a quick feed-back instrument which can deliver to the person concerned the important findings about his type of courses.

In the frame of university didactic individual advisory guidance at the Free University, W. Berlin, more than 70 classes of various types and from different departments were described and analyzed. In this contribution, the characteristic value for each specialized field as well as the problems with which the utilization of the models are bound, will be given. It especially has to do with building a bridge from a "strict" procedure of evaluation to dealing with innovative didactic strategy.

## 1. Introduction

In this paper I will describe a model of verbal interaction analysis according to FIAC. This model was developed to support a system of didactic consultation and counseling, which was established in 1975 at the Free University / Berlin. Normally it serves as a starting point for didactic discussions between the faculty of the university and the members of the "Arbeitsstelle Hochschuldidaktische Fortbildung und Beratung" who are responsible for continuing faculty education at the Free University.

First I will outline the structure of the training programme for university faculty, then I will point out the possibilities of verbal interaction analysis in optimizing teaching at the university level. After a discussion of some of the details of this system of analysis I will conclude by giving two illustrations of our actual work.

## 2. A system of didactic consultation and counseling

From 1975 to 1979 a "Modellversuch" was run at the Free University with the objective of developing and evaluation a curriculum for teacher training in higher education.<sup>1)</sup> The teacher training system developed during this project, has been adopted by the university and is currently part of the university structure.

The reason for this "Modellversuch" was a very simple one. Teachers in higher education - normally in the German system professors or assistants - form the only group of teachers who have never had systematic training in teaching. It is generally considered, that a person, who has earned a university degree will automatically be able to teach.

1) A "Modellversuch" is a research and development project which is limited in time and which is supported 50% by government and 50% by university funds. The members of this "Modellversuch" were B. Berendt, H. Necht, H.-W. Hoefert and the author of this paper.

Several researchers discovered that this is not the case. The students in particular complain about the quality of teaching. The enormous quota of drop-outs in our system of higher education - of course not only due to the quality of teachers - indicates that our universities are having severe problems in this area. In one of the latest studies more than 30% of the students reported that they would never choose the same department if they had a second chance. (Krönig, 1979)

In the "Modellversuch" we tried to construct a system of learning which would cover the main professional abilities desirable in a lecturer. In the center of the model we have three main parts: "didactic workshops" "didactic courses" and "didactic counseling".

## 2.1. The didactic workshop

At this time the system of didactic workshops is made up of six parts. Each of them takes about two days and is offered to all persons who lecture at the university - that means from professors to tutors. We offer workshops on the following themes: "cooperation", "communication", "setting up university courses", "examination of students and counseling", "evaluation" and "planning courses and curricula". The special structure of these workshops is described in several publications and in the final report of our research and development project (Berendt, Gralki, Hecht, Hoefert, 1979).

At this point I will only describe the main points of the structure.

We call a workshop a learning unit, where the participants have the opportunity to gain experience in "learning by doing". As defined by AUSUBEL we try to construct the workshops according to the concept of "learning by discovery". (Ausubel, 1968, p. 467 ff).

All workshops are product-oriented; that means that the participants are asked to create something in small groups and afterwards to compare their products in plenum sessions. They are asked, e.g., to prepare small lecture units or to write down a set of discussion rules and to lead a discussion according to these rules.

Up to this time about 200 persons have taken part in these workshops and we see that the acceptance of these workshops is still growing. In the future we plan to extend the workshop courses to include the themes of "setting up freshmen courses", "Keller plan" and "tests", because we know from evaluation results that there is a need for these courses.

## 2.2. The didactic courses

The second part of our teacher training system is the didactic course. This is a learning unit which includes 12 to 15 weekly sessions of about 90 minutes each. The courses are more cognitive-oriented than the workshops. In these courses we try to get across the main principles and problems of planning, organization and evaluation university courses by presenting past and present results of educational and psychological research.

Normally, in the middle of the course, we also offer a learning unit which is similar to the workshops described above. The participants have the opportunity to experiment with their own teaching behaviour. Assisted by video-tapes, we analyse special problems in lecturing and in classroom-behaviour - but these so called workshops are not goal-oriented and prestructured in the same way as the workshops are.

Didactic courses in this sense are open - just as the workshops are - to all persons teaching at university. They are open to members of all departments, but we also offer special courses if we get an inquiry from a department.

We know from the results of our evaluation, that we reach significantly different groups with these workshops and courses. Workshops in the form described above, are more acceptable to persons who recognize their own behaviour as a source of teaching problems and who are willing to change it. Courses on the other hand are more acceptable to persons who have a tendency to be cognitive-oriented and who want more "technical" help for their teaching problems.

### 2.3. Didactic counseling

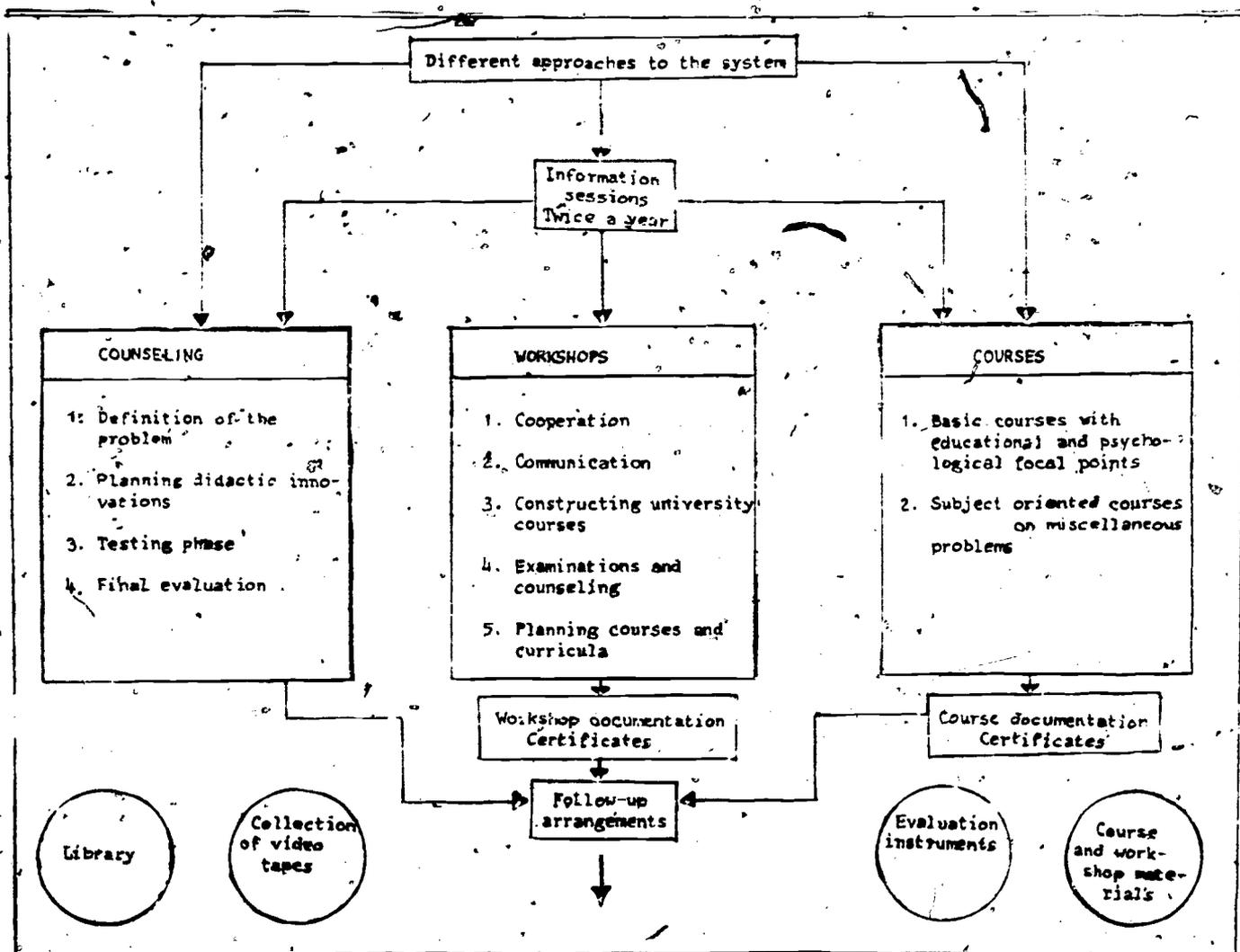
This is the third part of our system. It has grown out of the actual needs of the participants in workshops and courses. In both forms of training described above, we can focus only on general teaching problems. Except in very rare cases, we cannot analyse the special problems of individual lectures. This is the reason why early on we began to offer didactic advice to everyone who has problems with his class or who wants more professional aid in setting up his courses. In spite of this open form, didactic counseling is normally sought by persons who participated in one or more of our courses or workshops previously.

Although the individual cases of didactic counseling are quite different, the following four steps are typical for the counseling process:

1. First, there exists a problem. In most cases it is a teacher's problem, but sometimes it is also a student's problem. Although this problem is the reason why the lecturer is seeking help, a valid definition of the problem is not easy to obtain. Normally it takes us several sessions to formulate the problem in a way that can be analysed. During this first phase we try to analyse the teaching situation under various aspects. We talk with students or use different means of evaluation, e.g. we analyse verbal interaction in the manner I will describe in the following section.
2. Together with the lecturer we set up a plan to change the dubious elements of the teaching structure. Of course this is at first only a plan based on our experience with similar situations or sometimes based purely on didactic phantasy. In this phase it is very important not to overburden the client with didactic innovations that he would find to extensive.
3. In the next phase the lecturer tests the plan in a real teaching situation. It is necessary to point out, that the teacher retains full responsibility for the teaching process. We can only give him advice on how to teach or how to initiate a student learning process. We can never - and we will never - assume a part of the teacher's scientific responsibility.
4. It is the task of the final evaluation to test the effects of the changes in didactical structure. For this purpose we use the same methods as in the initial evaluation, e.g. FIAC, group discussions with students, attitude scales, semantic differentials etc.

These are the four main steps in each counseling process as practiced at the Free University in Berlin. Before I begin to discuss some details of the verbal interaction analysis, I feel it necessary to summarize the structure of our university teacher training system in the following sketch.

Fig. 1: The Berlin system of didactic consultation and counseling



### 3. The verbal interaction analysis system (FIAC)

I have already pointed out, that in the process of counseling we use different methods to evaluate the teaching situation. If we have the impression that one of the main sources of the teaching problem lies in a biased structure of communication, we use the following adaptation of FIAC.

I presume that my readers have some basic knowledge of the structure of FIAC; therefore I will concentrate on our modifications in the traditional system of FLANDERS (Flanders, 1970).

FLANDERS uses 10 categories to describe communication in the classroom. 7 categories belong to the main dimension of "teacher talk", 2 categories to the main dimension of "pupil talk", and the 10th category is reserved for all situations which are neither, "teacher talk" nor "pupil talk".

We have the impression that this system of categories is the result of a special philosophy of education which may be appropriate to a school situation but certainly not to the situation prevailing in German universities. So we have expanded the 10 category system to a 15 category system. The main idea which guided this expansion was to allow room for the reactions of autonomous, selfconfident students. We have the impression that since the late sixties

these resulting communication-structures have played an increasingly significant rôle in university classrooms.

The 15 category system now contains the following items: 1)

Teacher talk: (1) Praises or encourages, (2) asks questions, (3) lecturing, (4) giving directions, (5) criticizing, blaming, being ironic ( new ), (6) answers comprehensive questions ( new ), (7) goes into detailed answer of questions ( new ), (8) intervene in the discussion ( new ), (9) justifying ( new ).

Student talk: (10) answering contribution ( new ), (11) student talk which is neither answer nor question ( new ), (12) series of questions ( new ), (13) response to contributions of fellow students ( new ), (14) criticizing the lecturer ( new ).

Residual category: (15) Silence or confusion.

The further process of data collection and data analysis proceeded as described by FLANDERS.

First we trained observers to use the category system in the real classroom situation. For training purposes we used video-tapes of the lecture. After approximately five training hours we reached a sufficient rate of coincidence<sup>1)</sup> between the observers to begin the analysis.

The following table shows the number of observations made. Some of the observations were based on video-tapes; in other cases the observers visited the classroom to make their observations. The table shows another distinction: we compared the lectures of persons who took part in teacher training program with those who did not.

Table 1 : Verbal interaction analysis in higher education at Free University

	Workshop participants	Other	$\Sigma$
Real classroom situation	36	19	55
Video-tapes	-	15	15
$\Sigma$	36	34	70

Each observation took 90 minutes, but five minutes of observation alternated with five minutes of break, so that we have  $9 \times 5$  minutes = 45 minutes of observation time with c. 900 tallies.

The further process of data analysis was carried out by a computer. A FORTRAN program generated the 15 x 15 cell matrix and 12 indicators which were constructed on the basis of the FIAC 10-category-system but which were modified due to the expansion of the system.

- 1) This enlargement does not contradict FLANDERS. FLANDERS himself encourages researchers to modify the 10 category system according to their own needs. (Flanders, 1970, p. 124 ff)
- 2) In spite of some critical arguments, we used a SCOTT coefficient as an index of reliability. This coefficient reached scores of .92 and .87 respectively. For the critical arguments see HANKE et al. (Hanke, Mandl, Prell, 1973, p. 37)

The program produced the following indices, which are appropriate to describe the communication structure in a quantitative way. All indices are measures of percentages, the table contains the average percentage and the standard deviation on the basis of 70 cases.

Table 2 : Quantitative indices of verbal interaction

	$\bar{x}$ (%)	s (%)
1. Teacher talk	58.4	22.7
2. Student talk	32.8	21.3
3. Silence, confusion	8.6	6.0
4. Teacher response ratio	70.7	24.7
5. Teacher question ratio	27.9	25.6
6. Instantaneous teacher response ratio	81.2	18.8
7. Instantaneous teacher question ratio	27.7	19.0
8. Student initiation ratio	3.9	10.5
9. Content cross ratio	56.8	24.0
10. Steady state ratio	81.3	6.9
11. Student steady state ratio	73.4	16.5
12. Tolerance ratio	68.3	17.2

Except for the first three, the indicators need some explanation. The "teacher response ratio" shows the tendency of the teacher to react to student's ideas and feelings (Flanders, 1970, p. 102). The "teacher question ratio" on the other hand, is defined as an index "representing the tendency of the teacher to use questions when guiding the more context-oriented part of the class discussion" (Flanders, 1970, p. 102). The "Instantaneous teacher response ratio", is a statistic which shows the tendency to integrate student's ideas and feelings into the class discussion when the students stop talking. The "Instantaneous teacher question ratio" is an index of the teachers tendency to respond to student talk with questions based on his own ideas as compared with his tendency to lecture (Flanders, 1970, p. 104).

The next index is the "student's initiation ratio". This is a measure of the proportion of student's talk which is an act of initiation. The "content cross ratio" shows the extent to which the teaching is content-oriented. The following two indices measure how constant the classroom discussions remain in any category; the first index measures this in a global way, the second only for student communication structures.

The last index is a new construction. It indicates the teacher's ability to endure silence in the classroom without interrupting it.

After we analysed the communication structure of a lecture, the lecturer receives the results of this analysis within a few days. In line with the automatic procedures carried out by the computer, this kind of analysis is a very fast feed-back system. It is therefore possible for the lecturer to plan changes in his teaching behavior one session to the next on the basis of these results.

The lecturer receives the results of FIAC in the special form of pictogrammes. In this way he can compare his individual scores with the average statistics of the FU sample. We previously pointed out that we have integrated these results into a broader counseling process. We have been very careful not to sell the results as an "objective" description of the teaching process. In every case it was necessary to discuss the results, in order to connect them with the special objectives of the course and the personal abilities of the teacher. Even large discrepancies from the FU norm are not per se indicators of elements to be

criticised in the teaching process but they are certainly points worth discussing. In this sense the results are normally accepted by the teachers and we can overcome a , I believe specifically German, resistance to empirical research.

Our further analysis based on the 15X15 matrix depends on the specific progress of the counseling process.

The communication structure has been very nicely pictured by FLANDERS as a box flow diagram (Flanders, 1970, p. 119). I will not discuss here the way this box flow diagram was developed, although it is certainly questionable. In place of this I will give two examples of possible interpretations.

The first example represents a course called "Introduction to Chinese History." The parameters of this lesson are shown in the following table.

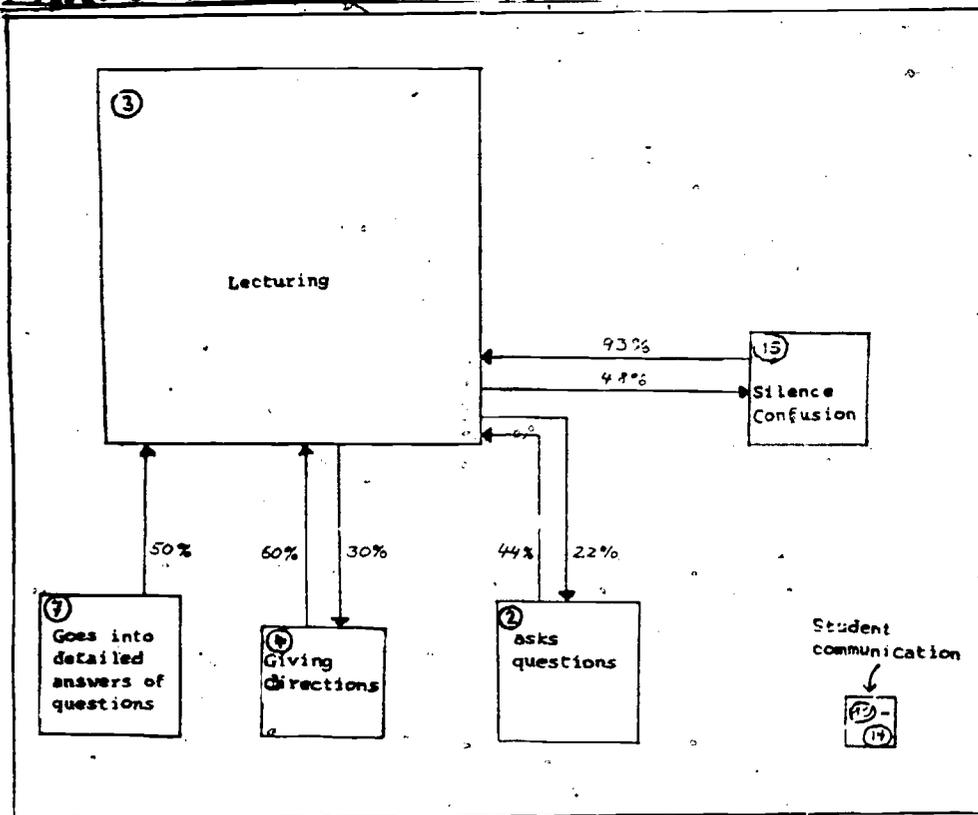
Table 3 : Parameters of a special lesson

	Example (%)	FU norm (%)
1. Teacher talk	92	58
2. Student talk	3	32
3. Silence, confusion	7	9
4. Teacher response ratio	55	70
5. Teacher question ratio	11	28
6. Instantaneous teacher response ratio	-	82
7. Instantaneous teacher question ratio	-	28
8. Student's initiation ratio	20	4
9. Content cross ratio	89	57
10. Steady state ratio	81	81
11. Student's steady state ratio	69	73
12. Tolerance ratio	28	68

The parameters show that this lecture was in great measure determined by the lecturer. His ratio of communication lies much higher than is common at the Free University. The ratio of student communication is correspondingly extremely low. There seems to be very little relation between the teacher and his students; indices 4 and 5 show this tendency. The lecture is content-oriented, much more so than in other lectures. Last but not least, the teacher has a very low tolerance level, as shown in the last index, for he was not able to endure silence in the classroom or to wait for student communication. By the way, the lecturer had asked for didactic assistance due to a very high drop-out quota in his class. He could not imagine why, because he had invested much time in preparing the course.

The box flow diagram gives us additional information on the structure of this lesson.

Fig.2 : First example of a box flow diagram



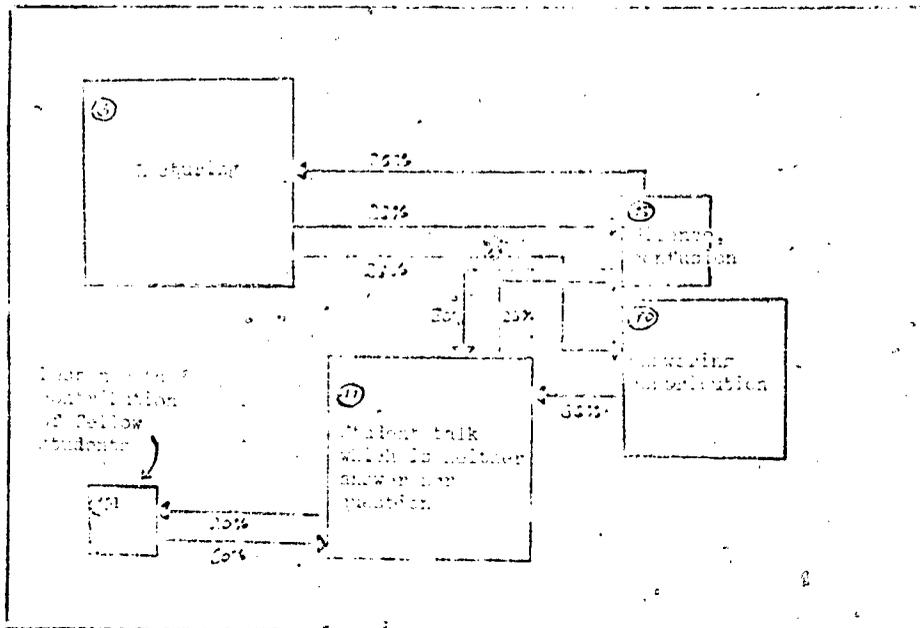
The diagram very clearly shows the enormous amount of teacher talk. There are several attempts to stop lecturing; the teacher tries to ask questions or to give directions, but he never reaches the students. There is no arrow between student and teacher communication categories, which would indicate a lively discussion or at least a structure between questions and answers.

These results led to a radical change in the didactic structure of the course with more emphasis on small group work and self-determined work on the part of the students.

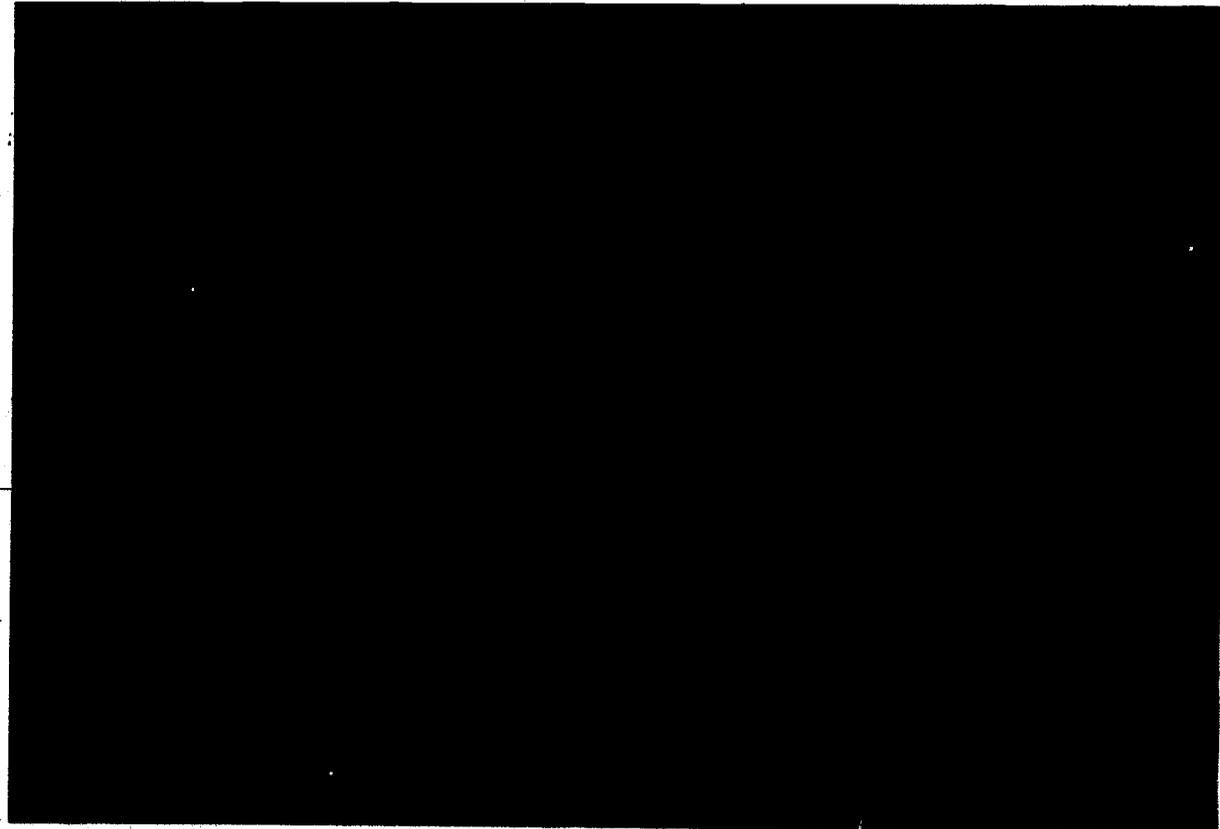
The next example illustrates another interesting communication structure. It is based on a course in multinational economics. Although there are more opportunities for students to speak - the indices show 49% teacher talk and 45% student talk - no real communication exists between the teacher and the students: The graph indicates two quiet, separate communication systems; the students talk with one another but have no or very little connections with the teacher. Further analysis reveals that one of the main reasons for this phenomena was some severe discrepancies in the ideological interpretation of economic systems.

It is not within the bounds of didactic counseling to solve problems like this, but it was possible to make the underlying problems in this course clearer.

Fig 3.: Second example of a box flow diagram



The purpose of this paper was to show how we use formal evaluation methods like FIAC in a system of didactic counseling. Of course, this is not the only method and it is not applicable in every situation. But our experiences at the FU Berlin do allow us to conclude that this method facilitates our main goal; that of optimizing teaching at university.



*Goeff Foster/Mrs. McAleese/Merv Fogarty/Ray McAleese/Derick Unwin/Senator Carrick/John Powell/  
Mrs. Carrick/Bill Hill*

# Evaluating an educational inservice program

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Education Units in CAEs and universities while being very diverse in many respects, usually have two things in common: they are charged with examining and improving the teaching and learning processes of their institution, and they are understaffed. Thus it is sensible to ask: how may a Unit most usefully deploy its limited resources in attempting to carry out its brief?

A short Orientation to Teaching programme for academic staff new to teaching is described. This programme was offered in a large metropolitan CAE in early 1978. Short term and long term evaluation of the programme by the participants is used, together with observation and discussion in an attempt to shed some light on the basic question: are such programmes worth carrying out? In the course of discussing this question the following will be considered: the place of teaching in the perceived priorities of staff; the motivation of staff to attend such programmes; the apathy/inertia of the status quo; the need for a reciprocal introduction-to-tertiary-studentship programme for students.

Education units are a relatively new phenomenon on the tertiary education scene, nearly all of them except for those at Melbourne University and the University of New South Wales having emerged since the turn of this decade. It is not proposed to argue the case for their existence in this paper; indeed, one would hope that it could be taken for granted by now that the concept which they embody - that examining and improving the educational processes of an institution is both respectable and necessary - has the approval and support of all Australian tertiary institutions. Throughout the '70's this concept certainly has had the approval of the federal bodies, the Commission on Advanced Education and the Universities Commission, and the Tertiary Education Commission.<sup>1</sup>

However, approval is one thing, support is another. By this latter criterion many but not all Australian Universities and CAE's endorse the concept to a greater or a lesser extent. Such endorsement, i.e. the extent of support, can range from a unit headed at professorial level and established with several academic appointments together with research assistants, graduate assistants, and research fellows, like the Centre for the Study of Higher Education at Melbourne University, to the appointment of a single person with some secretarial help, as is found in some colleges. Such variations in endorsement or support are not necessarily a direct concomitant of the size of an institution.

Just as support in the form of the number of academic positions, the level of the director and the number of support and ancillary staff of a unit, and the physical environment in which a unit works varies from institution to institution, so too does the perception of what an education unit should be about, as such perceptions can encompass quite diverse activities like formal academic research, formal academic programs, informal inhouse consultation and programs, media expertise, and staff secondment, for example.<sup>2</sup> Nevertheless, whatever units do, whatever their areas of special or distinctive activity, overtly their roads all lead to Rome, which in this case is in the most general sense the improvement of educational processes. In more specific terms this is usually expressed as improving teaching and learning.

Thus all units have a *raison d'être* in common. In these post expansionary or steady state days what many also have in common is a distinct impression of being understaffed. They were for the most part born in the halcyon days of tertiary expansion in the post-Martin decade, but like human children they needed years of nurturing to achieve maturity - and this they have not had. Some well established units have hardly faltered, but others have suffered temporary appointments, non replacement of staff, and a cut back in promised new positions. For unit staff there is a very real sense in which work generates more work, so whether a unit has a staff of one or ten or twenty there will always be a situation in which the possible workload outstrips the number of people available to shoulder it.

So if units share a common purpose and have in common an inadequate number of staff to carry it out, it then becomes sensible to ask: how may a unit most usefully deploy its limited resources in attempting to carry out its brief, or to put it more bluntly: what should unit people be doing with their time? This question becomes even more important when the unit is small and the institution is large, and it becomes of paramount importance when the unit consists of only one professional.

What should unit people do with their time? They are free to do whatever seems appropriate to them; I think this is essentially true no matter what extent or lack of interest in their activities is shown by their respective institutions. Should they conduct research and further scholarship in whatever part of the area seems appropriate or appealing? Should they systematically retrieve and disseminate material on teaching and learning to staff? Should they offer evaluative services like the administering of student feedback questionnaires or the help with or convening of course review committees? Should they offer specialist services in the course development area? Should they offer inservice programs - to the institution or to a faculty or department or unit? Should they mediate between the staff member and the AV equipment, or the AV idea? Should they provide 16mm projection services, or be able to make 35mm slides, or be experts on CAI, or even just be able to manage an SPSS program? Should they be fluent in three computer languages, or offer specialized computerised test services? Should they sit on the Academic Board or the Faculty Boards or the Course Review Committees or the ad hoc Committee which is considering whether course X needs updating or the subcommittee charged with arranging the triennial review by the state body or the professional body, or the Standing Committees for, respectively, Information Resources, Educational Technology, Student Services, Examinations, and Staff Development/Study Leave?

It need hardly be said that in light of such questions education unit people tend to have identity crises rather more frequently than "ordinary" members of academic staff. The latter know what they are about in the sense that at least at the undergraduate level there is a syllabus to be covered and a class list to be produced at the end of each term, semester or year. In general, no such certainty accompanies unit staff during a year's activities. They must be both entrepreneurial in order to have clients and extremely cooperative when their clients emerge. They must be high profile if staff are to hear about them and take them seriously, and low profile in encouraging staff to take responsibility themselves for whatever investigations into teaching and learning seem appropriate and for whatever steps are taken as a consequence. They must be academically respectable and this means qualifications, research and publication, but a great deal of their research and reporting must be

confidential. They must be academically autonomous but be seen to offer a service to other academics. They must be available for committee participation but they must also spend much time in informally making contacts and in that relaxed atmosphere in which serendipitous insights occur and clients are metamorphosed. Furthermore, the relationship between inputs and outcomes is tenuous in the extreme which, of course, makes the question of how to evaluate the worth of education units extraordinarily difficult.

I would now like to discuss the worthwhileness of one activity, the offering of cross-disciplinary inservice programs to staff whose attendance is of course voluntary. This will be done by considering one inservice program in the light of its effect if any on staff a year later, together with the issues and problems raised in the course of evaluating the program.

But why should one choose to spend time on inservice programs anyway, in view of the galaxy of possible activities outlined previously? Indeed there seems to be a feeling that such activities are of limited value, and they do not seem to be very popular with unit staff. (not to mention academic staff). Bennett summarises this attitude when he speaks of the "less predictable catalytic effect of inchoate group experiences in workshops as a means of raising (educational) awareness",<sup>3</sup> and the problem is compounded by the lack of behavioural interest shown by staff and the level of generalization that must be adopted in such programs.

I believe that there are good reasons why cross-disciplinary inservice programs should be offered. One is perhaps specific to the CAE system, in that colleges still recruit practitioners from the field. Such people having a strong sense of professional identity are perhaps more likely to be open to the idea that they need to learn something about their new career of teaching and thus may be more likely to attend formally arranged sessions on teaching and learning. In my experience another reason is that unless architectural pains have been taken, discipline based staff groups will tend to have little to do with each other, and the individual staff member may spend most of his institutional time mixing with his own kind. Thus one benefit of inservice sessions which recruit from all areas of an institution is that staff meet socially and intellectually across discipline boundaries. Another reason is simply that I believe that there are some fundamental concepts which it is useful (if not necessary) for staff to know about when deciding on their approach to teaching or the modifications they will make to their teaching. Finally, from a unit person's point of view such programs are a valuable source of contacts; an ideal outcome from an inservice program is that a participant might go back to his department fired by an idea and persuade the department itself to engage in a discipline based approach to the idea, or that a participant will maintain and extend the contact made with the unit.

The program in question was offered in a large metropolitan CAE in March 1978. It was mounted specifically for staff new to the institution and new to teaching, and was called an Orientation to Teaching Program. It offered three half day working sessions on teaching and learning, together with some socializing and orientation activities (the college has 4 campuses). A total of 16 staff attended the various working sessions. 11 of these attended for at least two of the three sessions, and it was this group who were interviewed for a long term evaluative follow-up of the program. This group was drawn from engineering, applied science, computing science, business studies, law, and humanities, and ranged in status from tutor to head of department.

The content of the program attempted to combine an identification and discussion of problems they already had or could foresee (we were already six weeks into semester) with a discussion of the distillation of what seemed to me to be the most important concepts that should be considered by a new teacher, together with some practical approaches to classroom behaviour. Briefly, in three sessions we: (a) identified and discussed problems which included: how do we know students understand? should students cooperate in tute exercises? class control in large groups; evaluation of teaching; (b) demonstrated introduction techniques; (c) approached the question: what is tertiary teaching? (d) by introspection listed the attributes of good and bad teachers we had experienced; (e) considered the implications of a learner centred rather than a teacher centred approach to the syllabus and thus dealt briefly with behavioural objectives; (f) considered the importance of interaction in student learning and demonstrated some techniques for facilitating this; (g) and had a brief hands-on session with the simpler AV aids like blackboard and OHP. Clearly it is impossible to adequately induct new teachers in three sessions, but the question remains: is something better than nothing in this respect?

The immediate evaluation of this Orientation to Teaching program was by short questionnaire completed by participants at the end of the program. The results indicated that the participants held a variety of opinions about the interest and usefulness of the content of the sessions, but perhaps more interestingly their responses pointed to some assumptions they brought as participants and colleagues to a program of this sort. Particularly was this evident in their attitudes to discussion - and by inference to discussion as a method of learning: Discussion itself was listed three times specifically as the most important or valuable part of the sessions, and six times as the least important. I realize of course that this may reflect my lack of ability to foster useful group discussion, but I am inclined to think that it at least in part also reflected assumptions made by technologists about the teaching of their subjects.

(Did they come really wanting simply to be told? A perennial question for someone leading an inservice session is: to what extent can you, should you or dare you provide a structured session, or to what extent do you set the scene, provide the stimulus then let them go where they may? I am always caught on the one hand with the knowledge that staff who come to inservice sessions, and particularly new staff, expect to get something from it - and that is a reasonable expectation. On the other hand I know some staff come initially in the expectation that I will do to them what they do to their students i.e. Hand down the engraved tablets.

My feeling is that they must be treated as autonomous and self directed adults, taking responsibility for their learning and therefore a didactic approach is not appropriate - rather, discussion techniques are indicated. But the basic and serious question remains: what are the appropriate processes for inservice sessions?).

Such an evaluation must be inconclusive, as the usefulness in the longterm of such a program can only properly be evaluated in the long term. In early April 1979 an attempt was made to do this. The following discussion is based on interviews with ten staff who attended the 1978 program; it makes no claim to scientific rigour as it is impossible in practical terms to isolate one input, control the variables, and measure output. However, much in life is intuitive and affective, and in practice we constantly make decisions about future actions which are based on verbal reports of other people's attitudes and feelings rather



than on rigorously quantifiable data. But given that, there remain methodological problems with the evaluative procedure. Because I went back to individuals to evaluate a program which I conducted, there was the danger that responses would be biased by the individual's reaction to me. I considered and rejected for various reasons the possibilities of an external evaluator and an anonymous questionnaire as two alternative approaches, but had it been practical I would have chosen the former. As it was, many of the interviewees commented on the pleasantness and desirability of the personal contact; for me it was professionally useful to renew contacts, and I suspect that the process of the interview may have been useful for the participants i.e. to recall what they remembered and what they had applied.

Three central questions were asked the ten interviewees:

(a) In retrospect, how useful for you was the Orientation to Teaching Program?

Five said it had been very useful e.g. "Very useful - the first time I realized there was a formalized body of knowledge concerning education"; "Yes, found it very good in giving me ideas and pointing out some things which might be obvious but I hadn't seen them". Three said it was good/useful/reasonably useful e.g. "Reasonably useful. Main value is to encourage you to think about how you teach, how you present things, how you evaluate"; "useful to compare self with other beginners, in making contact across disciplines"; "good program overall - but I'm too old a dog, to have my ways changed" (this from a 57 year old engineer). Two were neutral or negative about its usefulness e.g. "Got some ideas which I can use for reference - can see the point, but can't see how to apply it"; "apart from a couple of conceptual thoughts, it didn't impinge. It stimulated me to think about objectives but didn't alter my teaching".

(b) Is there anything you particularly remember about it?

This question elicited a certain amount of material, but whether this was encouragingly large or depressingly small was a value judgement I found hard to make. The content of the responses was precariously analysed into Concepts, Practices and Incidents. Between them the interviewees remembered 12 Practices either as points made in the program or subsequently adopted as a result of the program e.g. "Re-organizing class - to break 3 hour block into lecture/seminar"; "I try to use problems in Criminal Justice"; "Concept of 20 minute attention span"; "use of butcher's paper"; "the way you physically look at students"; "I look at my blackboard from the back of the theatre at the end of a lecture". They remembered 11 Concepts e.g. "Teaching methods should centre on learner"; "objectives was the main thing" (mentioned by three people); "what are you trying to achieve in a lecture compared with a tute group"; "talked about exams and what should be the best ways of teaching". Three Incidents were remembered and mentioned: the Royal Navy film Visual Aids, the video on how to lecture badly, and "I remember that you (i.e. J.L.) practised what you preached i.e. class involvement".

(c) Have you consciously used any of the ideas and techniques in any aspect of your teaching since then?

One person said no, he had not. Between them the other nine mentioned



17 examples of the conscious use of ideas and techniques. These were: communicating with a group of tutors to moderate standards; buzz groups (mentioned twice e.g. "I try and include exercises in the lecture - it's very easy for them to get into the habit of writing everything from the blackboard, this brings them back to having to think"); "marking blank" (i.e. avoiding the halo effect); class discussion and participation (mentioned three times); introducing techniques (mentioned twice); use of objectives was mentioned three times ("setting out of objectives - incorporated into a new course - was of benefit for me, is a lot better than it was"; "objectives - always do them for tutorials, students like it"); butcher's paper; breaking up the 3 hour time slot ("I break it into three separate hours with different activities"); non-penalty quizzes for diagnostic feedback; "it encouraged me to try various kinds of evaluative techniques in the classroom"; "it helped me to be more free with the blackboard - I use the visual aspect more". Clearly, some of the responses to Question (b) above also fall into the category of consciously adopted practices.

Of course, there is no way of proving that these staff members would not otherwise have used these techniques had they not attended the program, and there is no way of proving that these techniques were appropriately and competently used. Nevertheless the above catalogue is quite interesting, and may indicate that these staff when new to teaching perhaps had gained some sort of headstart - one person commented that "I never really thought about what teaching involved until I came to this course".

Two supplementary questions were asked:

(d) To what extent do you use AV in your teaching?

Responses here were generally unenthusiastic or negative, reflecting institutional frustrations and constraints as much as anything else e.g. "I use it when it doesn't break down and I have support (films, slides, OHP)"; two people preferred the blackboard to the OHP; "would like to but can't count on being in a room with them (AV aids)"; "don't use it, gave it away as a lost cause" (this lecturer used two films and one video in one semester); "nothing apart from OHP"; "don't use it much at all".

(e) Have you read anything on any aspect of tertiary teaching since the Program?

This was an attempt to ascertain the use made of the reading list and my enthusiastic endorsements of some sections of it, particularly Bligh's book on lecturing. It also reflects my assumptions that tertiary staff ought to feel that the theories and techniques of tertiary teaching are important and that knowledge about them ought to be pursued. Eight people said they had not read anything, some of these expanding on their blunt negative: "too much reading in my own area"; "language the books use is not the language of an engineer"; "no, but I feel comforted that you (i.e. J.L.) are around and can be contacted". One person had read three to four books, including Bligh, and another had read several books and articles on a course he was preparing on science for non-science students.

What do these staff in turn expect of reading lists they give out to their students? It seems a fruitful area to follow up; in the meantime it poses some



particular problems for an inservice person, i.e. do you continue to act on the assumption that staff being scholars and gentlemen, as it were, will turn to the scholarly activity of reading to deepen their knowledge in this area just as they undoubtedly read in their own area, or do you accept that, for whatever reasons, they are not going to read in this area? And if this is accepted, what then? Do you photocopy important pages, or summarize chapters feeling obliged to give them as much as possible? Do you entice them to swallow the pill by clever dodges like making a teaching topic the subject of a micro teaching segment? - or do you simply give them a reading list and act on the same assumptions they in turn act on with their students? But there are sanctions in the latter case - if a student does not read, he may well not pass. There are no such sanctions where a staff member is concerned.

A series of questions was asked which tried to ascertain whether the experience of the Program had oriented these staff to expect to participate in subsequent ongoing inservice programs, but this seemed not to be the case. All interviewees said that they read information about inservice programs as it came across their desks, and in answer to the question: Have you attended any subsequent inservice sessions? six staff said yes: However, of these, one had been only to a library orientation session, and one had been only to a 16mm projection workshop. Of the other four, one had been to one session on some aspect of teaching and learning, two had been to two sessions each, and one staff member had been to three sessions. Since the March 1978 Program there have been over 20 sessions offered in various inservice programs.

In answer to the question: Have you wished to attend but been unable to do so? Two staff said no while the other eight either simply said yes or else explained why they either had not wished to attend e.g. "I have had to choose priorities and I've just completed a Ph.D" or had not been able to attend e.g. "I feel badly about not coming subsequently, but time is increasingly committed".

A final question was asked for interest; Do you like teaching? Why? and the results were heartening. All staff said yes with varying degrees of emphasis ("I do enjoy it"; "Yes, despite everything"; "I love it"; "Yes, but the workload is daunting"). When asked why, all staff responded. From these ten responses it seemed possible to isolate 30 items or reasons. These reasons were arbitrarily categorized as: (a) liking students/liking people/liking interaction; (b) attitudes expressing helping/nurturing/giving; (c) self satisfaction/gratification; and (d) cognitive reasons. The single largest category was that of expressions of self satisfaction/gratification in which there were eleven responses e.g. "I like to disseminate information, specially when they (students) have difficulties"; "I get a kick out of describing complex phenomena"; "I get satisfaction from conveying knowledge"; "when they come up and say they are more interested in economics than accounting" (this from an economics lecturer); "It's nice to give a lecture - more demanding than a courtroom"; "because I am an egotist, and I was a good construction engineer".

There were seven reasons given that I classified as cognitive e.g. "it teaches me more than I would learn by doing the subject"; "I like the flexibility of the course structure"; "you don't have a boss breathing down your neck"; "I'm reading more in my area and enjoying it".

There was also seven reasons given which I classified as liking students/liking interaction with people e.g. "I enjoy contact with students and getting to know them"; "I enjoy interaction with the class"; "I like talking to students".

Finally, there were five responses in the smallest but perhaps most interesting group of reasons which I classified as expressions of helping/giving/nurturing e.g. "I like helping them (students); "...specially when they have difficulties"; "I like it when they ask questions, because I'm doing something positive (for them)"; "I like to see someone hand in a greatly improved essay and know that I had enthused him to put in more work on it"; "I need to feel I am of direct use, therefore I like teaching because I get immediate feedback".

It is interesting that three of these four categories, and thus 22 of the 30 response items could be said to lie in the affective domain i.e. that the reasons why people liked teaching seemed to lie in their feelings, values, attitudes, and self perceptions, rather than in more intellectual areas. I think the area deserves more investigation, but I find it particularly intriguing that such a group of people many of whom came from technological practice could produce so many responses indicating pleasure in people. This was particularly the case with the former chief research physicist of a large international electronics company and two engineers who had come from a practice/research background in private industry. Perhaps teaching is attractive to certain personality types irrespective of their background? (It might be interpolated here that the other person who could have been an interviewee was a brilliant scientist who left the institution within the year and who gave his Head of School great worry over his poor attitude to students and his lack of interest in teaching).

What issues which pertain to effective and useful functioning of a unit are raised by all of this? It would be inappropriate to generalize, but my experience at my institution is probably not too dissimilar from that of my colleagues elsewhere. First, and most important, the fact is that staff development activities are voluntarily engaged in; even when staff are new to teaching there is currently no requirement of attendance at any inservice session, even for a program like the one described here. In which case, what becomes of paramount importance in influencing new staff is the attitude of senior academics to the concept of educational development. Thus not all new staff attended part or all of the March 1978 program. Indeed, of all 16 participants, only three came to all three sessions; although 11 came to two of the three. Similarly, these staff while expressing interest, did not become regular participants in subsequent inservice sessions, because in their priorities of time use they perceived more important things to do with their time. By extension this set of priorities will apply to all the educational, developmental, or evaluative activities that a unit offers to staff and which require staff time (this even includes the reading of newsletters put out by the unit). Thus in an institution where there are no mandatory requirements of inservice participation by teaching staff, where senior academics and administrators themselves perceive other higher priorities, and where there is no institutional approval of the concept then inservice participation will tend to be small, fluctuating, inconsistent and unpredictable - because something else is nearly always bound to come up that is more important. Also, while much lip service has been paid to the idea that teaching ability ought to be a criterion of promotion, the ramifications of putting this into practice have effectively prevented it from occurring.



Thus the primary or fundamental issue encapsulated in the foregoing discussion is: if the improvement of teaching is a good thing how do you motivate staff to give time and effort to it? (Inservice sessions in this context are but one strategy of improvement). This is not the place to address this question, but it should certainly be addressed.

Given all of the above, the original question remains: are inservice programs worth offering, is it what I should be doing with my time? - and on the wider scale, is this a useful way in which a unit deploys its manpower in achieving its basic aim?

My personal judgement is that the Orientation to Teaching Program described and discussed here was worth putting on, because the long term follow up seemed to indicate at least that some ideas about teaching had been retained by participants and some had been consciously put into practice, and most participants thought it was a useful experience for them. My earlier worry about some negative reactions to my use of discussion methods and group involvement seemed unnecessary, as the long term follow-up appeared to show that many of these staff valued and used interaction in their classroom procedures. However, the program did not produce regular inservice participants, at least not in their first year of teaching; it did not stimulate participants to read in the area, nor did it produce enthusiastic users of AV aids. (Indeed, one of the blinding insights vouchsafed to any unit person who has tried to do this even at the most elementary level is that if the hardware is faulty, capriciously absent or difficult to get to the teaching station then staff will not get into the habit of using AV in the classroom).

Concerning inservice programs in general I would be less positive. As indicated earlier in this paper, I believe in principle that they are a good thing. If a program of three sessions is advertised to 300 staff and attendance at each averages 14 then this is almost certainly worth the effort and money put into its advertising, and the time and effort put into its preparation, conduct and follow up. But if a series of sessions is advertised to 600 full time and part time staff, the majority are cancelled for lack of support (a minimum enrolment of 3) and the remaining few sessions have an average attendance of 4 or 5, then I do wonder if the strategy is worth pursuing. But someone might go away with an idea. And next time there might be an enrolment of 20. In short, it is grass roots contact with the possibility of grass roots pay off. Education Units can spend their time in worse ways.

Postscript: All of the above may quickly become out of date if the Williams Report recommendation is acted on:

That the AVCC appoint an expert working party to formulate programs for staff in the theory and practice of teaching, curriculum development and examining, and then later consider how satisfactory participation in such programs might become a normal consideration of tenured appointment.<sup>5</sup>

The AVCC has already moved to set up such an expert working party. Is it possible that in the future such present preoccupations about staff motivation towards and involvement in the various activities offered by education units will be seen in retrospect as faintly antic and perhaps farcical? Perhaps so, and perhaps there are big changes in the status, responsibilities and activities of education units for the future, but until that future arrives the staff of units will continue to be beset by existential doubt and will continue to be preoccupied by the questions I have attempted to raise in this paper.

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1. See e.g. Australian Commission on Advanced Education Third Report 1973-1975 7.1-7.29
2. The various Annual Reports of units constitute the best source of information about units' activities.
3. Bennett, M. Models for Educational Units Mimeo RTTC 1979 p.5
4. See e.g. Commission on Advanced Education Fourth Report 1976-1978 2.18
5. Report of the Committee of Inquiry into Education and Training Education, Training and Employment R5.24 Vol. 3 p.13

# **The management of client relationships in instructional design**

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In a non-legislated, consultative environment the personality and management skills of the instructional designer, producer or evaluator are crucial to the successful completion of the project. While many designers over time acquire these skills, some basic pitfalls can be avoided by the new designer. This paper examines the special nature of the client-instructional designer or client-evaluator relationships in terms of the assumptions underlying the relationship and the different expectations of each member. The relationship is examined by reference to four common models and examples from Australian and overseas tertiary institutions.

The discussion then centres upon the successive phases in the development of the relationships; creating the relationship, identifying expectations, and goals, managing the on-going relationship and concluding the relationship. These phases parallel the stages of task development that are recognized in instructional design models. After considering a number of factors that are viewed by academic staff as crucial to the successful completion of an instructional redesign project, the paper concludes with a summary of factors contributing to effective relationships.

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Over the past decade in Australia, a growing body of professional educators have been employed by higher education institutions. These professionals have been asked to provide instructional design, staff development and curriculum evaluation services for their institutions. Their relationship to other academic staff has been co-operative, consultative and in some cases interventionist. As funding patterns change, increasingly these professionals are questioned about the efficacy of their work. In this changing environment new patterns of operation are emerging, for example:

We predict ... that the increased pressures on faculty from declining budgets, declining enrolments, unionization etc. will reduce the number of faculty attempting innovation on their own initiative so the survival and growth of an increasing number of instructional improvement agencies will become dependent on their ability to seek out and attract new faculty clients ... a new approach will be required ... the recent increase in interest in the discrete areas of faculty and organizational development portends this shift from a passive to a more active posture. (Abedor & Sachs, 1977, p.9)

In this new environment, instructional designers and evaluators need to develop special relationships with their clients. This relationship is the pivoting point around which success and failure are precariously balanced. Creating, nurturing, managing and maintaining, helpful and effective relationships between instructional designers and their clients requires time and effort. The underlying assumption of this paper is that commitment to effective relationships is an important force for instructional improvement in higher education.

To guide discussion in this broad area some basic questions need to be considered:

- 1) What is the business of instructional design?
- 2) Who are the clients?
- 3) What approaches may be taken?
- 4) How does the instructional designer - client relationship begin ?
- 5) How might the relationship be productive?
- 6) What roles are played by each member?
- 7) How can a relationship be reduced or terminated?

### Instructional Design in Higher Education

The earliest beginnings of the instructional design process might be traced to the instructor who went to the audio-visual aids section to have some photographs taken or some slides produced. Since that time major changes have helped to evolve a service staffed by academic staff with specific skills in educational psychology, curriculum design, communication media, and teaching methods. In the larger instructional improvement centres these roles are often divided amongst the staff who may act independently but often contribute as part of a team undertaking an instructional design project. The best articulated examples of the latter approach are seen in the Open University in Great Britain and the University of Mid-America in the United States. As more people join in the instructional design process, the personal relationships get progressively more complex and the expectations of each team member act to increase the number of possible outcomes.

Instructional design rests upon a number of assumptions, but primarily it relies on the belief that instructional materials or programs can be produced by a systematic process. This process begins by defining the broad goals of the project, the content to be covered, the entry behaviours of the students and works through successive waves of writing, refining, producing, evaluating until the product is available for implementation. (Branson, 1978) This process is not only undertaken by teaching staff independently of any central service agency but also it can involve an instructional designer for considerable periods of time. Increasingly this product and process view of life for the instructional designer is being seen as a valid part of staff development work for a central agency. These activities often attract different clients to those in the formal seminar/teaching program usually offered as 'the staff development program'.

The growth from audio-visual beginnings was natural as these communication technologies allowed the storage and retrieval of information. These functions allowed the teacher to employ additional teaching strategies and generally augmented the effect of one person. While there were positive advantages for such developments in times of growing student numbers, the

organization rarely adapted to the management and architectural changes that the technology demanded. Often the technology was "fitted-into" the traditional spaces available. Some overkill also occurred and the architectural fads of the 1960s have left lecture rooms with student response systems and cable television. Where time and money for the production of usable materials was not available, these systems have been underused. Thus the management of instructional design has jumped from a world of technology to a world of human interventions and small sell. The process focuses less upon production and hardware and more upon planning, integration, learning and the ongoing effect of instructional innovation. This change in orientation emphasizes different skills of the instructional designer. Traditional management roles such as planning, organizing directing and controlling, focused inward on the organization of services; the new skills involved in consulting, collaborating and evaluating look outward to the role of the central agency within the institution. (Price, 1976)

### The Client Relationship

The consulting relationship has been conceived in a number of forms. Kurpius and Brubaker (1976) discuss the relationship as a triad (consultant, client or client system and target). In this triad the consultant helps the client who is experiencing work-related problems. For example, an academic staff member may ask for assistance in designing materials to improve communication of ideas students have trouble in understanding; a departmental chairman may ask for assistance with curriculum or evaluation changes being considered by his department. In the first case the proposed targets are the students, and in the second the targets would be his academic colleagues in the department.

Consulting in most higher educational institutions is a voluntary relationship, and with the vagaries of human nature the relationship can be molded by the styles of client and consultant. The expectations of a particular client can dictate the types of possible relationships. Sachs (1977) examined the reasons behind academic staff contacting the Learning and Evaluation service at Michigan State University. From all those clients whose projects were financially supported, he identified three client types: reward seekers, information seekers and dissatisfied mavericks. The reward seeker undertook instructional innovation projects with promotion, personal development or recognition in mind. Reward seekers were dissatisfied with their current teaching and found positive student ratings after implementing the new program. The information seeker was typified by the staff who attend various workshops and seminars or who talk to other staff about an innovation prior to seeking financial support. Information seekers had read a number of books and articles about the innovative idea; they also scored higher on an innovativeness scale. Information seekers were the largest group of the academic staff seeking financial support for a new innovative project. The third style of client, the dissatisfied maverick was typified by a range of behaviours. They were dissatisfied with their courses and the lack of support for change within their departments sent them to the central agency to seek assistance. Like the reward seekers the dissatisfied mavericks found positive student ratings after they had tried course innovation. It is the last characteristic of dissatisfied mavericks that is the most interesting; they more than any other style, kept on innovating when the special funding ceased.

Kozma (1978) also, found innovative behaviour of supported academic staff to be greater than other faculty groups. In a three year period, he found that departmental chairmen actually decreased their innovative behaviour while those who applied for or obtained financial assistance increased their use of innovations.

Sachs (1977) later compared the innovators with non-innovators. He found their perception of their departments differed. The innovators felt that their departments were less supportive when they initiated discussions on innovative practices and used fewer instructional strategies i.e. alternative teaching models. Overall Sachs found that the forty four percent of the variance between innovative academics and non-innovative academics could be accounted for by two factors: the academic staff member's innovativeness and the department's norms on instructional strategies. In summing up he stressed:

Educational Development efforts may have greater influence when satisfaction and growth are stressed rather than when the emphasis is on relative advantages or rewards of a particular innovation.  
(Sachs, 1977, p.18)

Other workers have characterized their clients by trying to pinpoint their decision-making styles. The assumption being, if an instructional designer is aware of a client's decision-making style then more appropriate working relationships might be formed. Johnson (1978) proposed a model based upon two dimensions, data gathering and data analysis (Figure 1).

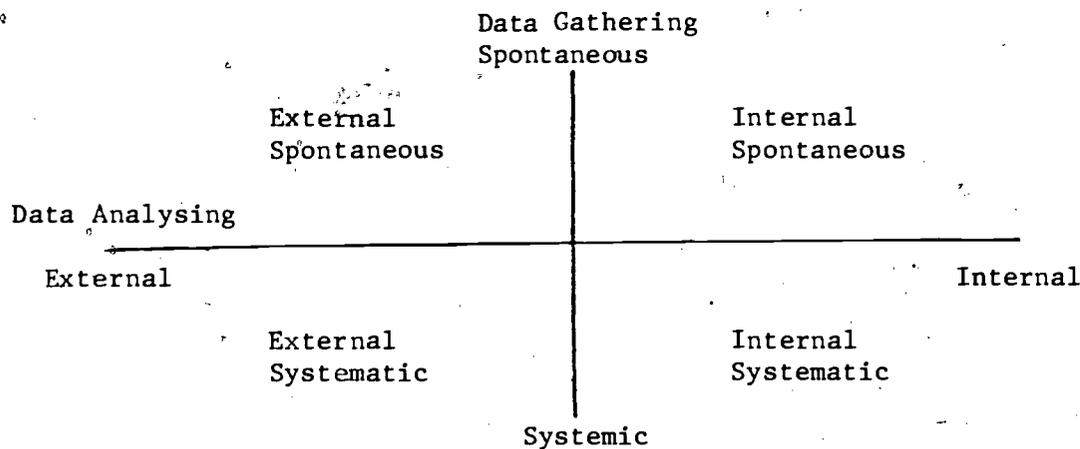


Figure 1: Decision Making Styles (Johnson, 1978)

Johnson characterizes the dimensions:

1. Spontaneous Style

- (a) holistic reaction to events
- (b) quick psychological commitment to an idea or alternative
- (c) flexible goal orientation

2. Systematic Style

- (a) collective reaction to events
- (b) cautious psychological commitment
- (c) methodical goal orientation

3. External Data Analysing Style

- (a) person thinks aloud
- (b) thinks and talks simultaneously
- (c) may not necessarily be high verbal

4. Internal Data Analysing

- (a) think before talking
- (b) may talk continually but every statement is considered.

SYSTEMATIC INTERNAL	SYSTEMATIC EXTERNAL	SPONTANEOUS EXTERNAL	SPONTANEOUS INTERNAL
D1: How did you like the article on the audio tutorial approach?	D1: How did you like the article on the audio tutorial approach?	D1: How did you like the article on the audio tutorial approach?	D1: How did you like the article on the audio tutorial approach?
G2: (Somewhat short and irritated) Which part of the article?			G2: That reminds me, I'm behind on a proposal and I may have some problems with you. (Pause)
D3: I'd be interested to know your reactions to all of it.			D3: Why is that?
C4: Well, you haven't been very specific about which part. Let me summarize. (Pause) Well let me think. (Long pause) OK, fundamentally my concern is which route or which method will do the best to improve student learning? I think too that I probably should do some more reading about each method and talk with other faculty who have used each one.	C4: Well, I'm not sure. I think we need to talk some more about the advantages and disadvantages of the audio tutorial approach. This would help me to decide which route would be the best to go. Fundamentally, my concern is which route or which method will do the best to improve student learning? I think too that I probably should do some more reading about each method and talk with other faculty who have used each one.	C4: It was fine (short and pushing it out of way) but I've got some problems with you. You had asked me to prepare a list of objectives for the next unit and I didn't get around to doing it. And I got behind on a proposal that is due today. I guess I got so caught up in the article that I didn't get around to much of anything else. I really didn't expect that the article would be so interesting.	C4: (Pause-thinks) You had asked me to prepare a list of objectives for the next unit and I didn't get around to doing it. I guess I got caught up in the article that I didn't get around to much of anything else. (Pause) I really didn't expect the article would be so interesting. I can't think of a better way to organize my class.
D5: Fine. I'll give you some articles that address the A-T approach in more detail and I'll arrange for you to talk with two other clients who have had experience with this approach. That reminds me I remember you telling me how fascinating you found Keller's PSI approach. Is there something in the two techniques that you find appealing?	D5: Fine, I'll give you some articles that address the advantages and disadvantages in more detail to arrange for you to talk with two other clients who have had experience with the A-T approach. That reminds me, I remember you telling me how fascinating you found Keller's PSI approach. Is there something in the two techniques that you find appealing?	D5: I remember you telling me how interesting you found Keller's PSI approach. Is there something in the two techniques that you find appealing?	D5: I also remember you telling me you were really excited about the PSI method and were ready to use it. Is there something in the two methods you find appealing?
C6: Yes, I've thought a great deal about that and I believe the structure inherent in both techniques aids in their effectiveness. Also, the positive affect reported by students is an important variable.	C6: Well, I haven't thought about that completely. What comes to mind first is that it makes students active learners rather than passive learners. On the other hand I believe the structure inherent in both techniques really aids in their effectiveness. I guess what I'm saying is that it's the structure that's most important to me, and the fact that learners are active or passive is less a concern. Further, the literature reports that students enjoy both approaches and I believe the affective domain is quite important.	C6: Well, I haven't thought about that completely. PSI does make students active learners not passive. That's why I'm ready to use PSI. Oh, yeah, that reminds me last week I had a really interesting question in class. A student asked about discipline in the classroom and how it relates to student/teacher rapport. We had quite a discussion on the issue and brought out some interesting points. Uh, what was I talking about a second ago? No-No-No-. You know what's really relevant to me is the structure inherent in both techniques that lead me to them... Yeah, now it's clear to me.	C6: (Pause, somewhat confused) Oh, I forgot about the PSI stuff. I guess I really haven't thought about it. Jim, (Long pause - nervous movement in chair) (Pause) - (Mumbling) - active... Well, passive. Oh, oh, yeah, last week I had a really interesting question in class. A student asked about the discipline in the classroom and how it relates to teacher/student rapport. We had quite a discussion on the issue and brought up some interesting points. (Pause) What was I talking about a second ago? (Pause, thinking)
			D7: You were just trying to decide what it was that you like about the audio- (cut off)
			C8: Of, yeah, I know. (Pause) You know what's really relevant to me is the structure inherent in both techniques that leads me to

Figure 2. Four scenarios with clients of different styles. (Coscarelli, Stonewater & Shrock, 1979, p.9)

An example of these processes in an educational setting has been provided by Coscarelli, Stonewater and Shrock (1979) and is shown in Figure 2. Other classification schemes abound, many appear related to the scheme proposed by Johnson (1978), which is clearly influenced by Jungian psychology. Some examples being the cognitive styles of managers McKenney and Keen (1974); Rotter's internal/external locus of control (1966) and Witkin's field dependence/field independence construct (1962). Ausburn and Ausburn (1978) have discussed the application of cognitive style in the design of learning materials but there are gaps in our knowledge for the effects of cognitive styles in the designers.

### Consulting Modes

The success of any consulting relationship is dependent on the assumptions of both client and consultant. These assumptions can focus upon the product to be developed or the process by which the product is developed. In this discussion, I will rely heavily upon the classification scheme proposed by Kurpius and Brubaker (1976) in their discussion of psychoeducational consultation. Davies (1973) in proposing a theory of advice, Wergin, Mason & Munson (1976) in faculty development and Schein (1969) in process consultation have described similar schemes.

The four modes of consultation Kurpius and Brubaker (1976) proposed: provision prescription, collaborating and mediating, are not mutually exclusive modes of operation; they depend upon the assumptions of client and consultant.

### Provision Mode

This mode is commonly used when the client is confronted with a problem for which specialized equipment or skills are required. These are provided by the consultant. This is more a dyadic, shopkeeper mode and not truly consultation. The academic staff member may contact the media services branch for colour slide photography or some redrawn graphics. This request is passed to the appropriate skilled staff for completion. This mode is heavily product-oriented, very often the academic has made up his or her mind about the best solution to the problem and has gone to purchase the help or materials. Often a client might contact an instructional designer in another mode and after discussion it is decided that the provision model is appropriate. For example, a request for some film sequences on the flow of smoke from chimneys is discovered to be a request for scientific material for analysis and not a request for a teaching program on smoke patterns. A cinematographer is provided for some days and the client retires happily to his projector to analyse the materials in slow motion.

This example highlights some of the assumptions embodied in the provision mode. First, it is assumed that the client has correctly identified the problem and objectively identified the appropriate solution. Second, the client must have correctly identified the consultant's capabilities to help solve the problem; the responsibility of the consultant is to provide the 'goods'. Third, there is no guarantee that the client will like or use the product generated. A major surprise for the spontaneous client is the cost of his great epic television program or the cost of providing each student with their own set of slides. In summary, if the problem is clearly diagnosed by the client the provision mode can be most efficient. If the problem is complex or the exact help needed is unclear then another mode should be adopted.

## Prescriptive Mode

In this mode, also referred to as the doctor-patient mode, the client recognizes a problem but asks the instructional designer to diagnose and suggest a remedy. In this mode the responsibility for project management and the effectiveness of prescriptions is clearly with the instructional designer. This role for the designer is fraught with traps for as Schein (1978) points out, the mode assumes:

1. That the client has correctly interpreted the symptoms and the sick "area."
2. That the patient can trust the diagnostic information that is provided by the consultant.
3. That the "sick" person or groups will reveal the correct information necessary to arrive at a diagnosis and cure i.e., will trust the doctor enough to "level" with him or her.
4. That the client has thought through the consequences, i.e., is willing to accept and implement whatever prescription is given.
5. That the patient/client will be able to remain healthy after the doctor/consultant leaves.  
(Schein, 1978, p.342)

Kurpius (1978) also asks if adjustments in the prescription are required will they be requested by the client. In any environment where the instructional designer or evaluator prescribes a strategy that the client tries and finds disastrous, rarely does the client return with the feedback for another attempt at the problem. One client approached me with a request to make ten videotape programs of a retiring staff member. Without questioning his assumptions or the background behind the request, I proceeded to agree with his request by costing out the project. After reaching the sum of \$3,500 he turned a little pale and left hurriedly for another appointment. We didn't make the programs, I had failed to find a creative practical alternative.

Many instructional designers by virtue of their specialist training operate in the prescriptive mode while many clients would, reasonably enough, prefer the provision mode. The shortcomings of these modes have suggested more process-oriented approaches, which rely on greater congruence in the expectations of client and instructional designer.

## Collaboration Mode

The essence of this mode is that the client is involved in the diagnosis of the problem and the generation of the solution. The instructional designer works with the client, who still owns and controls any changes in the project, to:

perceive, understand and act upon process events which occur in the client environment (Schein, 1969, p.9)

and for instructional design this process is

directed towards the achievement of some mutually agreed and valued instructional result in accord with the organization's mission. (Davies, 1973, p.7)

The collaboration mode is essentially dynamic with an interplay between client style, instructional designer style and a series of decisions reached by agreement. The decision can be made about products produced or the roles played by client and instructional designer. The effectiveness of this process is determined by the similarity of approach to the problem by the client and instructional designer. There is some evidence to suggest they should be as matched as possible (Mendelsohn, 1966). In order to offer a range of matching styles instructional designers from different disciplines should be employed by central agencies.

The importance of this mode is based on several well established assumptions:

1. People need positive reinforcement to remember that even though what they are doing isn't solving a given problem, that does not indicate they are inadequate people.
2. Sometimes professionals don't know what is wrong but have the capacity, with special help, to define and solve most work-related problems.
3. Most people become more effective in the future if they participate in defining and selecting an appropriate solution for solving a problem in the present.
4. Collaboration, while sometimes conflict producing, tends to build lasting trust and respect among professionals.
5. Collaboration also demonstrates equal power, authority, and status. Consultants are not better or more expert. They merely have different roles.
6. Latent problem solving capabilities are developed in clients.
7. Problems once solved are more likely to remain solved. (Kurpius, 1978, p.336)

In their experience model Wergin *et al* (1976) found that consultants working in this mode were more likely to accurately assess client needs as the relationship was open and trusting. Also they found greater give-and-take was possible in this environment, with the academic being more open to suggestions about improvements in teaching strategies or the presentation of subject matter.

#### Mediation Mode

This last is different from the preceding modes in that it is undertaken with a greater degree of risk. In mediation mode, the instructional designer is often working in a group environment with a number of academics from different departments who are co-operating to prepare materials for special courses. Each academic is independently preparing or teaching their section of the program. The instructional designer in this mode often acts as an interventionist entering into "an ongoing system of relationship to come between or among persons, groups or objects for the purpose of helping them" (Argyris, 1970, p.15).

Instructional designers sometime find themselves working in this mode on multidisciplinary projects. For example, to design a simulation package of the family court structure and operation might involve co-operation from social work and law departments and practising members of the family court; or on a larger scale the evaluation or curriculum redesign of a complete Medical course might involve the designer and evaluator in resolving conflicts between individual departments.

At the present very few agencies adopt the mediation mode on the grand scale. It requires a degree of institutional support for the work, and the respect and agreement of all the parties involved. The consultant may coordinate the work of other professionals in a situation where he has little or no authority. To increase the effectiveness of this approach Argyris (1970 p.21) has suggested that "the interventionist's primary tasks are to generate valid information, to help the client system make informed and responsible choices, and to develop internal commitment to these choices." He emphasizes that change is not one of the primary tasks. However, it may be a choice made by the client if that is deemed appropriate on the basis of the information gathered. As so many changes can occur from client/designer relationships, it is important to use criteria that will be useful in the long term. Many effects of instructional innovation influence the organization and it is only after the organization has accommodated these changes that the final effect can be evaluated.

### Phases in the Development of Relationships

In the previous sections, client style and consulting modes have been examined. The discussion now turns to the management of these variables and the client/instructional designer relationship over time. The phases in this development parallel a series of tasks that are commonly accepted as part of the instructional design process. The phases in the development of a relationship can be grouped under four headings: creating the relationship, identifying expectations and goals, managing the on-going relationship and concluding the relationship.

#### Creating the relationship

Most relationships begin with a client dropping by and requesting some advice about a problem. From these simple beginnings, the designer must determine why the approach has been made and, whatever the reason, the designer must be encouraging and attentive without committing the relationship to any one course of action. Most discussion should be deferred to a formal exploratory meeting, although it is often helpful to demonstrate some examples of instructional materials that might be produced.

The next important step in creating the relationship is to participate in an exploratory meeting with the client to search out what the project is likely to be about, whether the instructional designer or evaluator can be of assistance and what action needs to be taken. There are other considerations at this meeting that are more part of the instructional designer's private agenda: who will the designer be immediately working with, what is the political situation with the client system, what personal rewards are likely to come from this project. Davies (1973) suggests that discussion at the initial meeting should include a discussion of rewards for clients and designers. Often the final materials bear the names of the collaborators with the designer included as a co-author. The production of printed materials is academically preferable but the weight placed upon them is largely determined by academic promotion policy.

At this exploratory stage, it is wise to include not only the client, but one or two members of the client's system especially departmental chairmen and influential senior staff. However, these members of the system should be generally committed to the project and not skeptical about the project's outcomes. It is at this stage the consultation mode can be demonstrated, if the clients are negative the designer can, if careless, slip into his shopkeeper or provision mode. The essence of this meeting is to confirm the collaboration. The final outcome of a successful exploratory meeting should be a resource commitment of client time and finances for the project.

Diamond (1975) suggests some basic pitfalls to avoid:-

1. Projects where the academic expertise is lacking.
2. Departments or schools that are in the process of changing administrators.
3. Projects that involve only one faculty member.
4. Projects where what is expected is unrealistic in terms of time and existing resources.
5. Projects which do not have a strong support base in the department in which they are undertaken.

(Diamond et al. 1975, p.35-36)

#### Identifying expectations and goals

Once commitment to the project has been obtained, it becomes necessary to define goals and sub-goals. This process usually involves the initial planning of structure and consultation with the client system for agreement to the line and style adopted. It is a negotiating phase in which objectives are stated (if that approach is adopted), or content sequences and structure are outlined.

A formal contract is finally reached with descriptions of what is to be done, how much time each member will devote to the project, the broad method of approach and what criteria will be used to conclude the relationship. At this point the client and designer must establish an open relationship with each accepting duties and responsibilities. If it happens that the relationship has not developed, it might be retarding the progress of the project. If the agency has a number of instructional designers on staff, a change of designer may help. Some clients have been grateful for suggested staff changes especially when their cognitive styles have been at loggerheads.

#### Maintaining the on-going relationship

Once the relationship has been established a cycle of data-gathering, analysis, decision-making and action begins. During the analysis, it is easy to feel that something is happening and the relationship between designer and client becomes close and understanding. As the analysis proceeds, additional problems may be uncovered, these are integrated into the project. Eventually decisions must be made among alternatives. The client makes these decisions, although the process is keenly supported by the designer. Often time constraints and other activities prevent the making of deadlines. While realizing the human problems, it is possible to provide time saving alternatives that keep the project alive without forcing the client to increase the time spent.

One approach many designers have used successfully is the employment of a graduate student to write part of the materials. This is corrected or modified by the client and then trialled with a group of students. At Melbourne University, a computer simulation as part of a policy unit was produced in this fashion. Another successful approach has been to obtain commitment by the department to allow time for the academic staff member to work in the central agency for a short period. Faster progress on a complex project was achieved in a trial of this approach at Melbourne, although competing demands made the three month period effectively two months.

Other approaches that have maintained interest are the use of advanced technology. For example, our technical staff developed a time coding device for videotape which enables a copy of the material shot to be provided for the client. There are numbers on the screen indicating time elapsed in hours, minutes, seconds and frames, the client simply has to note down the numbers at the beginning and end of each sequence and a rough version of the program can be produced. After entering these numbers in a micro-computer, the material is edited automatically. The complexity and time required to produce a final version have been reduced so markedly that clients can move more quickly to the next section of their project.

Havelock (1973, pp55-56) has provided a series of dimensions which summarize good relationships in this phase. These relationships depend upon:

1. Reciprocity (sharing information, diagnosis; etc.)
2. Openness (willingness to receive news input from each other)
3. Realistic expectations (realizing that the instructional designer is not a miracle worker or that the innovation will solve all problems)
4. Expectation of reward (that the result will be worthwhile)
5. Structure (some definition of roles, working procedures and expected outcomes)
6. Equal power (otherwise the client may simply comply)
7. Minimum threat (changes may be benefits)
8. Confrontation of differences (talking out disagreements)

#### Concluding the relationship

When the instructional materials start rolling off the presses, the relationship has moved into the last phase. This may not be as sad as it sounds as there is always potential for re-involvement on request, and the fruits of the relationship: joint publications or conference papers are presented, other spin-off projects are begun and new projects with other staff encouraged by the project just completed. The project should be formally evaluated. The client should be encouraged to undertake the data gathering as most of the evaluation criteria would have been determined at the planning stages. The decision to reduce involvement, should be a joint one and should be implemented gradually. If the project fails and the client is unwilling to invest time, it is best to terminate the relationship quickly and cut losses. The experience will hopefully be a learning situation.

#### Facilitating Instructional Design Projects

Not all projects have recognizable stages of development or the need for professional assistance. Individual academic staff attempt instructional innovation without instructional improvement agency assistance. Lawrason and Hedberg (1978) found that academic staff working on their own projects were limited by motivation and organizational procedures. The major complaints were:

1. Lack of faculty interest or skills
2. Lack of incentives and administrative support
3. Insufficient funds
4. Insufficient time
5. Lack of support staff or resources
6. Low ability of students
7. Unclear objectives

Instructional designers who can reduce these problems for the individual academic will help the instructional innovation effort on their campus. More positively, instructional designers should (a) be aware of the campus political structure and know the key academics and administrators who can affect change in instruction; (b) give priorities to instructional design projects initiated by these key change agents; and accept the secondary role as "support" staff, collaborating in the instructional design process as required (Lawrason and Hedberg, 1978).

Organizational development can create levels of awareness that provide a climate for instructional innovation (Abedor and Sachs, 1977; Porter, 1976). Policy makers must create an environment that supports both the personal and organizational needs of an innovation. This support Porter (1976) argues should be built into the system before promoting plans for instructional innovation.

When faced with great institutional problems, the focus on the department as a unit of change appears to be a reasonable strategy. The readiness of the academic department for change might be gauged by:

1. The department values teaching for promotion, pay or rewards.
  2. The department provides some (but not enough) resources for improving teaching.
  3. Academic staff are receptive to instructional innovations.
  4. Some curriculum changes are fermenting.
  5. The departmental chairman is perceived as influential in and supportive of teaching improvements.
  6. The individual innovator, in such a department consults with his colleagues as a routine matter.
- (After Sachs, 1977, pp14-15).

### Conclusion

Throughout this paper, I have argued for consideration of client styles, consulting modes and developing relationships in the management of a process designed to provide better instructional alternatives. While the individual designer can help clients by demonstrating a range of alternatives to the problems they face, the designer must work in an environment not structured to accept change. Some pitfalls may be avoided by good decisions on project viability and institutional acceptance, but the next stage for the instructional designer's development is perhaps more proactive. This is liable to involve incursions into the area of organizational development and greater use will be made of mediating consulting modes.

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# Practical curriculum development: Scientific enquiry in University classes

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There appears to be agreement that teaching university science students an appreciation of the processes of scientific enquiry is important. It is also often suggested that laboratory classes should play a vital role in such teaching.

This paper presents studies on scientific enquiry occurring in university laboratory classes:—

1. Results of content analysis of laboratory manuals according to the level and types of scientific enquiry behaviours demanded.
2. Results of classroom observation studies of student and staff behaviour in laboratories as relevant to scientific enquiry.
3. Description of the relationship between levels of scientific enquiry of laboratory manuals and classroom behaviour.

Implications for the design of laboratory exercises are discussed.

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## INTRODUCTION

Over the last fifteen years, there have been constant expressions of disappointment with the results of both research and development work in the field of curriculum studies. The lack of vitality has been diagnosed as due to over-emphasis on theoretic and technical approaches (Pinar, 1978; Walker, 1976).

Current opinion suggests that curriculum studies will be re-vitalized when more emphasis is placed on practical and eclectic approaches, a viewpoint first proposed by Schwab (1969). This means that it is a duty of science teachers to develop competence in the processes of decision and choice in curriculum practice (Schwab, 1974). Since there has been little reference to Schwab's writings in the literature on higher education some amplification will be presented of the "practical" domain. This paper presents results of a study conducted within the framework of the "practical" domain as delineated by Schwab (1969, 1971, 1973, 1974) i.e. the "practical" in practice.

Overall, the study focussed on the work of groups responsible for the planning and revision of the laboratory work component of science courses at university level. Within such groups and in the published literature there appears to be agreement that it is important to teach university science students an appreciation of the processes of scientific enquiry (or scientific method, to use an older term). It is also suggested that laboratory classes should play a vital role in such teaching (Ausubel, 1968; Gagné, 1974; Lawson and Renner, 1975). Therefore part of the study was concerned with the nature of scientific enquiry as encountered in university laboratory classes and involved:

- (1) determination of the level of scientific enquiry behaviours demanded from students in the laboratory manuals provided
- (2) investigation of the effects of different levels of scientific enquiry in laboratory manuals on the behaviour of staff and students using the manuals in science laboratory classes.

#### ESSENTIAL FEATURES OF "PRACTICAL" CURRICULUM DEVELOPMENT

The "practical" is "the discipline concerned with choice and action, in contrast with the theoretic, which is concerned with knowledge. Its methods lead to defensible decisions, where the methods of the theoretic lead to warranted conclusions" (Schwab, 1969). In the domain of the "practical" it is expected that skilled curriculum workers will arrive at better choices, being able to optimize sets of conflicting theories and functions, contriving a balance, not seeking some unique maximum (Reid, 1975; Schwab, 1973). The nature of the "practical" and its translation into curriculum has been further elaborated by other writers (Westbury, 1972; Wick, 1972) who have given accounts of the eclectic procedures by which diverse theories can be used in and for educational practice while maintaining both the integrity of the theories and the practical contexts of education. A paper on the "practical" with specific reference to the Australian setting was published recently by Gough (1978).

#### The use of deliberation as methodology

The development of an effective new curriculum or the successful modification of an existing curriculum does not follow a few clearly defined simple steps as many curriculum models seem to imply. Rather, many complex operations are involved, including definition and re-definition of the problems encountered (Hegarty, 1977), negotiations, debate, discussions for and against proposed solutions, weighing of alternatives and careful consideration of the anticipated consequences of decisions (Gough, 1978). All of these operations are well described by the term "deliberation" as used by Schwab (1973).

#### The selection of members of curriculum review groups

Schwab (1973) argued that successful curriculum deliberation demands involvement of persons representing five bodies of knowledge and experience: the subject matter, the learners, the milieux (environments), the teachers and the process of curriculum making. Curriculum review groups constituted according to these criteria have been reported for biology at school level (Fox, 1972) and microbiology at university level (Hegarty, 1977). The following account is extracted from the latter paper.

For a microbiology curriculum group, at least one person would be chosen with a thorough working knowledge of the microbiology *subject matter* taught in the course and with a research interest in some aspect of that field. To represent *learners*, there is a good case for including a number of students as well as staff members with many years of experience of different student groups. When selecting group members familiar with the *milieux* (environments) in which microbiology students find themselves, consideration is given to locating group members with an understanding of the relationship between laboratory classes, tutorials and lectures in the course, the relationship amongst the various different courses in microbiology which are available, the relationship to other courses a student may be taking (for example, biochemistry) and the place of microbiology in a student's overall programme of university study. The group would contain people at ease in some or all of the various university milieux

mentioned. People would be sought who have perspective on the place of microbiology in society, and on the future careers and employment prospects of students who have studied the curriculum under review.

An effort would be made to include a number of *teachers* acting as tutor/demonstrators in laboratory classes as well as the staff member(s) taking overall responsibility for the course. In this way, problems may be identified concerning the degree of fit between the demands of the course and teachers' experience in microbiology and related disciplines, their attitudes and approaches to teaching. Finally, a group would include someone with experience in the actual process of developing functional *curricula*. Such a person is usually to be found amongst staff members with experience in designing both the overall structure of courses and the details of teaching materials but, in addition, it may be an advantage to recruit educationists with special expertise in the field of curriculum.

#### LEVEL OF SCIENTIFIC ENQUIRY IN LABORATORY MANUALS

Systematic content analysis was used to determine the level of scientific enquiry in microbiology laboratory manuals. This is a technique for evaluating the potential of written materials to allow students to achieve certain goals. Thus, if obtaining an appreciation of the processes of scientific enquiry is an important goal for students, then an appropriate scheme for content analysis would involve checking for evidence that laboratory manuals do actually require students to engage in scientific enquiry, i.e. the contents of the manual serves as a basis for inference (Holsti, 1969).

The scheme used for content analysis to show level of scientific enquiry was a modification of that published by Herron (1971). Table 1 shows the scheme, together with analysis of laboratory manuals used in microbiology for final year students at the University of New South Wales. The main feature of the scheme is the increasing degrees of openness for students to choose the aims and methods of their laboratory work. At the lowest level one might find exercises which were simply practice in techniques or confirmatory exercises where the answer was already provided for students. At the highest level one finds laboratory work where students have freedom to determine the nature of the problem on which they work as well as designing materials and methods they use.

It should be pointed out that the notion of levels of scientific enquiry is value laden, having the potential for what might be called ideological commitment - where one assumes that higher levels are better than lower levels. Nonetheless, it would seem reasonable that university students in the final year of their major subject should experience scientific enquiry at the higher levels. One might expect to support this view by using arguments grounded in the philosophy of science. But encouraging empirical support comes from research studies carried out at university level which showed that, as the degree of guidance in laboratory work decreased (and student design procedures increased), so students' retention of what they had learned increased (Holcomb, 1971).

By comparison with the results of Herron's (1971) analysis of BSCS biology, the most important finding was that 25% of 63 set exercises, together with six extended projects, were at level 2A or above, a finding apparently congruent with the major role attributed to processes of scientific enquiry by many writers (Herron reported no exercises at level 2 and the majority, 75%, at level 0).

TABLE 1.

LEVEL OF SCIENTIFIC ENQUIRY IN MICROBIOLOGY LABORATORY MANUALS

Table shows definition of levels and results of content analysis of 63 laboratory exercises \*

LEVEL	AIM	MATERIALS	METHODS	ANSWER	PERCENTAGE OF EXERCISES
0	Given	Given	Given	Given	33.3
1	Given	Given	Given	Open	38.1
2A	Given	Given, whole or part	Open or given in part	Open	25.4
2B	Given	Open	Open	Open	0
3	Open	Open	Open	Open	0
Unknown	Evidence lacking				3.2

\* excludes 6 extended projects (levels 2A and 2B)

LABORATORY CLASSES

Most of the research involving direct observation of behaviour in science classrooms (reviewed by Tisher, 1972 and Power, 1977) was influenced by a desire to develop a coherent theory of teaching. Disappointingly little success was obtained but Power's review (1977) points up ways in which research in the realm of the theoretic may become more productive in the future. Moves away from the realm of the theoretic to the realm of the practical are beginning. Arguments for the use of interaction analysis in curriculum development and curriculum evaluation have been presented recently by Eggleston and Galton (1976).

From the review by Power (1977) of factors influencing the nature of science classroom interactions, it appears that no studies have been made of laboratory behaviours before and after the introduction of enquiry oriented curriculum materials nor of the effect of curriculum materials at different levels of enquiry on behaviour within a single course at either school or university level. In the present study the behaviour of students and staff was observed whilst they were using microbiology laboratory manuals with exercises rated at low or high levels of scientific enquiry (i.e. rated as level 0 vs. level 2 or above in content analysis). Full details of the observation scheme and results have been published (Hegarty, 1978).

The expectation was that as the level of enquiry of manuals increased from low to high, so certain differences in the behaviour of students and staff would be observed in the laboratory classroom. In practice it was found that as the level of enquiry increased, there was a marked increase in the proportion of tutors' time spent on the development of subject matter, especially at low cognitive levels. To match, there was a marked increase in students' time spent listening to such talk. There was a slight trend towards a similar increase in the proportion of students' time spent on talk at low cognitive levels. More importantly, there was a significant increase in time spent by students talking on scientific processes, most of which was accounted for by talk with fellow students, not tutors. Results for tutors were quite different, however. Time spent on scientific processes did increase at level 2A, but during extended exercises and projects at level 2B, the talk on scientific processes dropped below the score at level 0.

One of the most noticeable effects on tutors' behaviour was an increase in laboratory management responsibilities - not management within the laboratory, which remained constant - but in management activities not at any scheduled location, i.e. the staff were away from the students altogether, missing from the laboratory, moving around the building to preparation areas and private research laboratories collecting and organizing materials for students' projects. During level 2B projects, the total proportion of tutors' time spent on management activities was 20%. Similarly, there was a marked increase in time spent by students on laboratory organization, about 20% at level 2B but not at lower levels. It would appear that as students were required to spend more time planning and organizing laboratory work at higher levels of scientific enquiry, less time was taken for using laboratory techniques, making observations and taking measurements.

DISCUSSION

This paper has presented results of a study directed towards improving the repertoire of information available to curriculum deliberation groups. In a sense then its value should be judged in terms of its relevance to the curriculum groups responsible for the microbiology courses investigated. Before one

could be confident of generalizing further, what is needed is a large body of reports on the information used by curriculum groups, and on the judgements resulting from the deliberations of the groups. Only then will we have the grounds for testing our views on what constitutes better and worse in the art of deliberation on science curricula (Schwab, 1975).

The study on scientific enquiry in microbiology laboratory classwork was conducted within the framework of "the practical" (Schwab, 1969, 1973, 1975). The deliberations were conducted in accord with Schwab's prescriptions. During early stages of the deliberations a technique for structuring group meetings was used (Hegarty, 1977) in order to identify as clearly as possible all problems associated with the courses undertaken by final year students majoring in microbiology. A more obviously deliberative mode of operation was used during later stages as group members progressively refined their understanding of the problems and moved towards debate and negotiations on possible solutions. The data presented in this paper were used by members of the deliberation groups during both early and late stages of the process.

Membership of the deliberation groups was also determined according to Schwab's prescriptions: care was taken to include expert representatives of the five bodies of experience (subject matters, learners, milieux or environments, teachers, curriculum-making). Particular effort was made to recruit present and past students, to locate staff familiar with the university milieu outside microbiology and to invite a number of "outside" scientists to judge the course-work from the viewpoint of society overall and from the viewpoint of potential employers of graduates from the microbiology course which was being reviewed. All participants contributed enthusiastically and the broad perspective was reflected in the work products of the group.

The deliberation groups found the results of the content analysis to be very useful. The rationale for its use was that when enquiry oriented curriculum materials have been designed, a first step is to check that the materials reflect the designers' aims. Thus, content analysis of BSCS manuals was judged by Herron (1971) to indicate that scientific enquiry was preached by the curriculum designers a deal more often than it was practised. The curriculum group at UNSW felt that by comparison, the proportion of upper level exercises was encouraging but that action should be taken to reduce the figure of 30% of set exercises at level 0 still lower. Level 0 exercises presented a problem.. Practice in techniques can easily be justified, though not necessarily in a final year course (Newman, 1978, called such practice "pre-science", initiation into real science), but the use of "recipes" where the answer is already well known to staff and students, is difficult or impossible to justify. In terms of the analysis by Newman (1978), recipes are "copying" and are not science at all. On this basis, eight level 0 exercises were selected for revision and the results of a second content analysis scheme (not presented here) were available for guidance as to the types of enquiry behaviours which should be emphasised when replacement exercises were being developed. After revision, the eight exercises were expanded to nine, one at level 0, seven at level 1 and one at level 2. The lack of level 3 exercises was also regarded as cause for concern and two new exercises were designed at level 3 (i.e. freedom for students to determine the problem to be investigated). However these were restricted to library assignments.

Examining the findings of the classroom observation study, the deliberation groups found some of the results worthy of lengthy debate, whilst others were disregarded. An aim of introducing enquiry-oriented curricula is to encourage an increase in behaviours congruent with scientific enquiry (Eggleston and Galton, 1976) and it is often assumed desirable that such an increase should be manifested in the enquiry behaviour of both students and staff (Balzer, 1969; Eggleston and Galton, 1976). Therefore a question for debate by

the curriculum group was "What are the implications of the finding that with increase in level of scientific enquiry, the increase in time spent by students talking on scientific processes was not matched by an increase in time spent by tutors?" In addition, the increase in time spent by tutors on laboratory management activities outside the classroom and away from students during exercises at a high level of scientific enquiry was an unforeseen result of curriculum change and was felt to be possibly undesirable.

Evidence from interviews suggested that university tutors often sought a role for themselves as resource persons (especially so during classes at higher levels of enquiry) rather than acting as a challenger or promoter of enquiry behaviours. The curriculum group suggested that tutors be notified of the intended level of scientific enquiry of each exercise and of the types of questioning or challenging which might best help students meet the goals of the exercises. Opportunities were canvassed for staff development programmes to promote an understanding of the nature of scientific enquiry and the acquisition of relevant teaching skills.

Enquiry related behaviours of both students and staff were more noticeable at level 2A than at level 2B, and at level 2B the most prominent behaviours involved organization and management. These findings represent a challenge to the practice of offering project work in university science. In view of the expense of time and money on projects, the curriculum group debated the replacement of some projects with structured exercises at level 2A (which apparently present more opportunities for enquiry within a compressed time span).

The notion of investigating a problem and designing suitable laboratory experiments is central to the process of scientific enquiry. Yet high student enrolments often present financial and organizational obstacles to the provision of suitable laboratory work. Figure 1 shows an example of a structured exercise (level 2A) on antibiotic sensitivity testing. It involves planning and design by students in a setting where staff retain control over technical organization and expense by restricting the materials and glassware provided. Although the example involves microbiology subject matter, the idea should be applicable to many other science disciplines.

The exercise was designed for students already familiar with methods of sensitivity testing and the effects of concentrations of bacteria inoculated. It may appear simple but it provides students with experience in a number of the different components of scientific enquiry. These include:

Predicting as many variables as possible.

Formulating hypotheses concerning effects of variables.

Designing experiments to test hypotheses.

Ensuring that experiments are feasible within the limitations imposed (e.g. agar depth, antibiotic concentration, pre-incubation time, incubation temperature and growth conditions).

The question posed at the end raises the whole issue of standardization and control of procedures in medical diagnostic laboratories.

In conclusion it should be stressed that curriculum deliberation is a long and complex process and it is difficult to do justice to the process in a short paper. It is hoped that sufficient illustration has been provided for use by other workers and that, with the discussion of the value of content analysis and classroom observation data to a curriculum group, has come a sense of the priorities which must be weighed, the compromises and tradeoffs which are

SCIENTIFIC ENQUIRY IN A RESTRICTED LABORATORY INVESTIGATION

(LEVEL 2A) : EXAMPLE OF A MICROBIOLOGY EXERCISE

ANTIBIOTIC SENSITIVITY TESTING : FACTORS AFFECTING ZONE DIAMETERS

Material:

- (per bench) Culture on nutrient agar of:
- Standard Staphylococcus aureus sensitive to penicillin
  - Penicillin discs (2µg)
  - Sterile forceps
  - Sterile swabs
  - Sterile petri dishes
- (per class) Nutrient broth
- Melted deeps of nutrient agar and sensitivity agar
- (Other materials may be available on request)

Procedure:

- (a) Students at each bench should make a list of all the factors which could influence the size of the zone of inhibition around an antibiotic disc.
- (b) Design experiments to test each of these variables.
- (c) Discuss your plans with your tutor and proceed with as many as practicable. Submit your results to your tutor together with any cultures used as evidence.

Questions:

1. For which factors did you find evidence of effect on zone size?
2. What is the practical significance of your results for procedures in a diagnostic medical microbiology laboratory?

involved in planning and replanning curricula. Those with responsibilities for science laboratory teaching will be able to assess the value of the content analysis and observation techniques to their own disciplines and to assess the possibility of using more structured enquiry exercises (level 2A) in their teaching.

A large body of such reports is needed on the information used by curriculum groups and on the judgements resulting from their deliberations. Only in this way can our collective skills be strengthened in the use of the arts of the practical.

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# Visual Analogies in higher education

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There are many different methods for classifying pictures which are used in communication. They can be classified according to such features as: medium of transmission; use of colour; number of main figures or elements; amount of internal detail in figures or elements; and nature of background.

An alternative method of classification is based on the meaning perceived by the learner. Some pictures are perceived as realistic or iconic symbols for the things they represent. This category includes many of the photographs, film, television and drawings used in education. A second category of pictures can be called abstract or logical. This includes graphs, histograms, flow charts and Venn diagrams, which do not look like the things they represent, but do show relationships visually. A third category includes those pictures which are perceived to be analogical — the visual analogies and visual metaphors which explain an object, idea or event by depicting something else.

This paper includes an analysis of current use of visual analogies in a variety of subject areas and levels. It then describes ways in which visual strategies, involving analogy, can be implemented in higher education.

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A walk through the classrooms of our institutions of learning — from kindergarten, through Years 1 to 12 in our primary and secondary schools, and on to the lectures, seminars and tutorials in our universities and colleges — would reveal some interesting similarities and differences. In many cases the 'expert' teacher, tutor or lecturer would be seen 'leading' a group of willing or unwilling students through some chosen area of knowledge. Frequently, the students would be formally seated at rows of desks or tables. Two-way communication would often be encouraged. However, two fairly obvious differences between the levels of education would probably strike the observer as he/she walked through the classrooms. There tends to be an increasing emphasis on verbal communication (both oral and written) as we progress up through 16 or 17 years of formal education; and a decreasing emphasis on visual means of communication (photographs, wall charts, black-board diagrams, drawings, paintings, models, mobiles, etc.).

Nobody would doubt the efficiency of words to communicate and summarize concepts, abstract ideas and generalizations. But one of the assumptions upon which the Visual Education Curriculum Project, at Salisbury College of Advanced Education, is built (Hutton, 1979) is the conviction that visual and verbal communication can be complementary. We believe that pictures can be as important for concept development in the hallowed halls of higher learning as they are in grades 1 and 2 of the primary school. Consequently, we are developing books and videotapes which have been designed for teachers and which stress the potential of the *visual* in learning, across the curriculum. Areas covered by these materials include drawing, photography, film, television, mental imagery and visual analogies. Although much of the curriculum development work has been done with teachers in primary and secondary schools, many of the principles and guidelines apply equally well in higher education. This paper discusses some of the types of pictures that can be used in communication.

## CLASSIFYING PICTURES

There are many different methods for classifying pictures which are used in communication. They can be classified according to such features as: medium of transmission; use of colour; number of main figures or elements; amount of internal detail in figures or elements; and nature of background.

An alternative method of classification is based on the meaning perceived by the learner (Knowlton, 1966). Some pictures are perceived as realistic or *iconic* symbols for the things they represent. This category includes many of the photographs, film, television and drawings used in education. A second category of pictures can be called abstract or *logical*. This includes graphs, histograms, flow charts and Venn diagrams, which do not look like the things they represent, but do show relationships visually. A third category includes those pictures which are perceived to be *analogical* — the visual analogies and visual metaphors which explain an object, idea or event by depicting something else. Political cartoonists and some science reference books have long exploited this method of visual communication (e.g. King, 1976; Life Science Library; Petty, 1978; Pickering, 1978). With this method of picture classification, it is, of course, possible to have three different kinds of picture of the same real object.

Consider, for example, a living, growing, respiring yeast cell which is fermenting sugar to produce alcohol and carbon dioxide (See figure 1).

The first picture is a life-like drawing of a yeast cell, so it is classified as *iconic*.

A photograph of a yeast cell would be classified similarly.

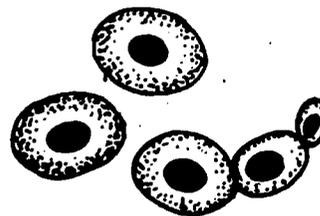


Fig. 1. *Iconic* (or realistic) picture — which looks like the thing it represents.

The second picture (figure 2) consists simply of words, squares and arrows — abstract symbols looking nothing like parts of the functioning yeast cell.

But it probably does convey meaning to you about yeast. It is a *logical* picture.

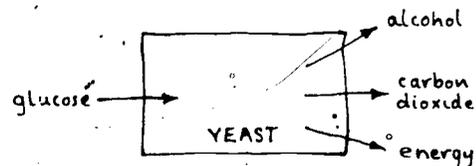


Fig. 2. *Logical* picture — which does not look like any real thing — it is abstract.

The third picture (figure 3) represents a yeast cell, but it looks like a factory. It is a visual analogy — in Knowlton's terminology, an *analogical* picture.

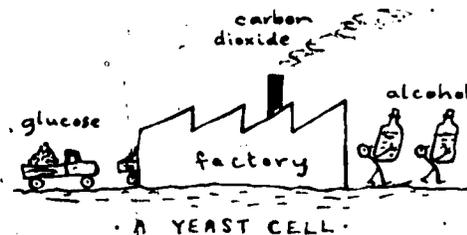


Fig. 3. *Analogical* picture — which looks like some other real thing.

As another example of Knowlton's system for classifying pictures, consider a radio. We could represent the radio by a photograph of the complex array of wires, transistors, resistors, etc., that are contained within it (an iconic picture). Or we could represent it by a conventional circuit diagram (logical

picture). Alternatively, we could draw a cartoon with little men running around with packages of energy, translating and passing on messages, turning switches on and off, etc., to represent the electrical components of the radio. It is still a picture of a radio, but physically resembles a group of people rather than a radio, so it is a visual analogy.

### WHICH KIND OF PICTURE IS BEST?

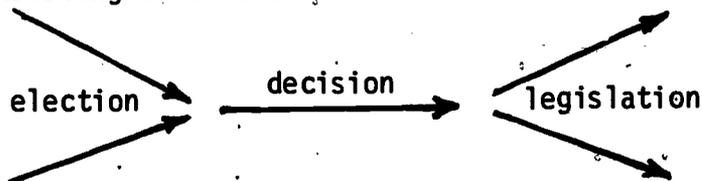
Which class of picture is the best kind to use in teaching — iconic, analogical or logical? The question cannot be considered apart from the purpose of the message, and the background and interests of the students.

However, in some cases, logical and analogical pictures have a distinct advantage over iconic pictures. How do you draw a picture of an abstract idea? You certainly can't draw something that looks physically like an abstract idea, so iconic pictures are out. But logical and analogical pictures often provide interesting possibilities for visually illustrating the abstract.

For example, consider the abstract concept "democracy". Is it possible to illustrate this concept visually with a single picture? If we restrict ourselves to iconic (realistic) pictures we may decide to show many aspects of the complex idea "democracy" — e.g. the election process, elected representatives, houses of parliament, debates, decisions being made, legislation being implemented. Even then, we may have illustrated just a small part of the concept "democracy".

However, it may be possible to illustrate the essence of the democratic process, as we see it, in a single analogical picture. Perhaps we could use a picture of a football match, or a fowl yard, or Larry Pickering's jungle.

Also, it might be possible to represent the democratic process with a single logical picture consisting of arrows and words.



For a certain teaching purpose, a single logical or analogical picture may be a more useful device than a whole series of iconic pictures. Iconic pictures can only show instances of an abstract concept, whereas it is sometimes possible to convey the total idea with a visual analogy or block diagram.

### MAKING VISUAL ANALOGIES

There are many ways in which visual analogies can be planned. Some teachers and lecturers find it easy to make them up on the spot — intuitively. Intuition has always played an important part in effective teaching. Some teachers, with whom the Visual Education Curriculum Project team has been working, have reported that visual analogies occur to them spontaneously while planning learning activities or while actually teaching. Such analogies can be of great value in assisting the communication of key concepts.

However, it is often useful to have a procedure on hand which can suggest visual analogies when inspiration fails. Several possible strategies are outlined in the Visual Education Curriculum Project materials. One of them will be described

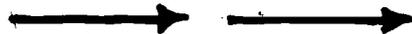
in some detail here. It is simply intended as a guide which describes strategies which have worked for some teachers when communicating concepts and ideas.

### CONCEPTS AND IDEAS AS PROCESSES

In the case of some concepts and ideas, it may be possible to start with a logical picture and convert it to a visual analogy. This is particularly useful for ideas which can be seen as processes or relationships. Can all ideas be viewed as processes or relationships? Probably not — but many of them can — and these are capable of being translated into logical and analogical pictures.

It would seem that there are just four basic types of logical pictures which can represent processes:

- (1) LINEAR — where one component of the idea or concept leads on to the next component.



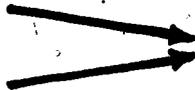
Periodic banking of money is a real world example which could be translated into this kind of logical picture. The succession of monarchs in a kingdom is another very different example which fits the same linear pattern.

- (2) DIVERGENT — where a unified whole disintegrates into separate components.



Real World abstract examples are civil war, divorce, generosity, expansion and analysis.

- (3) CONVERGENT — where separate components come together to form a unity.



Real World abstract examples are collaboration, partnership, love, accumulation and synthesis.

- (4) CYCLIC — where one component affects another component which in turn affects the original component.



Insurance, investment, political donations and manipulation may be represented by a cyclic logical picture.

Many ideas are, of course, combinations of these four basic processes. Periodic banking of money and its subsequent investment is a linear process followed by a cyclic process.



Also, the previously mentioned concept of "democracy" may include the electoral process which is convergent, parliamentary decision-making which is basically linear, and implementing legislation which is divergent.



Obviously, there are hundreds of other combinations of the four basic processes. One of the most difficult things about translating an abstract idea into a logical picture is deciding which processes are important enough to warrant visual representation.

### FROM LOGICAL TO ANALOGICAL PICTURES

Once the teacher has reduced an idea to a logical picture, he/she is not committed to using that particular diagram in his/her teaching. The teacher may prefer to search for a more familiar, more concrete or more interesting real world example which conforms to the same logical pattern, and use a picture of this new thing to represent the original idea. In other words, he/she may search for a visual analogy.

For example, a business partnership and love could each be represented by two small streams joining to form a river (see figure 4). All are examples of convergence, with the concrete example (river) serving to illustrate an abstract idea (partnership or love).

Many other concrete examples could have been used. Separate bricks forming a whole house. Ingredients being mixed to make a cake. Pieces of jig-saw being fitted together. The list is limited only by the imagination of the teacher and the experiences of the students.

Similar extensions from the logical to the analogical realm could see any linear idea represented by a picture of a train, or by soldiers marching in a line.

Divergent concepts could be introduced by a picture of a tree or scissors cutting paper or a firecracker exploding.

And cyclic concepts could be represented by a wheel or a merry-go-round or two dogs chasing each other's tail (see figure 4).

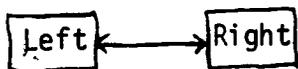
ABSTRACT IDEA	LOGICAL PICTURE	ANALOGICAL PICTURE
(1) <u>LINEAR</u> Banking Succession Progress		
(2) <u>DIVERGENT</u> Civil war Divorce Generosity Expansion Analysis		
(3) <u>CONVERGENT</u> Collaboration Partnership Love Accumulation Synthesis		
(4) <u>CYCLIC</u> Insurance Investment Political donation		

Figure 4. Logical and Analogical Pictures of Abstract Ideas.

## CONCEPTS AND IDEAS AS RELATIONSHIPS

Many abstract concepts, in a variety of subject areas, are associated with relationships between components. Relationships can often be represented by two extremes, such as high/low, left/right, now/then, slow/fast, etc. These can be depicted with simple logical pictures.

e.g.



fast →

slow →

On the other hand, some relationships are determined by the proximity of the components. These can also be illustrated with logical pictures.

e.g.      exclusive      overlapping      inclusive



As with "processes", so logical pictures of "relationships" can readily be changed into an everyday example — thus becoming visual analogies. For example, exclusive sets may become separate houses with a high wall between them. Similarly, overlapping sets may become children sharing a lollipop; and an inclusive set may become a cat swallowing a mouse.

### VISUAL CLICHES

Procedures for designing analogical pictures to introduce abstract ideas could be criticised on the grounds that they may encourage the use of visual cliches. The same simple pictures may be used repeatedly to introduce widely differing abstract ideas. Is this necessarily bad?

Verbal cliches may not be good literature, but teachers certainly find them useful in oral explanation (Mooij, 1976). Things are continually described as hard as a rock, sharp as a tack, clear as crystal, old as the hills, and fresh as a daisy. Familiarity with these verbal analogies prepare the student's mind for the new idea being introduced.

An analogy can stimulate a mental "set" in the learner. In the same way, analogical pictures (and logical pictures, too) can act as signals for new ideas. The appearance of diverging arrows or an exploding firecracker on the blackboard or in a textbook can say, "Watch out! An idea concerning divergence is coming up."

Visual cliches may not be good art, but they may help to improve teaching and learning.

## DESIGNING PICTURES FOR TEACHING

Most teachers would agree that both pictures and words are important in teaching and learning. Designing and producing realistic pictures of concrete objects in the real world is fairly straightforward. However, designing pictures of abstract ideas is a much more difficult and often neglected task.

The strategy suggested in this paper for designing visual messages to convey abstract concepts has, in essence, four steps.

1. Identify the *main idea* in the material to be taught. Can it be viewed as a *process* or *relationship*?
2. Analyse the process into a *logical picture* — linear, divergent, convergent, cyclic, or a combination of these.
3. Examine your *mental stock of visual analogies* which correspond to the logical picture identified. Create new visual analogies if necessary.
4. *Select* one of the analogical pictures or the logical picture as a starting point to introduce the abstract concept.

At first glance, this teaching strategy may appear rather prescriptive and mechanistic — but really it is quite open-ended. The teacher or lecturer creates and selects the visual analogies. And these decisions are based on the aims and objectives, the teachers knowledge of the students, and an appreciation of the context in which the teaching and learning is taking place.

One point worth remembering is that all analogies are in a sense false — whether used at kindergarten or at university. They use comparisons which are approximate rather than exact and they ignore the literal meaning of words and pictures. However, they are used in this way to provide bridges between the familiar and the unfamiliar. Analogies can be thought of as interim, but vitally important, aids to a more precise understanding of concepts, principles and ideas.

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# Curriculum Evaluation in higher education: Self reflection in a community

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In this paper a conception of evaluation is developed which depends upon the self-reflective activities of those most closely involved in the development and teaching of a course. The model for self-reflection is based upon the critical theory of Jurgen Habermas. It invites participants in a course to form a self-critical community and to examine the relationship of theory and practice in the teaching of a course and in its substance. By making critical analyses of the way theory expresses itself in practice through organisation and of the ways practical problems are registered in organisation posing theoretical difficulties, it becomes possible for participants to gain a concrete and authentic insight into the nature of the course as a learning experience. The model presented here focuses upon the way participant understandings of a course evolve through the process of critical debate.

The self-reflective approach to evaluation has recently been tried in the Curriculum Development Centre in Canberra, where a community of Curriculum Developers face common problems and issues related to their work across a variety of curriculum areas. Early experience with the model shows that too rigorous an adherence to its three foci (Theory, Organisation and Practice) tended to make self-reflective discussion somewhat rigid and formal; later experience has shown that it can be adapted so that it becomes more problem oriented and better adapted to the conviviality of discussion. In the paper some of these practical difficulties are discussed and recommendations about the organisation of self-reflection in critical communities. An attempt is also made to show how the model has been adapted to the unique conditions of the Curriculum Development Centre and how it may be adapted for use in wider situations. Particular attention is given to the applicability of the approach to curriculum evaluation situations in higher education institutions.

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## INTRODUCTION

In recent years, there has been increasing interest in curriculum evaluation in higher education, spurred on, no doubt, by the barbs of an accountability movement which attempts to respond to economic adversity through "rationalisation" of higher education provision and the promises of an emerging technology of evaluation that it can provide the means by which "rationalisation" of -- if not rationality in -- educational provision can be achieved. In such a climate, universities and colleges like the University of Illinois have attempted to preempt the intensification of external evaluation by getting in first with a systematic procedure for University "self-evaluation".<sup>2</sup> In such a climate, university and college higher education research units are increasingly called upon to carry out course evaluations and to assist embattled administrations in making hard choices about the "rationalisation" of institutional offerings. In such a climate, Paul Dressel's *Handbook of Academic Evaluation* (1976) appeared, somewhat ominously subtitled "Assessing Institutional Effectiveness, Student Progress, and Professional Performance for Decision Making in Higher Education".<sup>3</sup>

In such a climate, the oracular, the opportunistic and the officious in higher education research units will find the invitation to play a larger technical-managerial role in the improvement of higher education institutions hard to resist.

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2 The University of Illinois established a Council on Program Evaluation (COPE) to carry out evaluations of all departments of the University on a five-year cycle, using a combination of internal review and external review mechanisms.

3 Reviewed by the first author for the *Journal of Curriculum Studies* (1977, 9, 91-94).

The central claims of this paper are:

- (a) most curriculum evaluation technologies now being developed are sufficiently narrow in scope to be sharply limited in utility; in consequence they may all too easily become the political tools of autocratic or bureaucratic administrations;
- (b) curriculum evaluation in higher education is by no means a new activity, and has already developed convivial processes for course improvement and institutional self-regulation by critical communities of course developers and scholars;
- (c) by the systematic development of these convivial processes in the method of critical self-reflection it is possible to achieve the justifiable ends of institutional and curricular improvement without underestimating the complexity of the intellectual and organisational tasks involved or endangering the quality of higher education by replacing academic concerns with administrative ones.

These claims will be defended by a necessarily brief critique of current technologies of curriculum evaluation in higher education, by demonstrating that self-critical and convivial evaluation processes do indeed exist in contemporary curriculum practice in higher education, by outlining a perspective on evaluation and self-reflection which is sufficient for most evaluation purposes in higher education, by describing some recent experience at the Curriculum Development Centre, Canberra, where we tested the perspective in practice, and by referring to some of the problems encountered with it and suggesting some directions for improvement.

## I CURRENT TECHNOLOGIES

As the curriculum development movement of the 1960's spawned its progeny of evaluation methods and models, the developers of those models and methods began to apply them to their own work as teachers and curriculum developers in universities and colleges. While few of these higher education evaluators regarded measurement of student outcomes (both affective and cognitive) as sufficient for course evaluation, let alone faculty or institutional evaluation, a considerable stress was laid upon these outcomes as indicators of success in course teaching (Costin, Greenough and Menges, 1971). They may be relatively efficiently gathered, they are clearly relevant, and they sometimes suggest how the teaching of a course or the course itself may be improved. The efficiency of such approaches to course evaluation, however, made the technology of measurement appealing as an evaluation mechanism; though limited, it made at least a genuflection in the direction of evaluation as an obligation upon teachers.

The development of instruments for course evaluation demanded a new breed of specialists in higher education: institutional researchers whose task was to provide a technology for course evaluation. Two consequences followed: first, evaluation came to be identified with the technology of instruments, and second, as the institutional researchers recognised the complexity of the evaluation task it became their responsibility to develop the more complex technologies necessary to satisfy the requirements of an expanding role.

With the benefit of hindsight, it is easy to see that outcomes-oriented approaches are severely limited. Where they focus on student attainment and

student attitudes, they ignore many issues of considerable importance in reaching an evaluation of a course (e.g. substantive concerns, teacher satisfaction, resource requirements, the quality of the learning milieu).

Even more important than their limitedness, however, is the question of the relationships between teachers, students, administrators and evaluators that these arrangements created and sustained. Inevitably, they raised questions about control in the production and distribution of evaluative information, and questions about the uses to which such information was to be put (e.g. in decisions about promotion, course improvement, or resource allocation). The independence of the evaluators could not be guaranteed by the "objectivity" of their methods; it also required the development of procedures for handling data which could stand outside the information-flows already serving decisions about promotion, course improvement and resource allocation. Who were the evaluations for? The students, the teachers, or the administrators? Or perhaps all? These questions were not easily resolved, and they remain thorny ones. (See, for example, MacDonald, 1976, and House, 1976)

What is at stake here is that the emergence of a specialism of institutional researchers and evaluators has created a new battery of technical-political issues in higher education evaluation. In some senses, this makes the issues more tractable because they are explicit. Nevertheless, we will argue that self-reflective processes in evaluation are, for most purposes, superior to evaluation approaches which depend upon "external" evaluators.

It is a mistake to think that the technology of outcomes evaluation was the only approach taken by higher education evaluators. Indeed, some of the most interesting developments of the "illuminative" approach (Parlett and Hamilton, 1976) have been worked out in higher education settings. (See, for example, Miller and Parlett's *Up to the Mark*, a study of the examination game in higher education). But these developments also call for specialist evaluators: "illuminative" approaches are time-consuming and dependent on the availability of experienced evaluation fieldworkers. Not every course, department or institution can release the resources necessary for such evaluation studies.

## II "INFORMAL" SELF-CRITICAL APPROACHES

In any course, department or institution, there is always a low but significant level of evaluative activity underway, even when it is not supported by "formal" evaluation studies. This activity is the more or less systematic, more or less public form of self-reflection that accompanies the design and teaching of any course, or the operation of any administrative unit in an institution. This "substrate" of evaluative activity feeds the usual social negotiation processes of course committees and institutional management. It depends upon the self-critical awareness of participants in the institution.

Such evaluative activities are convivial, being based on "natural" processes of social negotiation, deliberation, justification and decision making. And they are inherently political, affecting the conditions of social life of those within and outside the institution. They are essentially practical, being concerned primarily with real courses or real administrative units within the institution, but they are necessarily guided by matters of principle and of theory as these are canalised into the organisational forms of the institution (for teaching, research, public service and administration).

The problems with these informal mechanisms for evaluation are that they are often insufficiently systematic (being based on the resolution of practical problems that actually do arise), insufficiently comprehensive (being guided by moment-to-moment deliberation and decision making rather than by systematic consideration and cross-referencing between matters of theory, organisation and practice), insufficiently rigorous (being based on the vagaries of discussion rather than explicit analysis and systematic observation), and open to abuse (often being unreasonably influenced by individual opinion or political expediency). Nevertheless, such mechanisms are adaptive and evolutionary: decisions taken are open to correction in the light of experience and new forms of organisation of the institution's work can be created to accomplish new tasks. The difficulty is that they are sometimes slow to respond: beachheads of power may be difficult to disperse once they become institutionalised, suggestions for change based upon student response to a particular course may be hard to accommodate within forms of organisation which exist across the whole institution, and long-term consequences (e.g. the success of graduates in their careers) may be ignored by the day-to-day self-regulatory processes in the institution.

The theoretical problem for evaluation is whether these informal processes constitute a defensible form of evaluation. Then, assuming that they are, the organisational problem for evaluators is how to improve them.

It is our view that these informal mechanisms do constitute a defensible form of evaluation. The characteristic that defines them as such is their self-critical quality. They certainly conform to our own definition of evaluation as *the process of marshalling information and arguments which enables interested individuals and groups to participate more fully and more effectively in the critical debate about a program.*

The organisational problem is to find ways that these informal processes can be intensified to overcome the practical problems listed earlier, while preserving as much as possible of their practicality (and relevance) and their conviviality. In the next section, we develop a perspective on evaluation as self-reflection which may satisfy these requirements.

### III EVALUATION AS SELF-REFLECTION IN A CRITICAL COMMUNITY

The approach to evaluation we advocate here attempts, first of all, to overcome the limitedness and political manipulability of many current approaches to curriculum evaluation. Secondly, it attempts to overcome the inadequacies of informal self-reflection listed in the last section. Thirdly, it attempts to capitalise on the existence and experience of self-critical groups in higher education institutions so that evaluation can be more rigorous and yet remain under participant control.<sup>4</sup>

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<sup>4</sup> The approach presented here is based on the critical social science of Jurgen Habermas (1972, 1974). It was developed in a doctoral thesis by the first author (Kemmis, 1976) and worked out in procedural terms during a consultancy to the Curriculum Development Centre, Canberra in 1978 (Kemmis, 1978). It was implemented as a joint project by both authors at the Curriculum Development Centre, and continues to be used in modified form by the second author.

## Theory and Practice

Many evaluation approaches are theoretic in character (e.g. the tests and measurements approach, Lindvall and Cox, 1970; the "goal-free" approach, Scriven, 1974; or the "objectives" approach, Tyler, 1949). That is to say, they proceed from theoretical aspirations (either in subject-matter or in terms of the market justifiability of a program) to create an evaluation mechanism for determining shortfalls in a program or its performance. Other approaches are essentially practical (e.g. Stake's "responsive" evaluation, 1975). That is to say, they proceed from the conduct of a program and the perspectives of those in and around it to create an evaluation mechanism which can identify issues and agreements about the program as a justifiable organisation. If we take the aims of evaluation to be the justification of programs and their improvement towards more justifiable forms of organisation, then we inevitably raise questions about the relations between theory and practice in a program.

The process of evaluation, whether theory- or practice-driven, consists of explicating the relations between theory and practice to show how program performance relates to aspiration, how aspirations are justified (e.g. in evaluation of program goals), and how program practice is constrained by the opportunities and the circumstances of the setting in which the program is tried.

There are precursors to this idea. For example, Stake's (1967) "countenance" matrices are especially thorough-going in relating descriptive and judgmental data about a program; its antecedents, transactions and outcomes; and logical and empirical consistencies between these elements. The "countenance" approach is not ordered explicitly around the relations between theory and practice expressed in a program (in aspiration and performance), but these relations are strongly implicit in the approach. Few approaches to evaluation are as comprehensive.

Evaluation models which are theoretic in character suffer from the incompetences of theory: limitations of scope, abstractness, and idealism. Models based on practice suffer from the incompetences of the practical: the problems of reducing multiplex reality to communicable ideas, vulnerability to circumstance, and expediency. Only by developing a model which can contain these contraries is it possible to avoid oversimplification from the perspective of principle (e.g. evaluation as a description of shortfalls between performance and theoretical ideals) or from the perspective of practice (e.g. rewriting program goals so that they can be attained under given circumstances). The present approach does this by projecting the relations of theory to practice into the plane of "organisation", which is in the nature of plans for action guided by principles; i.e., organisation is considered as a concrete and enactable expression of principles which mediates between theory and practice.

Moreover, most evaluation models are guided by a discrete or "enclosed" conception of the evaluation task. It is presumed to finish with a decision or a judgment. They are thus limited by present aims or ideals and by present conditions of operation. Theoretic evaluation approaches often attempt to overcome this difficulty by concerns for generalisation (beyond the conditions of present practice); practical approaches by offering alternative perspectives on the program from which justifications or rationalisations may be synthesised. The present approach attempts to overcome these limitations by organising itself around the evaluation process (self-reflection and debate), and by allowing for provisionality at every level (theory, organisation and practice). It takes an evolutionary stance, seeing the program as adjusting itself to

present constraints at each level, yet attempting to become more coherent within each level and between levels. But the drive towards coherence is not merely towards self-justification narrowly conceived (in its own terms, or for limited conditions); it is countered by concerns forced upon it from outside its own development (the wider contexts of theoretical debate, organisational arrangements in society, and practical circumstances). In short, the program is never isolated in its justification of its work, and justification is never a once-and-for-all matter. The present approach begins from the assumptions that programs and their justifications are time-dependent and evolve through time, and that they are contextually-embedded.

Higher education institutions already encourage the formation of critical communities through their research and academic teaching functions. And in every field, understanding evolves through the systematic testing of relations between theory and practice (e.g. in experimentation, observation, the systematic collection of historical records, or testing of resilience of ideas by argument).

In every field, organisations exist for public examination of these theory-practice relations (publication of research reports, professional conferences, etc.). Curriculum evaluation in higher education, by encouraging the development of critical communities around the curriculum functions of the institutions, can capitalise on the familiarity of staff with these processes and create the conditions for reflexive development of the work. (Such processes are surely assumed in any argument for academic freedom.)

#### The self-reflective approach

In curriculum development and evaluation, theory, organisation and practice are always interrelated. A curriculum is guided by theoretical principles, expressed in organisations for teaching and learning, and manifested in practice in real settings. Different principles apply in considering a curriculum at each level. (These are summarised in an Appendix to this paper.) Theory develops by research and scientific discourse; organisation by planning and the flexible implementation of plans in the light of circumstance; practice develops in learning by doing and from mistakes.

Organisations for curriculum express theoretical and value commitments about social action, and are modified both in the light of developments in theory and in the light of practical problems in implementation or changes in circumstance. Theory develops partly according to its own internal principles, but also by being expressed in organisation and tested in practice. Practice is guided by theoretical principles and organisational constraints, but the point of theory and of organisation is that they may control the purely circumstantial process of trial and error.

Furthermore, each level has its own distinctive "real-world" context which influences it, and these influences flow on to the other levels. Theoretical ideas develop through discourse in critical communities of researchers; organisations interact with other organisations and within wider social, administrative and legal frameworks; practice is constrained by local conditions. Through such mechanisms, contextual concerns "seep in" to a curriculum-in-action.

In considering these as part of a comprehensive evaluation enterprise, it is necessary to operate with different principles at each level. But within the evolutionary perspective of the approach, it is possible to say something about the three levels in general. Problems in programs arise as problems of inflexibility or intransigence on the one hand, and as problems of the unbridled

proliferation of alternatives on the other. The first set of problems arise because organisation, theory or practice remain unchanged in the light of changed circumstances; the second set of problems arise because of a drift towards incoherence, organisational instability, or uncoordinated action.

In evolutionary terms, organisations adapt themselves at every level by the generation of variants and processes of selection among variants. The aspiration to greater awareness creates new or variant ways of thinking, organising and acting; the aspiration to coherence or self-regulatory control creates a tendency to suppress new ways of thinking, organising or acting. The self-reflective process consists in negotiating between these tendencies in the service of both increased awareness and increased control or coherence. This is achieved differently at each level.

Organisation is in the nature of plans. It is expressed in strategies, blue-prints for action, routine management and control operations, working relationships expressed as roles and links between roles, and the like.

Since organisation is about plans, we may think of it by analogy with law which evolves both at the parliamentary level and by precedent in common law by a more or less self-regulatory process. Taking the parliamentary aspect of the analogy, we may say that organisation evolves by legislation and amendment. New prescriptions for and proscriptions against action are enacted as laws which provide guidelines for action. In the light of experience, they may be modified by amendment. Legislation "organises" action, and new legislation appears as a phenomenon of the generation of variant forms of organisation. Experience exerts a selective function on these variants, and leads to amendments. In this sense, legislation and amendment is a systematic evolutionary process.

Theory is about ideas. It is expressed in theoretical propositions, statements of curriculum rationales, statements of individuals' understandings, aspirations, values and beliefs, and the like.

Popper (1974) discusses the evolution of scientific knowledge in the language of "conjecture and refutation". Toulmin (1972) gives a rather less formalistic treatment of the evolution of knowledge, and one which overcomes some of the problems of seeing knowledge as evolving purely formally; by contrast, Toulmin demonstrates the power of critical communities in the evolution of knowledge. Nevertheless, Popper's phrase is apt, and will be retained here. New or variant ideas are conjectured by researchers who attempt to refute or disconfirm them through research programmes (whether experimental, as in science; interpretative, as in history; or analytic, as in philosophy). Conjecture and refutation thus appear as twin variation and selection processes in the evolution of theory.

Practice is about action. It is evident in the work itself, expressed in the activities and forms of life of participants in the work.

At the level of practical action, variation and selection appear in the process of trial and error. Systematically pursued (i.e., by acting in a spirit of experimentation), trial and error can become a systematic evolutionary process.

In a "living" curriculum, these processes naturally interrelate. Self-reflection, as an evaluation process, is the systematic attempt to interrelate them.

This whole set of relationships might be expressed in the following schema:

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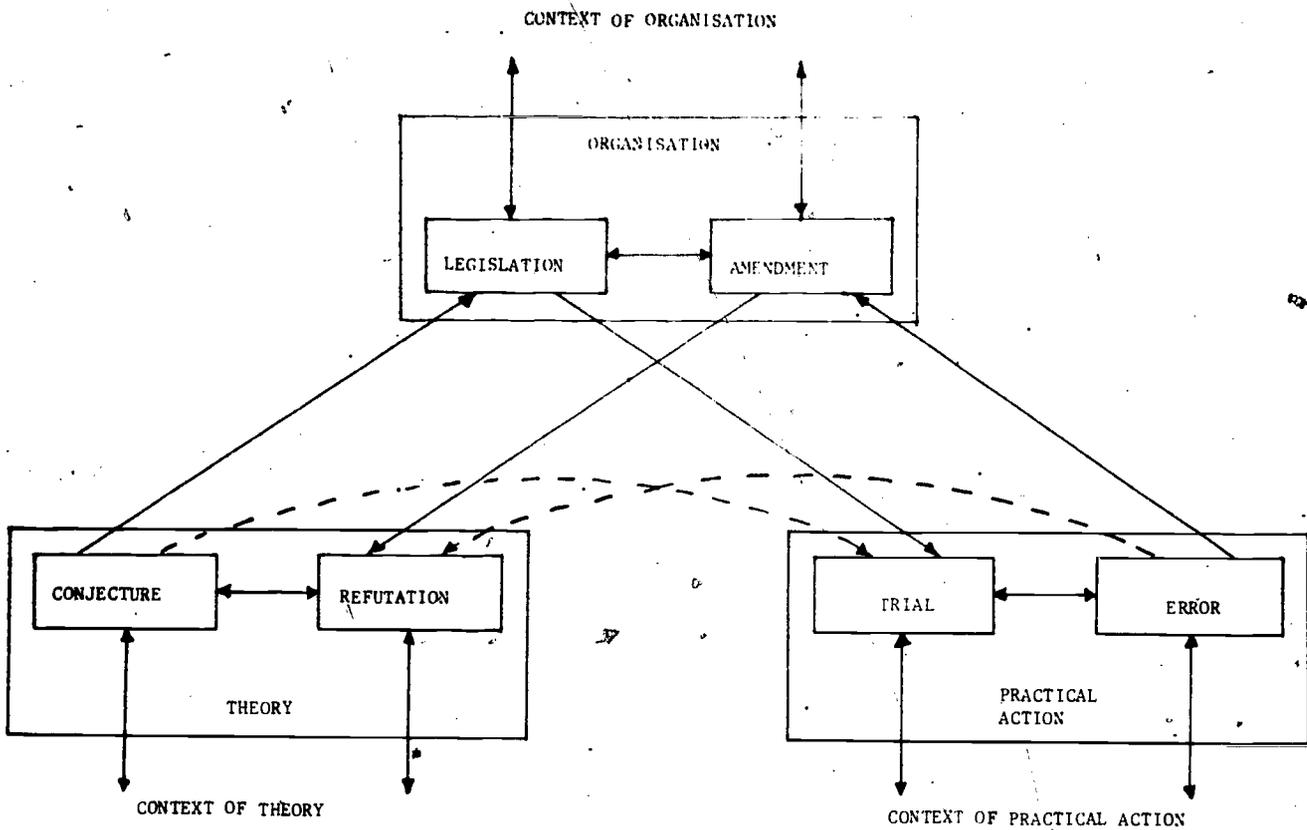


Figure 1: Interrelationships of Organisation, Theory and Practical Action in an Evolutionary framework.

Figure 1 expresses the general outline of relationships which must be considered in critical self-reflection. The task of the evaluation enterprise is to identify these relationships, to discover problems within and between levels, and to stimulate the generation of potential solutions.

Within the schema, it can be seen that theory modifies organisation by the influence of conjectural principles on legislated forms of organisation; organisation modifies theory as amendments to organisation suggest refutations of conjectured principles. Organisation modifies practice as legislated forms of action prescribe and proscribe trials in action; practice modifies organisation as errors or failures of action suggest amendments to legislated forms of organisation.

The links between theory and practice are indirect; as has been suggested, they are mediated by organisation. (Theory and practice "speak different languages", as it were; organisation, whether in research or social action, mediates between them, making them "comprehensible" to one another). Nevertheless, it is as well to note the apparent relations between them: theory modifies practice through the apparent relation of conjectured principles to trials in action; practice modifies theory through the apparent relation of errors or failures of action to the refutation of conjectured principles.<sup>5</sup>

5. A range of other considerations should be considered against the background of this framework. Some are touched upon in the summary of principles appended. Still others, like the social theory they imply, must be discussed in a future

### An example

In carrying out an evaluation according to the principles outlined here, it becomes immediately apparent that an enormous intellectual and analytic task is imposed on any critical community bold enough to embark upon systematic self-reflection. What is at stake here is not the ultimate impossibility of the task -- it engulfs huge realms of human knowledge and social principle -- but the ultimate indefensibility of any alternative. In short, if evaluations must always be limited, then they should be limited and open rather than limited and closed. The approach denies evaluation models which would make any absolute or transcendental claims about the justifiability of programs, and evaluations which claim that all justifications must be tailored to present circumstances (rationalisations). It raises questions to be considered, recognises their contextual and historical embeddedness, and urges those involved in the reflective process to go further in their analyses and observations. Most of all, it urges those involved in a program to set out their principles, their plans, and their practice so that they are available for reflection.

Imagine a university biology course. Just to raise some of the issues involved in the approach, consider the kinds of theories upon which it depends: theories of knowledge of the particular subject-matter (e.g. evolutionary theory), of curriculum and pedagogy (teaching and learning, etc.), and social theory (ethics, ideology, political economy). These are all expressed in the organisation of the course: its processes of justification and the structure of arguments presented in the course; the organisation of the subject-matter-to-be-presented (in reading, lectures, practical work, etc. -- the specific contents of the course); the arrangements made for teaching and learning and the use of supporting resources (e.g. lectures, practical work, tutorials, library work, assignments and examinations); and the organisation of teacher-student, teacher-teacher, student-student and other social relationships (concerning, for example, notions of teachers' authority, students' rights, the role of administrators, and the like). And these in turn may be related to specific forms of activity in practice: the conduct of argument and justification in the course; the specific contents actually studied; the nature of lectures, practical sessions, and the other component parts of the course; and the specific social relations which come to exist between specific individuals.

Figure 2 mentions these relationships without further explication, but could readily be expanded on the principles expressed in Figure 1.

The second main claim of this paper is that reflection of this kind already goes on in higher education institutions as courses are informally evaluated by those who participate in them in one way or another, and that self-reflective meetings already exist where such matters are discussed. The third claim of the paper is that these discussions could be intensified and improved by making these meetings more systematic: by explicating these kinds of relationships, observing more closely, by recording, and by acting in a spirit of experimentation.

The task cannot be comprehensively performed given the real constraints on time, social context and participation in a course. Using the approach, the schema, and the principles it employs, however, it may be possible to extend the range of issues to be discussed in evaluating a particular program within the limits of time available, the social context of the course, and the people most directly affected by it. In short, the approach demonstrates what thorough justification would be like and invites interested parties to participate in relevant discussions without closing them off through a technology of evaluation. It is, if you like, a plea for reasonableness -- for "rationality as reasonableness", to use Weir's (1976) term -- in the face of contemporary climate for evaluation based on rationalisation (in both its economic and its intellectual senses).

## ORGANISATION

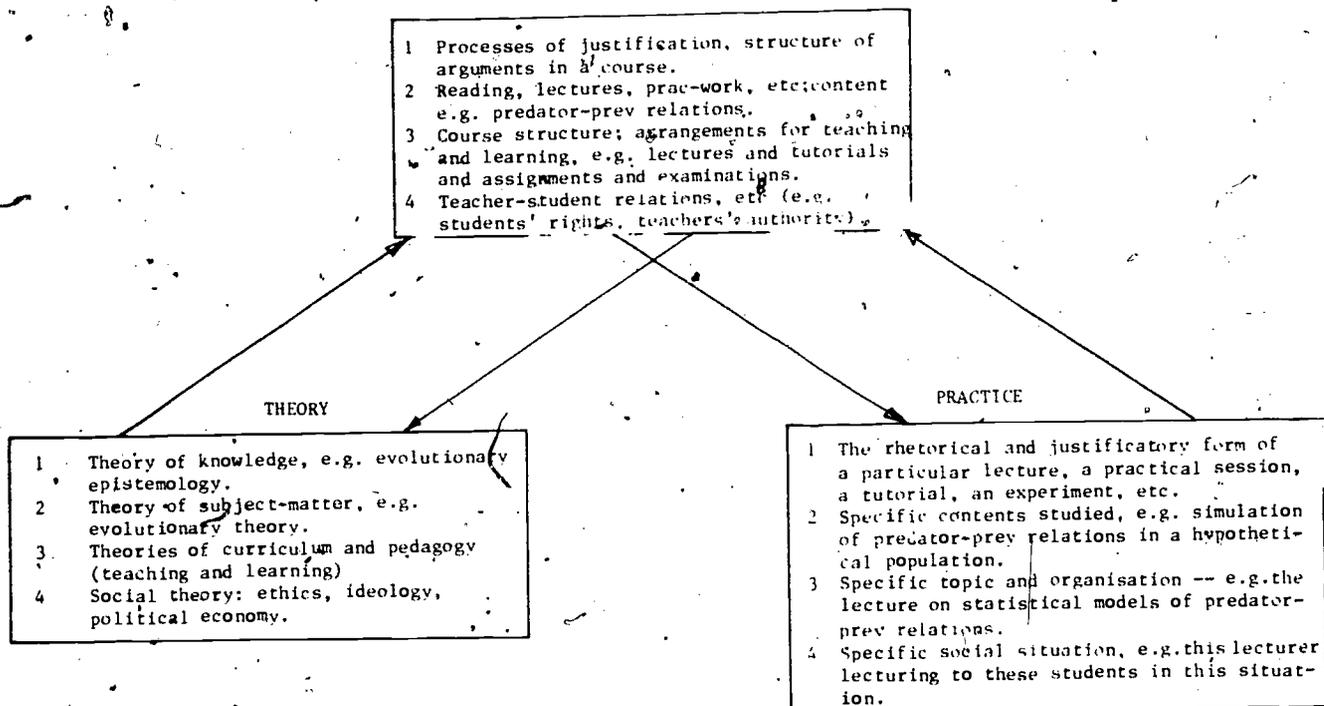


Figure 2: Some interrelations between organisation, theory and practice in an imaginary biology course.

## IV SELF REFLECTION MEETINGS IN THE CURRICULUM DEVELOPMENT CENTRE (CDC)

### Background information on CDC

The Curriculum Development Centre was established in 1975 to develop school curricula and school educational materials at the national level. In order to perform this function the Act establishing the Centre empowered CDC to

- undertake research
- publish materials
- collect, assess and disseminate information.

The professional staff of the Centre reflects these functions and consists of people with training and experience in educational research and evaluation, teaching, selected curriculum subject areas, information services (library work and computerised data banking), administration and educational publishing. Thus there is a considerable diversity of professional abilities and functions which have to be brought together in various combinations to work on curriculum projects.

Developing common understanding of the work of the Centre, its underlying philosophy and concepts, methods of working (particularly the ways of working cooperatively with the education systems and schools) and the practical problems which delineate and constrain programs, is essential to effective team work within the Centre.

The organisational arrangements for any one project are generalised Figure 3. As is evident from Figure 3, the structure provides the opportunity for numerous meetings and widespread discussion of any aspect of a project.

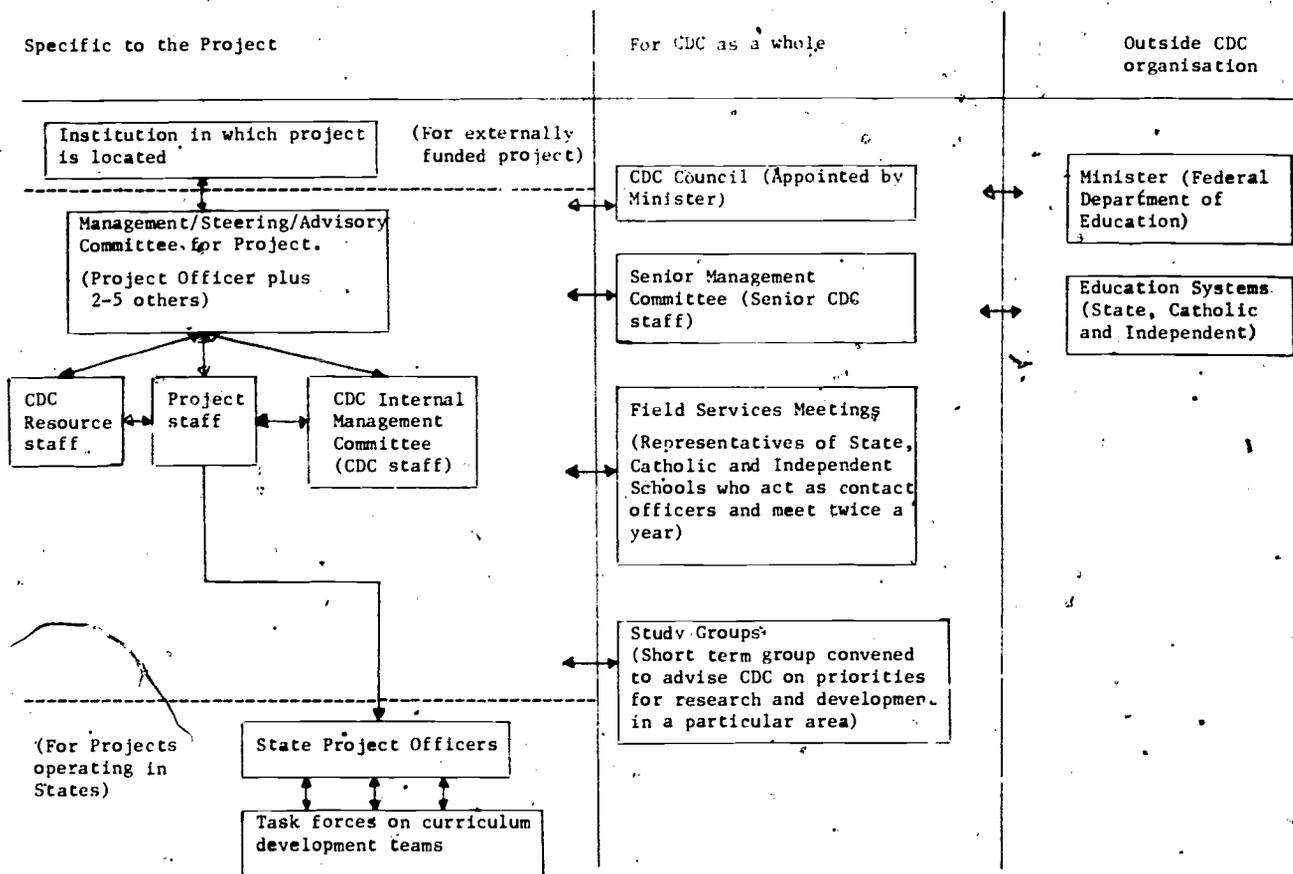


Figure 3: Organisational Structure for a project.

### Theory

The proposal that CDC adopt the method of self-reflection for its internal evaluation was put forward at a general staff meeting at the end of June, 1978. The central thrust of the proposal was that CDC should view itself as an organisation that learns from experience and gradually builds up increasing understanding of and competence in curriculum development processes. As an aid to deliberate fostering of the collective learning of CDC, as opposed to the individual learning that inevitably takes place on the job, self-reflective meetings were to be held. The discussions in the meetings would use the concepts of theory, organisation and practice and the interaction between these as the basis for analysis and assessment. The idea was to hold a series of meetings in CDC's program areas (the areas where developments are underway) and to trace the development of programs over a period of time. At intervals, wider staff meetings would be convened to look at the main findings from individual discussion groups and thus foster the development of the Centre staff as an organisation that learns.

If that was the *theory* behind the self-reflection program, what of its *organisation* and *practice*?

## Organisation

The organisation was essentially simple. Three people with a background in evaluation (Ed Davis, Clare Hughes and Stephen Kemmis) would offer to convene meetings on programs and projects at the request of other CDC staff. One of these people would act as chairman and in the initial experimental meetings all of us would participate to gain experience in the process. The chairman would start the meeting by describing the use of the concepts of theory, organisation and practice as the basis for analysis.

In order to keep work to a minimum, record-keeping was to be quite informal. Each member of the group was asked to note down points which he considered important. All the notes were collected and filed as raw data - no writing or typing up. Meetings could also be recorded and the tapes kept for reference. For future meetings, one member of the group would look at the file and summarise key issues as seen by the group at the time. In that way it was hoped that on-going view of the development of the project could be maintained.

## Practice

What actually happened?

Ten meetings have now been held on the following topics:

- Language Development Project,
- Curriculum Information Project,
- Expressive Arts Project,
- Small-scale grants,
- Mathematics education,
- Bibliographies,
- Dissemination,
- Library services,
- Publications,
- Core Curriculum program.

The list appears to display an immediate weakness - no program has been discussed more than once. However, this should not be taken as indicative of failure. One reason for the lack of on-going meetings about programs is that events move slowly and evaluation of ideas and changes in organisation and practice take time and reappraisal is not needed frequently. The second reason is the wide scope for discussion of projects generally. In some cases, steps have been taken partly as a result of the self-reflection meetings to set up structures within projects to continue this function; in others, existing structures have been better used. The accumulation of experience is taking place through the involvement of staff in discussion of a number of projects rather than through on-going analysis of one program. Continuing analysis of individual programs and recording of program evolution may come in time.

The first three meetings were held on an experimental basis. At that point, about half of the members of staff had been involved in self-reflective meetings and continuation of the meetings was offered as service to the Centre

by the Studies and Inquiries section. Despite favourable comments on the initial meetings there was a total lack of response to the invitation -- a not altogether surprising outcome in an organisation which has had a record of being unable to sustain any system of staff meetings, formal or informal.

In the light of favourable comment from participants in the initial meetings, we were reluctant to see a potentially good idea lapse. We therefore looked for issues which seemed to be of importance to CDC and the second author convened two more meetings, one on small scale grants and one on bibliographies. These two meetings went particularly well; partly because all the people at the meetings were involved in small scale grants activities and in compiling and using bibliographies (though in different programs) and had not discussed the topics before, and partly because it was possible for the second author, who chaired the meetings, to analyse fairly clearly at the start of the meetings what the concepts of theory, organisation and practice might mean in those areas.

The last three meetings have been at the request of other members of staff, which represents something of a breakthrough. It seems that the discussions are being used to some extent as preliminary problem solving devices in that staff are seeking to clarify their ideas and obtain the views of others in a non-hierarchical situation before moving into the more formal decision-making structures of the Centre. Beyond that, the discussions are serving a felt need to exchange ideas on issues and processes common to a number of projects.

While generally the focus has been those concerns which are under the control of Centre staff, discussions have ranged into the wider areas of the function of CDC as a national organisation, the setting of priorities for the Centre and CDC decision-making processes.

The theory of self-reflection in an evolving organisation as expounded earlier in this paper seems too grand and too ambitious, to describe the relatively modest activities that have taken place in CDC. Yet it still seems essentially sound. Ideas have evolved and affected the organisation and practice of the Centre. Understanding of what we are about has been enhanced. The most effective meetings have been those in which specific aspects of theory, organisation and practice have been analysed or in which one level has been selected out for particular attention. Practice has shown, however, that there is a need for one person, or a small group of people, to be responsible for the organisation of the program of self-reflective meetings. This person must generate meetings (and thus has to be in a position to identify topics of general concern and interest) and respond to requests from members of staff. The program needs to be provided with impetus, and to some extent to be driven, or in a busy organisation it will lapse.

## V REFLECTIONS

Experience with the self-reflective approach suggests that too rigorous an adherence to its analytic categories (organisation, theory and practice) makes it cumbersome. If analyses at each level were too detailed, discussion became rigid, formal and self-conscious. In order to retain the conviviality of discussion, it was necessary to relax its analytical strictures and allow discussion to rove rather more loosely around the three foci. Discussion also seemed to be improved when the approach was introduced in such a way as to encourage explorations of ideas at each level -- these could be refined as experience with the approach accumulates.

Discussions also seemed to be improved when they began from organisation and led from there to discussions of practice and theoretical principles. On the whole, identifying theoretical principles and analysing theoretical questions remains the most difficult analytical task.

It is clear from the meetings held, however, that they do not provoke the defensive reactions usually associated with evaluation: these were discussions, often stimulating and insightful ones, between communities of individuals who were concerned with the improvement of programs of common interest and with their justification. But because the conversations were among constructively critical colleagues, they were often penetrating.

A major problem is that the meetings have not yet generated well-articulated justifications across the analytic categories. It is perhaps too early to expect that. But the records actually collected, while they are suggestive, are by no means adequate. The approach begins by asserting the value of discussion and debate; at worst, it may end in a talking-shop. But here, too, there is room at least for hope: participants have felt better prepared after self-reflective meetings to justify their programs publicly (e.g. to meetings of the CDC Council), and there is some evidence that they have influenced project or program documents. This is encouraging, because the approach is predicated on the idea that justification of a program is not a once-and-for-all matter, and that it develops along with the program itself.

Higher education institutions already engage in self-reflective activities of the kind envisaged by the approach. It is unlikely that course-based self-reflection would be very much more rigorous than was the case for CDC. It might be possible, however, to improve the rigour of discussion at the theoretical level -- indeed, higher educationists are often acutely aware of theoretical issues (as, for example, in debates over students' rights, the structure of knowledge in disciplines, and the proper pedagogy in courses). Whether these concerns can be interrelated, or whether they can be related to organisation and purely practical considerations remains to be seen.

On the one hand, constraints of time and interest in self-reflection seem to suggest that the approach, as outlined here, is too comprehensive and too analytically-detailed to be practical; on the other, it is clear that the theory and organisation of self-reflection will need to be still further explicated. It is our hope that it can be modified in the light of its own principles, and more effective forms for the organisation of self-reflection discovered. Its perspective offers a coherent approach to analysis of theoretical issues at stake in a given curriculum, and a way of generating and synthesising observations of its practice. It may thus contribute to the process of critical debate about programs among participants in the communities of interest they create.

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A. The principles in general

- Aim : Improvement: living with greater awareness and greater self-control. (Assumptions of autonomy and responsibility of individuals, free commitment to joint action by fair negotiation between participants and consensus about the negotiation processes.)
- Problem-Sources: Intransigence/inflexibility (stability in the face of changed circumstances); unbridled proliferation of alternatives in relatively stable or benign circumstances.
- Method: The dialectic; acting in a spirit of experimentation by thinking critically about real problems (concrete negation); generating solutions within the limits of individual ability, the capacity of the organisation, and the limits of understanding, and trying them out with an eye to their implications within and across levels.
- Criteria: Critical awareness and democratic control.
- Content: The work of the institution conceptualised as an evolving organisation which takes seriously its commitments in organising work, developing sound theory/rationale and developing sensible practice.
- Context: Democratic society, critical communities, communities of self-interest.

B. Organisation

- Aim: Improvement of organisation by making it more authentic and more appropriate.
- Problem-Sources: Intransigence of present forms of organisation; inflexibility; proliferation of new ways of working when procedures are already available; problems of diminished sense of participants' control.
- Method : Legislation and amendment; forward planning and flexible implementation in the light of principles and circumstances. The method is concretely developed in :
- (a) description of present organisational structures,
  - (b) identification of problems in organisation itself and in relation to theory/rationale and practice, and
  - (c) generation of potential solutions and testing them within organisation and in relation to theory/rationale and practice (acting in a spirit of experimentation).
- Criteria: Authentic insights in the organisation of enlightenment, authentic consensus about the organisation of the work.

**Content:** Strategies, work-plans, blueprints for action, routine management and control operations, working relationships and structural arrangements (e.g. in organisational charts), etc.

**Context:** Content of institutions, laws, regulatory procedures.

### C. Theory/rationale

**Aim:** Improvement of theory/rationale through increased internal and external consistency; increased intellectual control over the work.

**Problem-Sources:** Intransigence of present theory/rationale; blind commitment of theories, values; proliferation of theoretical statements or commonsense understandings without systematisation; incoherence; romanticism; abstraction; irrelevance.

**Method:** Conjecture and refutation; argument and research. The method is concretely developed in:

- (a) formulation and expression of theory/rationale,
- (b) formulation and consideration of issues through analysis, research and relationships with organisation and practice, and
- (c) generation of potential solutions to problems testing them within theory/rationale (internal consistency and in relation to organisation and practice (external consistency)).

**Criterion:** True statements (justified true belief reached through scientific discourse).

**Content:** Theoretical propositions; statements of rationale; statements of participants' understandings, aspirations and values.

**Context:** Context of theory, scientific discourses, debate, justification and negation among critical communities.

### D. Practice

**Aim:** Improvement of practice through better adaptation to working conditions and contexts of action; adaptation to theory/rationale, and organisation; acting with greater wisdom and prudence; adaptation to the purposes of participants and achieving free commitment to the work.

**Problem-Sources:** Intransigence and conservatism of present practice; undisciplined proliferation of alternative ways of working (without regard for the coherence of the work); tendencies to act arbitrarily, purely opportunistically, or purely reactively.

**Method:**

Trial and error; learning by doing and learning from mistakes. The method is concretely developed in:

- (a) recounting and reviewing activities,
- (b) identification of problems, failures, mistakes, both within practice and in relation to theory/rationale and organisation, and
- (c) generation of potential solutions and testing them in practice (internal coherence) and in relation to organisation and theory/rationale (external coherence).

**Criterion:**

Prudent decisions.

**Content:**

Action: the work itself; forms of life and activities of participants.

**Context:**

Circumstances and opportunities presented by particular situations.



# Self selecting mature age students

Allan Pitman  
Deakin University

The use of a printed Counselling Package as the principal mode of information supply to prospective mature age, off-campus students is investigated. Applicants self-select in an open entry scheme in which offers of University places are made in strict order of receipt of application. No screening tests are conducted by the institution, but counselling is available. The decision-making rests with the prospective student, and not with the institution.

A profile of the background characteristics of applicants and the role in their decisions played by the counselling materials provided is given. An analysis of that information seen as important by applicants and possibilities for acting on this information completes the paper.

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Deakin University was established in 1977 with the express responsibility to involve itself with the provision of University programs of study for remote students. In the two years since, the University has developed courses leading to Bachelor of Arts, Bachelor of Arts (Education) and Bachelor of Education degrees. A system of study centres has been established throughout Victoria, and material is prepared in printed Study Guides, Books of Readings, audio cassettes and videotape.

Open campus students in the Bachelor of Arts in Humanities and in Social Science may enter with normal matriculation qualifications or through an open entry scheme available to mature age students.

To be eligible for admission under the mature age provisions, students must be 21 years of age or older, with no previous tertiary qualifications and have not attempted, full time, the Higher School Certificate within the preceding three years.

The method of entry of students admitted under the Mature Age Program is unusual in that the selection procedure is shifted from being the responsibility of the University to being that of the prospective student. It has been the policy of the institution to use this program to initiate an open entry scheme. Consequently, offers of enrolment are made on a "first enquiry, first offer" basis.

Advertisements offering mature age entry are placed in newspapers and weekly magazines in May. Each request for information received is answered with the booklet "A Guide to Open Campus Programs". The 28 page Guide contains factual information about the University, structural arrangements for the University's open campus operation, degree programs offered, information about specific courses offered by the various schools, and information regarding application procedures. All prospective students are sent this material, which contains the procedures and requirements for entry by normal means, with advanced standing, or through the Mature Age Entry Scheme. The closing date for the receipt of the mature age applications is 31 August.

An official application form is enclosed. Applicants must list courses for which enrolment is sought in order of preference.

Applicants are advised in the Guide (page 24) that:

"Applications will be reviewed early in September and offers of enrolment made by 21 September. Accompanying the offer will be a Counselling Package designed to help students wanting to return to formal study to:

- a clarify that decision
- b confirm that Deakin University is the institution in which they want to enrol.

Also this Counselling Package will:

- a introduce prospective students to off campus studies and the resources available to help
- b provide some initial information on study techniques.

Mature age applicants will be asked to work through this Counselling Package and then notify the University if they wish to continue with the enrolment offer. When this is done an enrolment form and appropriate information will be provided.

The closing date for enrolments will be 30 November, 1978.

Usually an off campus student enrolls for a part time load which is anywhere from one to five semester units. The number of courses this represents will vary according to the unit value of courses. For those enrolling for the first time we recommend a load of two semester units for the year. Experience indicates that adaptation to study at University with the distinct needs of off campus study takes time and therefore it is best to avoid taking too great a load initially."

The Counselling Package has been written for use by mature age applicants. It is distributed to all applicants for open campus enrolment, but the present study is limited to its use by the mature age applicants as described above.

The Package is a 25 page loose leaf document presented in a glossy cover and contained in a heavy duty plastic envelope. It consists of three parts:

1. The Personal Touch (pages 3 - 13)

This part contains information about pre-enrolment weekend workshops, reasons for students discontinuing courses, information on how to use the package, brief enrolment information, comments from students who are presently on course, names and telephone numbers of staff providing services, hot line number, addresses of study centres and some background information about staff directly involved in servicing the open campus operation.

2. Making Your Decision to Enrol in an Off Campus Course (pages 14 - 18)

The content here is directed toward encouraging prospective applicants to align their requirements and expectations of courses with those of the courses being offered. It is the intent of this part to enable those for whom the offered courses are not appropriate to recognise this themselves, and re-direct their interest to more appropriate institutions and/or modes of study.

### 3. Study Techniques (pages 19 - 25)

Information ranges across finding time and a place to study, the SQ3R reading formula and advice on reading techniques and hints on essay writing. A list of references to books about study methods, reading and library usage completes the Package.

After reading through the Package, applicants must return a postcard accepting the offer of a place in a particular named course and requesting enrolment papers, or rejecting the offer. The deadline for enrolment is 30 December.

It should be noted that the above procedure demands four acts of commitment by applicants over the period leading to enrolment: enquiry, application for enrolment, request for enrolment papers and actual enrolment. This has been deliberate, and the timing has been spaced to enable each step to be made in the knowledge of more information about aspects of the requirements and demands of embarking on open campus study.

#### Procedure

The evaluation of this mode of entry was initiated in May 1978, when a post hoc study of the first Counselling Package was undertaken. All 211 students enrolled under the Mature Age provisions were posted a questionnaire with stamped reply envelope. Reworded questionnaires were sent to the 22 who formally deferred and to the 76 who formally rejected the offer of enrolment. Responses were received in time for analysis from 100 enrolled, 9 deferred students and 20 who refused the offer. The time available was short, as the 1979 Counselling Package had a July printing deadline.

The main phase of the evaluation was set in motion in September 1978, and directed its attention to that cohort offered mature age entry for 1979. Two groups of applicants were interviewed in the weeks immediately prior to the posting of offers of enrolment and the Counselling Package. One group of 35, was resident in North East Victoria, in the region bounded by Wangaratta, Kyabram and Albury. The other was in Canberra, a source of an unusually large number of applicants from one occupational group in the Commonwealth Public Service.

Information gained from these interviews was used in the design of the questionnaire which was posted to applicants in the week following the despatch of the Counselling Package. Demographic information sought was residential address, previous highest schooling, occupation and age. Motivation for enquiring was also requested. Evaluation of the package was obtained by asking for identification of the most useful and least useful parts, whether a pre-enrolment workshop was attended and if same was useful, if the Counselling Package helped in the decision to accept or refuse the enrolment offer, a page by page assessment of the usefulness of content, and suggestions for improvement of the Package.

A reminder letter and questionnaire was posted in late November, and replies received until the end of December were included in the analysis. Of the original 448 questionnaires distributed, replies were received from 231 prior to, and 111 after the reminder letter. Nine were returned by the postal service.

In the second week of February a second questionnaire was sent to respondents who had accepted the offer of enrolment. This was sent out concurrently with the first mailing of course material, and was partly an attempt to gauge reaction to its receipt. This form sought to determine whether the Counselling Package had been used since 1 January, and whether the required information was contained; student anticipations regarding course content, level of difficulty and work load. Information needed but not provided by the University, anticipated changes to way of life and likely difficulties were also surveyed. Of the 307 sent out, 170 were received in time for inclusion in the analysis, and seven were returned as undeliverable.

There was throughout the study a conscious attempt to avoid imposing assumptions with regard to the anticipated responses of applicants. As a consequence all questions were open ended, and in some cases slightly ambiguous. For example, the question "Why did you enquire about taking an Off Campus Course?" is open to responses ranging from motivation to practical constraints of respondents. The relative perceived strengths of the reasons for making enquiry should provide some guide for later study.

#### Results and Discussion:

##### 1. The Preliminary Study : 1978 Cohort.

The focus of the preliminary study was of necessity directed to problems actually encountered and the ways in which the Counselling Package might be modified to avoid encountered difficulties which students had experienced. The return of 48% in this study was low, and it was not assumed that the sample was necessarily a reflection of the population. Consequently, the demographic data was not used.

The students responding to the questionnaire indicated a bias toward those attending the November workshops. Of 100 respondents, 61 had attended workshops and 54 had completed the sample of work prior to enrolling. Eighty three were still on course, of whom 9 had attended a workshop, and 10 had completed a sample of work.

There were clear and frequently stated areas of difficulty encountered, as is indicated in Table 1. Some students gave several sources of difficulty.

Table 1 : Frequency of occurrence of problems identified by students two months after commencement of courses (May 1978). 1978 cohort.

	<u>frequency</u>
study difficulties	87
preparation and vocabulary deficiencies	26
course material	25
communication	24
library facilities	21
poor self image	21
feelings of isolation	19
structure and frequency of tutorials	19
mailing problems	14
workshops	13
inability to handle level of work	2
lack of creche facilities	1

Study difficulties stand out clearly as being the most severe and wide-spread type of problem. Difficulty in absorbing and analysing material, in reading sufficient in the time available, organising study time, settling into a regular study routine and difficulty in meeting deadlines were the dominant descriptions in this category.

Difficulty in preparing essays and perceived vocabulary deficiencies, criticisms of some course material (lack of preliminary reading lists, production quality, lack of actual dates of course progress), communication (particularly in gauging whether one is coping satisfactorily) followed.

Lack of adequate library facilities and difficulties in obtaining books from the University library, poor self image (as expressed through fears of failure, feeling inadequate or inferior to other students), and feelings of isolation were reported frequently.

The suggested improvements to the Counselling Package pointed to the need for clearer information about the B.A. program's structure of course content, and standard and quantity of work involved.

One very noticeable aspect of the responses was the tendency to suggest that there was little or nothing that the University could do to help them with their problems. These were frequently seen of being internal, and only able to be solved by themselves.

The parts of the Package seen as being most useful and as least useful were sought. The students saw study techniques as by far the most useful aspect of the Package. The section dealing with making the decision to enrol was clearly not seen as the most important aspect above the rest of the material when viewed from the position of an enrolled student some eight months after receipt of the material.

This preliminary study served the purpose of identifying some of the more gross deficiencies in the supply of information and counselling to prospective students. A number of modifications were made to the Counselling Package. At this time the project was seen as dealing exclusively with that one piece of material, and no modifications were made, as a result of the findings, to the "Guide to Open Campus Programs" which had already been prepared.

2. The Main Study : 1979 Cohort.

2.1 Responses at the time an offer of enrolment was made, October-December 1978.

The following tables summarise the demographic characteristics of the 344 respondents. The most striking feature of the distribution of residential addresses is the high proportion of interstate applicants. Except for those relatively few in the Albury area, they are clearly remote from the network of study centres established by the University throughout Victoria. Every state is represented in the group, as are both the A.C.T. and Northern Territory.

Table 2 : Distribution of Residential Addresses, All Enquirers.  
1979 Cohort.

Address	Accepted Offer*	Rejected Offer#	Not Responded	Total
Melbourne	132	11	31	174
Metropolitan				
Geelong	35	6	31	62
Victorian	70	12	26	108
Non-Metropolitan				
Interstate/	70	8	26	104
Overseas				
Totals	307	37	104	448

\* includes no decision on offer

# includes deferrals.

Previous educational level of respondents accepting the offer of enrolment as shown in Table 3 suggests a considerable spread of previous formal study levels. One hundred and twelve, or 38% of the sample, have not had schooling beyond form 4, whilst seventy two, or 24% have experienced form 6 level, certification courses of technical college qualification work.

Table 3. Distribution of Respondents by Previous Highest Schooling.  
1979 Cohort.

Level of Schooling	<u>Uncertain and</u> <u>Accepting Offer</u>			<u>Rejecting Offer</u>		
	Men	Women	Total	Men	Women	Total
Primary	3	-	3	1	-	1
1st form	1	2	3	-	-	-
2nd form	4	10	14	2	2	4
3rd form	9	13	22	1	-	1
4th form	25	42	67	6	4	10
5th form	42	51	93	2	4	6
6th form	19	42	61	3	3	6
Secondary - Undefined	3	3	6	-	-	-
Trade Certificates	4	1	5	-	-	-
Services qualifications	3	0	3	-	-	-
Tech. College Certificates	5	1	6	-	-	-
Tech. College Diplomas	2	1	3	2	-	2
No information	1	3	4	1	-	1
	7	10	17	2	4	6
	128	179	307	18	19	37

If the ideology of the institution is to make University studies open to people at all levels of society, then it would appear from the occupational distribution of respondents that to date it is only partly successful. Some 65% of known male occupations among those accepting offers are in the professional, managerial or clerical groups, as are 39% of known female occupations. Over half of the women accepting offers (55%) are engaged in home duties.

Table 4 : Distribution of Respondents by Occupation. 1979 Cohort.

Occupation Type	Uncertain and Accepted Offer		Rejected Offer		Total	
	Men	Women	Men	Women	Men	Women
1 Professional	28	23	6	5	34	28
2 Managerial	14	5	1	4	15	5
3 Clerical	27	36	3	3	31	39
4 Salesmen	3	1	1	-	4	1
5 Rural Workers	2	5	3	4	5	5
6	-	-	-	-	-	-
7 Transport Workers	5	-	-	-	5	-
8 Tradesmen	14	-	-	-	14	-
9 Serv. Ind. & Police	2	5	-	1	2	6
10 Armed Forces	3	-	-	-	3	-
11 Home Dut. & Ind. Means	8	91	-	8	8	98
12 No information	11	11	3	1	14	12
13 Inadequately Described	11	2	1	1	12	3
Total	128	179	18	19	143	197

The men seeking and accepting enrolment tend to be slightly older than the women (Table 5), and the fact that they are still in the workforce is reflected in the age distribution as in the occupational description.

Table 5 : Age Distribution of Respondents.

Age in Years	Accepted Offer		Rejected Offer		Total	
	Men	Women	Men	Women	Men	Women
21 - 30:	32	56	7	2	39	58
31 - 40:	46	66	3	8	48	74
41 - 50:	33	29	5	2	37	31
51 - 60:	14	22	2	5	16	27
61 - 70:	1	3	-	1	1	4
71 - 80:	1	3	-	-	1	3
81 - 90:	1	-	-	-	1	-
Total	128	179	17	18	143	197

The use of the Counselling Package was evaluated in terms of the following criteria, assessed by its users.

1. Was it being used?
2. What parts were seen as being valuable or not relevant?
3. Did the Counselling Package help in making the decision to accept or reject enrolment?
4. What improvements should be made to it?

The response to the question as to whether the package was being read made it clear that it is overwhelmingly successful if success is measured on the criterion of being read, with 88% claiming to have read it right through.

In order to identify those parts of the package which were of use to applicants, question 2 asked for both the identification of the most useful parts of the package, and for a page by page five point evaluation, allowing for responses 'very useful, fairly useful, not relevant to me, cannot see the use of it, not read this part'. Space was available for additional comment.

Responses to the question 'If you can, identify the: most useful parts, least useful parts' brought the frequencies of response shown in Table 6, for those accepting the offer of enrolment, and Table 7 for those rejecting the offer. A number of respondents named more than one part to these items.

Table 6 : Responses of 1979 Cohort Accepting Offer to Question 2, part two (November 1978) : "If you can, identify the:

Did the Counselling Package help on Deciding?	'Most Useful Parts'				
	The Personal Touch 1	Making Your Decision 2	Study Techniques 3	All	None
Yes	40	18	75	16	6
Confirmed	24	9	31	6	
No	40	11	87	16	5
	'Least Useful Parts'				
Yes	23	25	3		74
Confirmed	10	10	1		19
No	38	40	3		51

Table 7 : Responses of 1979 Cohort Rejecting Offer to Question 2, part two (November 1978) : "If you can, identify the:

Did the Counselling Package help on Deciding?	'Most Useful Parts'				
	The Personal Touch 1	Making Your Decision 2	Study Techniques 3	All	None
Yes	2	3	8	5	1
Confirmed					
No	2	1	9	3	1
	'Least Useful Parts'				
Yes	2	1	1	0	14
Confirmed					
No	3	4	1	0	5

It is clear that overwhelmingly the most valuable part was seen to be Part 3 Study Techniques. This is true for both those accepting and those rejecting the offer of enrolment. Of the 307 respondents accepting the offer, 33% named Part 1, 12% Part 2 and 70% Part 3 as being the most useful. The parts named as being least useful were Part 1, by 23% of respondents accepting the offer, Part 2 by 24%, and Part 3 by 2% of such respondents. The information for those refusing the offer is rather weaker, as a number provided minimal information.

A number of characteristics are noteworthy. The remarkably strong acceptance of Part 3 among those who claim not to have used the Counselling Package for decision making is one: eighty-five per cent of such respondents specified this part as most useful, if we omit those replying "all". As a whole, this group tended to list parts 1 and 3 together as the most useful parts. This is consistent with the intention of part 2. If an applicant is firm in his mind as to his course of action, then assistance in decision making is not likely to be so relevant. This group markedly saw Parts 1 and 2 less useful than did the others accepting the offer of enrolment. These latter groups - those helped to make decisions, and those whose decisions were confirmed - were generally more conservative in choosing most useful and least useful parts, although the general pattern as described above is reflected with one notable variation. The group claiming to have been helped by the Counselling Package in making their decision was much more inclined to see none of the package as "least useful" in proportion to separating specific parts as being so than were either of the other two groups.

Responses to the detailed evaluation ratings on a page by page grid were obtained for respondents accepting the offer, and for those rejecting the offer. Responses were made on a five point scale, of "very useful", "fairly useful", "not relevant to me", "cannot see the use of this", "not read this part". The object of this section was to identify the specific items which were seen as being of value.

Two features stood out very clearly. For those accepting the offer of enrolment, Study Techniques were seen as clearly the most important materials. The page listing names, addresses and telephone numbers for the Dean of Students, Administrative Coordinator and Hot Line was equally important. A secondary peak appeared for the page giving a digest of contents in the Packages, and making reference to the University Handbook and Information to Students booklet.

The pattern of responses from those rejecting the offer is not greatly different in its global format, but the emphases within Parts do differ. Student comments appear relatively more useful in Part 1. Organizing time and study place, and reading seem more important in Part 3.

It should be noted that the number in this category of respondents is rather small, and the finer comparisons are consequently less stable than in the case of the respondents accepting the offer.

The final section of Question 2 asked 'In what way could the Counselling Package be improved?' Responses for those accepting the offer of enrolment are given in Table 8.

Table 8 : Responses to Question "In what way could the Counselling Package be improved?"

<u>Suggested improvements</u>	frequency accepting offer
Give more course information	25
Include structures of programs for qualifications	11
Extra information for remote students	6
More specific information	4
Explain terminology	4
Workload information	3
Include estimates of Typical Weekly Time Commitment	2
Modify information booklet	2
Reduce emphasis on Part 2	12
Include information about previous students	7
Expand information on essay writing	6
Give a gauge of academic standards	4
Expand study techniques information	4
Include information on how students find time for study	2
Reduce content	13
Bind pages	13
Put more emphasis on pre-enrolment workshops	4
Include maps of location and campus of Deakin	3
Unable to criticise package	7

It is noteworthy that the most common recommendation relates not so much to the content of the Counselling Package, but to the content relevant to the booklet 'A Guide to Open Campus Study'. The desire for more information about individual courses, and about degree program structures, workload information, terminology, and desire for other specific information all fall into this category. So too does the desire of remote students for more information in respect of their peculiar situation.

The concern about essay writing methods and standards, and the development of study techniques is reflected in that cluster requesting less emphasis on the decision making function, information about previous students and their study habits and requests for more study technique and essay writing information. Presentation changes were also relatively frequently suggested.

An option available to applicants was the attendance, for a fee of \$10, at a workshop during November. These workshops were scheduled for Geelong, Melbourne, Shepparton and Horsham. Attendance is summarised in Table 9. There is clearly a strong association between attendance at one of these workshops and the decision of an applicant to proceed with enrolment. Some respondents replied before the workshops, thus explaining the rather high 'no answer' frequency for those attending.

Table 9 : Attendance at November workshops. 1979 Cohort.

<u>Accepted offer</u>	<u>Yes</u>	<u>No</u>	<u>No Answer</u>	<u>Total</u>
Attended November workshop	100	186	4	290
Useful	78	1	21	100
<u>Rejected offer</u>				
Attended November workshop	2	33	3	38
Useful	2	-	-	2

In order to obtain an indicator of motivation for undertaking courses at Deakin, an openly worded question was phrased: 'Why did you enquire about taking an Off Campus Course?' This was done in an attempt to obtain a set of responses as little affected by researcher bias as possible. An attempt was then made to classify the replies, and Table 10 summarises the results, the number of 'no responses' in the group rejecting the offer being in part due to reply being made by letter rather than by completion of the questionnaire.

Table 10 : Responses to Question 5 "Why did you enquire about taking an Off Campus Course?" 1979 Cohort, November 1978.

	<u>Accepted Offer</u>	<u>Rejected Offer</u>
<u>CURIOSITY</u>	<u>9</u>	
Curiosity	4	
Response to Advertisements	5	
<u>PREVIOUS EDUCATIONAL CONTACTS</u>	<u>9</u>	<u>3</u>
Extension of H.S.C., C.A.E or T.A.F.E. Courses	5	2
Previous Open University contact	2	
Contact with Deakin Off Campus students	2	1
<u>PREFERENCE FOR OFF CAMPUS STUDY</u>	<u>68</u>	<u>10</u>
Preferring concept to On Campus	42	
Flexibility of time in course	4	
Off Campus best suits requirements	22	
<u>TO BECOME MORE EDUCATED</u>	<u>40</u>	<u>10</u>
<u>DESIRE FOR SELF SATISFACTION</u>	<u>50</u>	<u>2</u>
Compensation for earlier lack of opportunities	6	1
Personal satisfaction/goal/achievement	18	
Self improvement/enrichment	15	
Mental stimulation	11	1
<u>ONLY WAY OF DOING A COURSE</u>	<u>39</u>	<u>5</u>
<u>QUALIFICATIONS : TO GET A DEGREE</u>	<u>25</u>	<u>2</u>
<u>QUALIFICATIONS FOR GETTING A JOB ADVANCEMENT</u>	<u>33</u>	<u>4</u>
<u>MISCELLANEOUS</u>	<u>17</u>	<u>2</u>
<u>NO RESPONSE</u>	<u>9</u>	<u>10</u>
<b>TOTAL</b>	<b>290</b>	<b>38</b>

2.2 Responses at the time of receipt of first course material, February 1979.

The questionnaire circulated in February 1979 to the 307 respondents to the November document who accepted environment was answered in time for analysis by 170, or 55% of respondents. Responses suggest that the Counselling Package is used by new students as an information source. Table 11 summarises the degree of usage, and the material sought. A number of respondents sought more than one type of information.

Table 11 : Responses to Question 1 'Have you referred to the Counselling Package since January 1?' February 1979

Information sought	Yes N = 117	No N = 53		
		Was information adequately provided?		
	Frequency*	Yes	No	No comment
Studying & study techniques	63	60	3	
Reading techniques	11	11		
Writing essays	28	27	1	
Time commitment	2	1	1	
Resources available	17	17		
Re matters discussed at work shop	1	1		
Prescribed literature	1	1		
General	27	21	4	2

\* A number of respondents gave multiple responses to this item

The time commitment anticipated by the new students reflects the expectation of course teams preparing the study material, who work to the assumption of 10 to 12 hours per week average commitment.

Table 12 : Responses to Question 2. Anticipated weekly time commitment. February 1979

Hours per week	Attended workshop		Total
	Yes	No	
0 - 7	1	0	1
8 - 14	62	33	95
15 - 21	38	11	49
22 - 28	2	1	3
29 - 35	3	0	3
36 - 42	1	0	1
43 - 48	0	1*	1
don't know	10	7	17
	117	53	170

\* undertaking two course each semester

The responses to the query as to information not provided as summarised in Table 13 should be compared to Table 8.

Table 13 : Responses to Question 3. 'Is there any information which should have been provided, but has not so been?' February 1979.

<u>Type of information</u>	<u>frequency</u>
Give more course information	15
Give clearer information and advice about submitted work requirements	12
Earlier availability of, and advice about preliminary reading	10
Give more information about programs and future courses	7
Give clearer advice for starting courses	4
Give more library information	3
Give more information about book availability	3
Give a concise directory of University locations and telephone numbers	3
Give tutor's identity, earlier	2
Provide a list of students in the course	2
Miscellaneous	10
None	110

There is a clear emphasis, as might be expected, on the requirements and content of courses and programs, and University services' availability. Much of this material is in the province of the course teams, and cognizance should be taken of these problems in respect to the 'Guide to Open Campus Programs', 'Information for Students', and materials in the first course mailings.

Awareness of new students to changes to their ways of life were gauged, again by allowing an open response to the question 'What changes in your way of life do you anticipate as a result of undertaking an off campus course?' It is of interest to observe that the summary of responses in Table displays an overwhelming negative adjustment, if one views reduction in availability of other activities in this way.

Table 14 : Responses to Question 4. 'What changes in your way of life do you anticipate as a result of undertaking an off campus course?' February 1979.

<u>Difficulty</u>	<u>Frequency</u>
Less leisure time	45
Reduced social life	44
Reduced time for family and home' - includes likely conflict in 4	8
Less community involvement	3
Adjusting to a disciplined study routine	33
None	15
Very little	8
Increased knowledge	9
Enrichment and mental stimulation	9
Increased Awareness, broader outlook	6
Increase in effective articulation	5
Better job prospects	4
Miscellaneous	12

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\* It is not unexpected that the difficulties anticipated to some extent reflect those to the previous question. Table 15 is self explanatory. Perhaps one of the most concerning aspects concerns the elaborations provided for responses classified as 'effects on family life'. Several state that they anticipate conflict with spouses.

Table 15 : Responses to Question 5. 'What difficulties do you anticipate?' February 1979.

<u>Difficulty</u>	<u>Frequency</u>
Time allocation	56
Study routine and techniques (including problems in getting started)	37
Essay and assignment writing (including gauging depth of work required)	34
Effects on family life	17
Isolation	11
Obtaining Reference materials (including library facilities)	11
Being able to cope with load	9
Maintaining Concentration	9
Maintaining Motivation	7
Reduction in social life	6
Lack of Confidence	5
Meeting deadlines	3
Receipt of materials	3
Self discipline	2
Interaction of beliefs and content	2
Content	2
Uncertainty of future study directions	1
Possible address changes	1
Initial frustration	1
Few	1
None	17

#### Summary : Future Directions

It is clear that counselling is important in enabling applicants to reach decisions consonant with their interests. The greatest concern to these people is in regard to their capacity to write appropriate assessable work, and to study effectively.

Future investigation will attempt to identify those skills and techniques which staff assume students bring with them, and set these against those assumed by prospective students, and those actually used by students.

It has been too early to date to study the patterns in early attrition. One line of useful investigation should lead to the trialling of short (five to six week) skill development courses prior to commencement of courses. By such means early attrition may be reduced both by moving it forward to the enrolment point for some, and by reducing early frustration for those students proceeding to studies.

# **Student Attitudes at a New and an Old University**

J.S. Western  
University of Queensland

&

Ernest Roe  
University of Queensland

This paper looks at the attitudes held by incoming students in the faculties of Arts, Commerce and Economics and Science at the University of Queensland and compares them with attitudes held by incoming students in the schools of Humanities, Modern Asian Studies, Australian Environmental Studies and Science at Griffith University. It then examines attitudes of these groups of students at the completion of their three-year pass degrees. The pattern of courses at the University of Queensland and Griffith University are substantially different. Queensland University has a traditional discipline-based departmental structure while Griffith University is intentionally inter-disciplinary and problem oriented.

The paper addresses itself to the extent to which exposure to these different structures produce different patterns of attitude change.

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*Paper available from authors*

# Non-Formal Activities

Roger Landbeck  
Griffith University

The Non Formal Activities took place from 10 am to 5 pm on Sunday 13th May. They were designed to run in parallel with the discussion groups on Adult Education in the morning and to provide the complete programme in the afternoon.

The activities were designed to provide opportunities for members to present and discuss topics in an informal way. Thus 'work in progress' could be explained either to a small interest group or through posters. In the event the response was poor, only 1 poster being submitted and some activities had to be cancelled.

However, a good deal of interest was aroused by the workshop run by Dietrich Brandt on interaction in small groups. The Williams Committee 'Teach-In' also drew reasonable numbers. Another popular event was the bush walk to Griffith University which provided opportunities for people to chat informally and exchange information.

Short reports of the activities are given below.

1. Poster - "Student and Staff Views of the Goals and Teaching Methods of Tertiary Education" David Watkins Educational Research Unit, University of New England. A report of this study is available from the author.
2. Workshop 'Improving Communication in Small Groups' presented by Dietrich Brandt, HDZ Aachen, West Germany.

During the first ten minutes of the workshop 9 volunteers discussed the topic 'Multiculturalism' which Dietrich Brandt videotaped. The remainder of the participants (about 15 people) sat around the outside of the group as observers. The rest of the workshop was devoted to exploring the interactions that had occurred through videotape, opinions of the participants and the external observers. The principles that emerged were skilfully and sensitively drawn out by Dietrich who summarised them on the board.

Following a break another group was formed to repeat the exercise while the original group concluded their discussion. I found that the last half hour was particularly valuable as group members became more open with one another resulting in a very profitable discussion.

Roger Landbeck

3. Workshop 'Educational Consultancy in Practice' run by Dave Bend and Rod MacDonald.

The workshop commenced with an apology for the absence of one of the leaders. I am sure we all felt his spirit amongst us. A round of introductions followed during which each participant introduced his/herself to the group.

David gave an introductory talk in which he explained the stages through which the relationships between the consultant and the client may develop. They were:

- (1) Initial contact
- (2) Defining the relationship and the problem
- (3) Selecting a method or procedure
- (4) Gathering data
- (5) Reporting
- (6) Further action and implementation
- (7) Termination.

A discussion was then held on whether these stages were chronologically ordered or a list of processes. It was finally decided that the stages were not necessarily in chronological order.

David then outlined a possible structure for the remainder of the workshop. This involved dividing into small groups selecting one or more of the above stages and working through the following phases:

- (1) Describe incidents and examples of problematic situations relating to the stage(s) being discussed.
- (2) Identifying critical issues, and questions which should be asked at that stage.
- (3) Read a discussion paper prepared by Dave and Rod on the stage being discussed.
- (4) Produce a checklist of questions for consultants at that stage.
- (5) One member from each subgroup to report to another subgroup on that subgroup's discussion.

In the event phase two of the small group discussion was found to be of such value, that more time was spent on it than previously allocated. The final phase changed to a group discussion on each subgroup's discussion. A most valuable outcome of the workshop was the opportunity the structure of the workshop gave to participants to recount and reflect their own personal experiences. Dave and Rod are to be congratulated for initiating and conducting a most useful, worthwhile and enjoyable workshop.

Michael Prosser  
Griffith University

#### 4. Discussion - Teach in on William: Committee Report

Bill Hall (Director, Mount Gravatt CAE), Dick Johnson (ANU), Roger Swain (TAFE, South Australia) each gave a brief talk setting out their view of the Williams Committee Report and its implications. This was followed by general discussion.

5. Film - "Never Too Late" - Mature age unmatriculated students at the University of New South Wales and discussion led by John Powell

The session, which was attended by about fifteen conference participants, opened with the screening of the film Never Too Late, a thirty-minute documentary promotional film about the University of New South Wales's relatively new programme for mature age, unmatriculated students. The film is to be used for the first time as part of a one-day session to be put on by the University for prospective applicants to next year's programme.

After the screening, the group moved into quite an active discussion of both the programme itself and the effect of the film on prospective applicants viewing it. The history, aims, success, implications, etc of the programme were inquired about and discussed by the group, with some members sharing their experiences of similar programmes for mature age and/or unmatriculated students at other institutions. The group was also very interested in the characteristics and experiences of the students who had been involved in the programme, the representativeness of the students described in the film, and the possible relationship between the intended and actual effects of the film on different kinds of students.

The whole group, including those members associated with the production of the film, seemed to find the session interesting, constructive and thought-provoking and many were still discussing some of the issues raised by the session on their way down the hill to lunch.

Cherie Basilie  
Griffith University

6. Discussion - "Prior knowledge and Student Performance in 1st Year Chemistry at Tertiary Level"

To investigate the relationship between prior knowledge of chemistry and performance in chemistry subjects at first year level, commencing students were given a forty-item "readiness" test of basic chemical knowledge and principles. A further study required a group of secondary school teachers and a group of lecturing staff to rate the test items on a 1 (very difficult) to 5 (very easy) scale. Comparison of teachers and lecturers ratings of items with student performance in the readiness test indicated that (a) areas found most difficult by students are basic formula construction and recognition, basic equation writing and redox reactions, (b) students found items in basic chemistry more difficult than perceived by both teaching staff at schools and tertiary lecturing staff, (c) lecturing staff appeared to rate the items closer to student performance than did secondary teaching staff. Correlation studies between scores in test items and performance in first semester chemistry subjects showed that a large majority (50%) of significant correlations occurred for items associated with areas of basic chemistry in which students performed poorly in the "readiness" test.

In view of the findings, a number of future studies are suggested. It would seem appropriate to develop a diagnostic test of basic chemical knowledge and skills to be administered to first-year degree students. This diagnostic program would be supported by the development of suitable CAI material for remedial courses. Present studies are in this direction.

Don Litster and Serge Kokot  
Queensland Institute of Technology

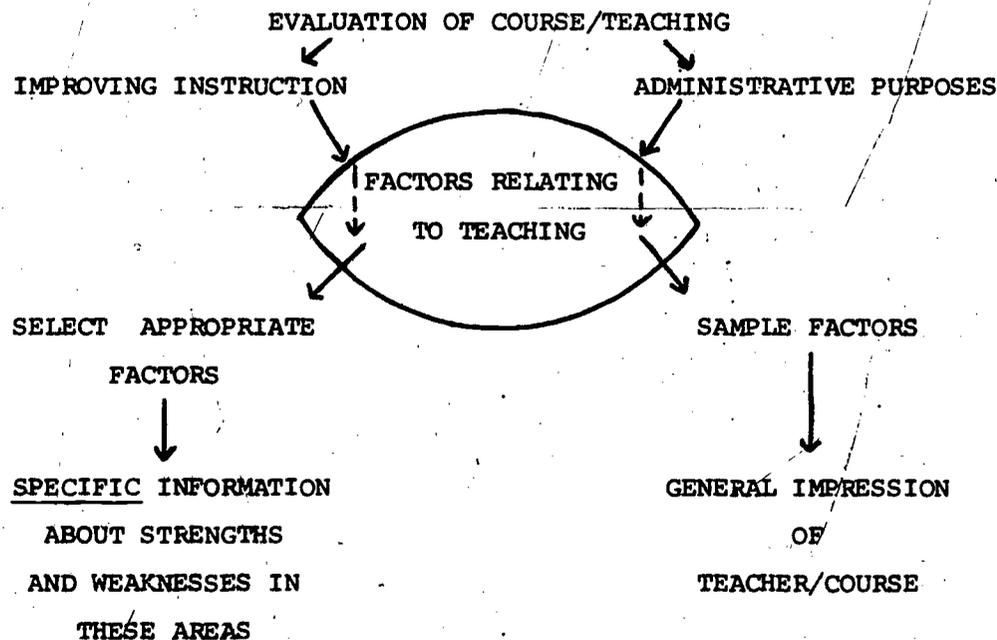
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ARE STUDENT EVALUATIONS OF TEACHING OF ANY VALUE?

Neil Paget  
H.E.A.R.U.  
Monash University

The intention during this session was to focus on some of the bases for evaluating teaching (or courses) at post-secondary level and to explore the implications of the various decisions which may be made for the use and interpretation of information from students.

It was accepted that the function of evaluation is to provide relevant data to some decision-makers with respect to some project, i.e. data they will use for decision-making. Evaluation will often be required for one of two major reasons - to improve the instructional process or to make decisions for 'administrative' purposes, often related to tenure, promotion or appointments. The diagram below illustrates the different pathways each choice offers:



It is apparent that the information required to make decisions in one area will be completely inadequate and inappropriate for decision-making in the other area. These differences are summarized in the table below:

<u>IMPLICATIONS FOR:</u>	<u>IMPROVING INSTRUCTION</u>	<u>ADMINISTRATIVE PURPOSES</u>
Questions	Specific	General
Responses	Diagnostic	Descriptive
Analysis	Particular	Additive/Comparative

Discussion focussed on the recognition of the need for evaluation instruments to be designed to take account of the fundamental purpose of the evaluation process. Student evaluations are often criticized for their doubtful reliability and validity, but as one (of many) sources of data they have a useful role to play. Teachers and educational consultants have a responsibility to ensure that both the reliability and validity of student evaluations are maximized.

A comprehensive bibliography on 'Evaluation of Teaching' was distributed to participants, and a computerized bibliographic system for producing such bibliographies was described. Further information on both is available on request.

#### Other Activities

The following activities were either cancelled or had very small numbers attending. Those interested in these topics are invited to the organisers directly.

- 1) Plagiarism - what is it and what can be done about in tertiary education. Dianne Samson, Educational Projects Officer, ESTR, Murdoch University, Murdoch, Western Australia, 6153.
- 2) 'Involving Students in Planning, Teaching and Evaluating Their Own Courses' Merv Fogarty, Department of Teacher Education, North Brisbane CAE, Kedron, Queensland, 4031.
- 3) The Use of Programmable Calculators as control devices in 'computer' managed learning. Derrick Unwin, ERDU, Queensland Institute of Technology, Queensland, 4000.

# Biographical Notes

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Former Chairman of Queensland Branch of the Australian Society of Microbiology Inc. and Branch Educational representative Dr. Coulson became interested in the finer points of teaching and education through studying for a diploma in education, tertiary level, as an external student of the Darling Downs Institute of Advanced Education.

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*From 1965 to 1970 he studied sociology with the focus on methods of social research and spent the period 1970 to 1975 working as an assistant in the department of education of the FUB.*

*He was awarded a doctoral degree in 1979 for an empirical dissertation on comprehensive schools in Germany. From 1975 to 1978 Dr. Gralki worked in a research and development project with the objective of developing a training curriculum for university teachers.*

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*His doctoral study at Syracuse University focussed upon the implications of cognitive style for instructional design, and he has written on instructional design and innovation in Higher Education. Recently he has worked as a consultant on Instructional Materials design and evaluation for Australian colleges and for a year in the U.S.A. as internal consultant on training evaluation for the B.F. Goodrich Company.*

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*TOM HEFFERNAN in 1976 received a doctorate in educational research from the University of Massachusetts. Decision making was the focus of his dissertation. Since 1976 he has helped educational enterprises in Australia to improve their planning, delivery, and evaluation of educational services. At present he is providing planning and evaluation advice for a federally funded programme in medical education. Administration and Industrial Relations are becoming two of his new areas of interest.*

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*She was awarded a W.H.O. Fellowship in Medical Education and worked at Michigan State University with Professor Lee Shulman.*

*As well as retaining her interests in microbiology Elizabeth is particularly interested in laboratory teaching in the biological sciences. Some of the research she has undertaken centres on the nature of scientific enquiry encountered in science laboratory classes.*

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*DEANE HUTTON is Head of the Educational Technology Centre at Salisbury College of Advanced Education, South Australia, guiding teaching, service and research programmes involving a staff of 19. The teaching programme includes a basic course in Educational Technology, which is undertaken by 300 teacher education students per year, and a Graduate Diploma course in Educational Technology.*

*Before joining Salisbury College of Advanced Education in 1970, Dr. Hutton was a high school senior science master in the S.A. Education Department, teaching Biology, Chemistry and General Science. In 1972 and 1973, he undertook post-graduate study in Instructional Systems Technology at Indiana University in the U.S.A., completing a Ph.D. in Visual Perception and Imagery in 1974. He has continued research in the area of Visual Imagery since returning to Australia with research grants from the Education Research and Development Committee, the Ian Potter Foundation and the Curriculum Development Centre. Currently, he is directing the Visual Education Curriculum Project - a research and development programme funded by CDC through 1978 and 1979.*

*For more than ten years, Dr. Hutton has been actively involved in educational television. He has worked as scriptwriter, presenter, educational adviser, director and producer of many instructional television programmes for children and adults. At present, he is educational adviser and co-host of the nationally-broadcast "Curiosity Show" on the Channel Nine network. In 1975, Dr. Hutton was elected foundation President of the Australian Society of Educational Technology.*

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*Along with Professor John Nisbet he is author of the chapter on staff development in the UK in the forthcoming book by D.C.B. Teather "An International Perspective on Staff Development Policies". Dr. McAleese has studied staff development in the USA and Australia and has recently undertaken consultancies for UNESCO and the British Council in Europe and Indonesia.*

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**ALLAN PITMAN** is a lecturer in the School of Education, Deakin University, and Chairman of the Introduction to Educational Research and Measurement in the Classroom course teams, both of which are offered to on campus and off campus students.

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