MATERIALS FOR ACADEMIC STAFF DEVELOPMENT:
A STUDY OF AN INNOVATION

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SUMMARY

This thesis has two themes: (1) the support of academic staff development through materials and (2) the creation and testing of two models, a macromodel and a micromodel, for the behaviour of individuals as they progress towards adoption or rejection of an innovation. The macromodel models an individual's overall innovatory behaviour, and the micromodel models his behaviour on any of the tasks associated with the adoption/rejection process.

With regard to (1) the thesis describes investigations on the basis of which a scheme was designed and implemented to support academic staff development through materials: A working group of the Society for Research into Higher Education created and field-trialled the materials, which were subsequently published by the Society.

With regard to (2) the models link the works of others. The visual and mathematical aspects of the models are based on Catastrophe Theory, which is due to Thom. The innovation stages, which are described by the macromodel derive from the work of Rogers. The micromodel is based on the work on motivation by Herzberg. Since the models are visual, the innovatory behaviour of the individual can be assessed at a glance. The models also have features which give insights and add to the understanding of the adoption/rejection process. The behaviours of the authors within the working group provided the data for testing the models.
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Chapter 1

AN ORIENTATION TO THE THESIS

1.1 Introduction

It is important to distinguish between the logical development and the chronological development of this thesis. The chronological development was constrained by events outside my control. The logical development is concerned with how I later pulled the various aspects of the work together to provide internal consistency. Both developments are described below.

1.2 The logical development of the thesis

The logical development is concerned with a study of the innovative process. It consists of:

- developing theoretical models for the behaviour of individuals as they progress towards adoption or rejection of an innovation;

- designing and implementing a scheme to test the models; and

- testing the models.

The individuals whose behaviours are being modelled are not to be confused with a change agent, who is:

"A professional person who attempts to influence adoption decisions in a direction that he feels is desirable." (Rogers 1967 p 17)

The models link the work of Rogers on a developmental theory of innovation,
Herzberg (and, incidentally, other motivation theorists) on the motivation to work, and Thorn on a topological interpretation for discontinuous change. Chapter 4 describes the creation of the models, following a survey of the literature in Chapter 3.

The scheme for testing the models was one to support academic staff development by producing materials for publication by the Society for Research into Higher Education (SRHE). Hereafter it is referred to as the 'SRHE Scheme'. Rogers and Shoemaker (1971 p 19) define an innovation as:

"an idea, practice or product perceived as new by the individual".

Accordingly the SRHE Scheme was an innovation for the authors involved with it. Their innovatory behaviour within the scheme provided the data for testing the models (see Chapter 11).

I designed the SRHE Scheme myself (see Chapter 10), on the basis of my own experiences with materials for academic staff development (see Chapter 5), together with some exploratory investigations which I began in 1979 (see Chapters 6 - 9).

1.3 The chronological development of the thesis

At the outset of my work, my intentions were to collect and systematise information which might later be of practical value for supporting academic staff development through materials. This aspect has been published in a series of papers (Cryer 1981a, 1981b, 1981c, 1981d, 1982a); these are attached as Appendix VIII. At the time I had no notion either of designing the scheme which eventually matured into the SRHE Scheme or of developing and testing models for innovation. The chronological development of the thesis is concerned with:

- gathering data with the aim of supporting academic staff development through materials;
- designing a scheme, based on that data, to support staff development through materials;
- implementing the scheme and involving individual staff developers in it;
developing theoretical models for the behaviour of individuals as they progress towards adoption or rejection; and

testing the models.

Chapter 2 argues the need for the first few of the data-gathering investigations, on the basis of a survey of the literature. I conducted the later investigations, once I had conceived glimmerings of the SRHE Scheme, because I wanted specific information in certain areas in order to implement the scheme successfully. The SRHE Scheme, as it eventually materialised out of the investigations of Chapters 5 - 9, is described in Chapter 10, which also discusses how the scheme can lay claims to being objectively new, as well as subjectively new to those involved with it. In due course I realised that I had designed and implemented something which would provide data for testing models for innovation. Chapter 3, on the basis of a survey of the literature, shows that the models serve a purpose not served by other existing models. Chapter 4 describes the development of the models from theoretical considerations, and Chapter 11 gives case studies to test them.

Chapter 12 concludes with some notes on the state of the SRHE Scheme at the end of 1982 (its achievements and how it departed, in practice, from its original design); on the validity of the models; and on further work that is opened up by the work described in this thesis.
Chapter 2

THE NEED FOR INVESTIGATIONS RELATING TO THE SUPPORT OF STAFF DEVELOPMENT THROUGH MATERIALS: A SURVEY OF THE LITERATURE

2.1 Introduction

This chapter surveys the literature on academic staff development and its support through materials. Hence it argues the need for certain investigations to obtain more information, so as to further this support. (The findings from these investigations eventually contributed to the design of the SRHE Scheme.)

After an orientation to staff development in Section 2.2, Section 2.3 surveys the literature on the background, growth and state of staff development in 1979, and hence argues that that time was appropriate for putting resources into supporting staff development through materials. Section 2.4 surveys the literature on the target audience for the materials, namely the staff developers. It argues the need to investigate their involvements and requirements. Section 2.5 surveys the literature on the nature and scope of staff development and hence argues for investigations to determine the types and subject areas of materials, with which any support should be concerned. Section 2.6 surveys the literature on the provision of materials to support staff development and hence argues the need for further investigations in the area. Section 2.7 gives a summary and conclusions.

2.2 Staff development in higher education - an orientation

A full understanding of the nature of staff development best emerges from the literature on how it operates, which is the subject of Section 2.5. The following definitions of staff development serve merely as a basis for looking at the background to, growth of and state of staff development in 1979. There is considerable similarity in them, although the literature does show much debate on their finer differences. Piper (1975):
"A systematic attempt to harmonise the individual's interests and wishes, his carefully assessed requirements for furthering his career, and forthcoming requirements of the organization within which he is expected to work."

Fox (1976a):

"A system for maintaining and increasing the effectiveness of staff - in their present roles and those of the jobs to which they aspire."

Billing (1976):

"A deliberate and continuous process involving the identification and discussion of present and anticipated needs of individual staff for furthering their job satisfaction and career prospects and of the institution for supporting its academic work and plans, and the implementation of programmes of staff activities designed for the harmonious satisfaction of those needs."

1979 saw the emergence of the term 'professional development' which grew out of a 1979 International Conference at Oxford and has since gained increasing acceptance. In 1981 this definition was accepted by the Society for Research into Higher Education (SRHE July 1981):

"Institutional policies, practices and programmes directed at the skills, knowledge and attitudes of academic staff and designed to assist them to meet more fully their own, student and institutional needs."

These definitions show staff development as concerned with all aspects of a lecturer's work, eg. management, administration, research and research supervision, as well as teaching and learning. Nevertheless, as the rest of the chapter will show, staff developers have, in practice, concentrated on the teaching and learning aspect.
2.3 The state of staff development in 1979

With the teaching and learning aspect of staff development clearly in mind, McAleese (1979) argued that the history of staff development in higher education might usefully be considered in two periods:

- no growth, until 1961;
- rapid growth, 1961 - late 1970s;

He suggested the arrival of a third period - and events since 1979 have certainly borne this out!

- reduction of resources, late 1970s onwards;

The following subsections look at these periods in more detail and hence argue that 1979 seemed an appropriate time for mounting investigations to provide further information on how materials could efficiently and effectively support staff development.

2.3.1 The period of no growth

On the basis of a survey of the history of staff development, McAleese (1979) reported that, before 1961, any training of academic staff in teaching was considered as best learnt by practice and that a person who had earned high academic distinction would necessarily be a good teacher.

2.3.2 The period of rapid growth

According to McAleese, the period of rapid growth started in 1961 with the Association of University Teachers making an approach to the Committee of Vice-Chancellors and Principals with a case for training teachers in higher education (Main 1973?). In the same year, the Hale Committee on university teaching methods began work. It reported in 1964 with a conclusion that there was a demand for guidance and help with teaching methods (Hale 1964). The Robbins Committee also was set up in 1961 and reported in 1963. It too concluded that higher education teachers should be trained, and it foresaw the advent of the 'senior colleague' (Robbins 1963). In particular it recommended the subsequent expansion of higher education.

In the following year came the report of the Brynmor Jones Committee on the Use of Audio-Visual Aids in Higher Scientific Education (Brynmor Jones 1965). It saw an opportunity to improve university teaching in a rational, systematic way, using central service units for the production, storage,
retrieval and presentation of teaching materials, and stimulating research in such areas as course development.

According to Main (1975?) the National Union of Students established a Commission on teaching in higher education early in 1967. It reported in 1969 that in-service few-day courses could not substitute for a professional training for higher education teachers.

Following the famous Woolwich speech by Crosland in 1966 (Pratt and Burgess 1974), most polytechnics were designated between 1968 and 1971, and were based on existing further education institutions. Greenaway (1978) reported that large numbers of new staff in these newly designated institutions were heavily engaged in the demanding process of designing new courses to match the new academic status of their institutions and to meet the requirements of validation by critical external bodies. The Committee of Directors was a newcomer to the scene; staff development initiatives came not from it but from grassroots sources. The demands, which were largely in connection with course design for the new upgraded courses, resulted in the formation of the Standing Conference on Educational Development Services in Polytechnics (SCEDSIP) in 1974 and in the setting up of Educational Development Units (EDUs) within the polytechnics.

In 1970 (Main 1975?) the Association of University Teachers collaborated with the Society for Research into Higher Education (SRHE) to sponsor a conference to look at training needs of teaching staff in the wake of the great expansion in student numbers and staff recruitment.

McAleese (1979) reported that in 1968 and 1970 the National Board for Prices and Incomes suggested that universities should be permitted to make a discretionary payment to staff for good teaching. The scheme failed due to fears expressed by university teachers, who doubted whether students were capable of making such judgements and were uneasy lest such a precedent might lead to further interference with teaching.

McAleese (1979) reported that in 1971 and 1972 the University Grants Committee (UGC) made a total of £130 000 available for co-operative ventures between universities and for academic and administrative staff training. Also in 1971 the Committee of Vice-Chancellors and Principals (CVCP) set up a working group under the chairmanship of Sir Brynmor Jones to consider the question of the future provision for the training of university teachers. The group welcomed the informal training which was progressively taking place but saw a need to formalise it (Brynmor Jones 1971). Recommendations included that each university should provide a 2 - 3 day induction course for new staff and that departments should support training by freeing time for training throughout the year and by nominating a senior colleague to advise and support. In addition the group proposed the setting up of a Co-ordinating
Committee to keep the training needs of university teachers under continuous review, to disseminate information, to encourage development and to offer advice to universities on the principles on which their internal training arrangements might be drawn up. According to Main (1975?) this committee, the Co-ordinating Committee for the Training of University Teachers (CCTUT) met in 1972. Early in 1973, Alex Main was appointed as the CCTUT co-ordinating and research officer. 1974 saw the ensuing agreement between the University Authority Panel (UAP) and the AUT that all new university teachers should be trained (McAleese 1979). This was tied to a salary review and was the first university initiative that was backed by authority. Most universities at least paid lip service to it.

Further evidence for the period of growth was the mounting of staff development conferences. CCTUT ran a series (Birmingham in 1976, Stirling in 1978, 1979, 1980) and SCEDSIP ran them twice annually. Greenaway and Harding (1978), following a survey, reported that:

"It is pleasing to conclude that our expectation (of positive attitudes towards staff development) was in fact supported by the evidence presented to us."

2.3.3 The period of resource reduction

The period of resource reduction crept in stealthily. It is difficult to say exactly when it began. Hints were perhaps apparent as early as 1974 when the Government announced economy measures that would mean the freezing of a substantial proportion of the funds which were to have been made available for use in connection with teaching methods (Harding 1974). Money then became progressively tighter, certain academic posts being frozen as they became vacant (Bowker 1981).

The closure of CCTUT in July 1981 was a landmark of the period. It was "deplored" by the AUT General Secretary (Sapper 1980) and described as:

"a recipe for continued inertia on the part of those universities who do little to prepare staff for their teaching responsibilities."

Furthermore, as McAleese (1979) reported, the Training Implications of the UAP/AUT Agreement were now buried and given a Benediction by the AUT. Two events dominate the period of resource reduction since 1979: the drastic change in policy over fees for overseas students in 1980 and the University Grants Committee cuts of 1981. Bowker (1981) reports that the
former resulted in a drop of overseas student numbers of 35% in the first year, equivalent to an imposed government cut of millions of pounds. The 1981 UGC cuts were very harsh indeed, as is borne witness by copies of THES in the following few months. The main features of the cuts were (THES 1981):

- a 10 per cent worsening of the unit of resource (income per student)
- The ending of the specially privileged staffing position that medicine had traditionally enjoyed
- A 3 - 5 per cent decline in the number of students by 1983 - 1984
- A substantial reduction of students in social studies mainly to reduce over-high staff-student ratios
- In science a new emphasis on 'hard' rather than 'soft' subjects.

The higher education community was taken largely by surprise by these cuts. During the following few months aspects of them were reported and discussed at length in the pages of THES which regularly quoted instances of anticipated redundancies of academic staff within the universities. Neither were the polytechnics exempt (THES 1982). Barry (1982) reported that polytechnics and colleges faced further job losses and course closures as a result of the next year's advanced further education pool allocation and the revision of figures for the present year.

It was clear from listening to staff developers at this time that they were seriously concerned for their jobs. In view of the many academic jobs in jeopardy, those in staff development seemed particularly vulnerable, because, in the short term, institutions could certainly function without this service.

2.3.4 Discussion

Although in 1979, at the outset of my work, the more drastic of the cuts in resources still lay in the future, the onset of the period of resource decline was clearly evident. Yet the literature showed no indication of staff development returning to its pre-1961 state. A much greater interest and commitment had been aroused. For the university sector, Elton and Manwaring (1979) note that in contrast to ten years before:

"Today the training and development of new staff is an accepted part of the scene, and the in-service training of established staff is beginning to be accepted."

For the polytechnics, Greenaway and Mortimer (1979) point out that the CNAA
has gone on record as placing staff development:

"in association with research - a quite different approach from that related to study leave and training in teaching methods."

In conclusion, although the decline in manpower and resources was already apparent, the enthusiasm for staff development was maintained. Manpower being a more expensive resource than written materials, 1979 seemed an appropriate time for mounting investigations to provide further information on how materials could efficiently and effectively support staff development.

2.4 The target audience for the materials

Turning now to the target audience for the materials, namely the staff developers who might be using them, Elton and Manwaring (1979) proposed a model for staff development involving interaction between three kinds of people:

1. Staff in a staff development unit. These are specialists in e.g. educational psychology or educational technology, and they can offer a course and consultancy service to departments and their staff. They may be backed up by support staff, such as for instance media specialists.

2. Certain senior staff in departments. These are experienced and thoughtful lecturers who have decided to put their creative powers at least as much towards teaching as towards research, if not more. For themselves, they look to staff development for new ideas and methods in teaching; but they also assist in the staff development of others, in general more junior staff.

3. Others, in general more junior staff. They benefit from the professional help and advice given by members of the other two groups and they in particular rely on the senior departmental colleagues mentioned above for educational matters which relate to their subject and students, while staff in the staff development
unit must assist them in the improvement of their teaching skills and a better understanding of general educational concerns."

The last group was more correctly identified in the 1981 paper (Elton and Manwaring 1981) as consisting of (a) more experienced academic staff and (b) new and less experienced academic staff. (The model has since been proposed independently by the SRHE Leverhulme Enquiry (Williams 1982)).

A general appraisal of the literature of staff development suggested that this model was accurate in principle for some institutions, but there was no data on the number of institutions in which it operated, the relative predominance of the two types of staff developers or whether they had different needs. An investigation to identify the target audience for the materials would therefore be useful.

2.5 The requirements of materials to support staff development

In order to investigate how materials could efficiently and effectively support staff development, I needed information on the nature and scope of staff development. Such information was not easily available from the literature. It needed to be teased out from writings on other aspects of staff development - for example models, aims, methods and topics, all of which tended to be used loosely and interchangeably.

Some information was forthcoming from the literature on the concern for a researched and validated model, this being a much-discussed issue in the mid seventies (see c1975 editions of Impetus). Various notions on the nature and scope of staff development were offered under the guise of models, even though the term was used differently by different authors. Harding and Sayer (1975):

"The aids-type?
The pepper-pot of experiences?
The methods market?
The fundamental questions approach?"

Bligh (1976):

"Short full-time course
Regular meetings
Country house-party

11
Sandwich course
Occasional seminar on clients' interests
Discussion of general report
Consultancy
Analysis of teaching (individuals)
Analysis of teaching (clinics)

McAleese (1975):

"1. The prescriptive model
2. The problem-directed model
3. The 'sitting with Nellie' model
4. The discovery model"

Towards the end of the 70s the concern for a researched and validated model became less discussed. There seemed to be resignation to living without one and a turn to pragmatism.

Glatter's suggestions for staff development (Piper 1975) were in the form of a grid (see Figure 2.1) and were not offered as models.

Fox (1976a) suggested that the provision should take into account the multiplicity of roles performed by academic staff. He also provided a grid (see Figure 2.2).

Several writers proposed aims of staff development. Harding and Sayer (1975) suggested eight 'guiding themes'; Piper (1976) listed seven 'implications' and Greenaway and Harding (1978) suggested the following four 'aims' which carry the essence of the other suggestions:

"i. To help staff perform as effectively as possible in their existing roles.
ii. To provide opportunities for staff to prepare themselves for changing duties and responsibilities.
iii. To provide opportunities for members of staff to equip themselves for ... career advancement.
iv. To enhance job satisfaction."

Various training methods were suggested. The following are those from the Co-ordinating Committee for the Training of University Teachers at the Birmingham conference 1976 (Bligh 1976):
organised within central or extra-department institutional organisation
planned sequences of experience consultant helps on job analysis
job rotation visits from specialists
visits from specialists workshops
courses
learning visits workshops
staff seminars courses
secondment
conferences

Fig 2.1 Glatter's suggestions for the organisation of staff development

<table>
<thead>
<tr>
<th>young lecturer</th>
<th>older professional</th>
<th>established lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>teacher</td>
<td>researcher</td>
<td>scholar</td>
</tr>
<tr>
<td>researcher</td>
<td>professional</td>
<td>counsellor</td>
</tr>
<tr>
<td>scholar</td>
<td></td>
<td>manager</td>
</tr>
</tbody>
</table>

Fig 2.2 Fox's suggestions for staff development in terms of role
Billing (1976), on the basis of the literature and replies from 42 institutions operating CNAA courses, suggested that the scope of staff development activities should include:

"initial and in-service training in educational methods and curriculum development, increasing and updating subject knowledge, training in management and committee work, exchange or secondment, study release, research, development and scholarship, creative work, consultancy and professional practice, job rotation, administrative responsibilities, retraining and deployment of staff and preparation for retirement."

With regard to the realities and practicalities of staff development, the literature lacked reports of any surveys on methods actually in use, although workers in the field would probably have speculated that those suggested at the CCTUT Birmingham conference (see above) provided an adequate framework.

In connection with staff development topics, Trickey (1977), in the light of a survey, reported that the following were on offer in polytechnic staff development courses:

"- lecturing
- small group teaching
- course design and development
- course analysis
- non-academic role of lecturers
- conduct of meetings
- interviewing
- microteaching
- interaction analysis
- counselling/personal tutoring
- academic management
- reprography
- graphic design"
He listed the following as typical seminar topics (Trickey 1977):

"- higher education scene
- aims and objectives
- educational technology and systems approach
- curriculum planning
- communication process
- interaction analysis
- nature of learning
- movement towards independent learning
- TV and film in higher education
- laboratory and project work
- student attitudes and motivation
- student success and failure
- setting and marking course work
- handling and interpreting marks
- evaluation of teaching and the curriculum, student feedback"

For the universities, descriptions of the contents of individual staff development programmes and the topics on offer were scattered throughout the literature, eg. Boyle and Georgiades (1977). A series of articles from the University of Surrey described in some detail its experience with short courses over some years (Kilty 1972; Kilty 1973; Elton and Kilty 1974; Elton and Kilty 1975).

It could therefore be concluded that the scope of staff development was wide-ranging and directly or peripherally related to the various aims. To quote Nisbet and McAleese (1979), what existed was a "rag-bag" of offerings. The literature did not provide a sufficient base for decision on the most acceptable topics for materials to support staff development, although it did indicate that a wide range of topics would be appropriate. There was a need for investigations to establish whether some topics would be more acceptable than others.
In an editorial summary of a book of readings on educational innovation, Miles (1964a) wrote:

"Materials aid the diffusion of educational innovations very considerably. The reasons for this are suggested to be the relative degree of ease with which they can be designed and altered to fit the demands of teaching situations, their ease of reproduction and distribution and their retention of substantial integrity when used by a wide variety of teachers in different situations."

Probably few people would doubt this. Certainly by 1979 the literature was not lacking in suggestions and assumptions that the creation and dissemination of materials to support staff development must be a good thing. Alloway (1975?) reported that the possibility was discussed at the 1974 Manchester conference and that:

"a considerable number of individual universities are very interested in the possibility of preparing a set of course materials on the theme of teacher training in higher education."

At CCTUT regional meetings (CCTUT 1977? p 5), the South West Region in 1975 recommended the "possibility of sharing materials", while the Scottish regional meeting in 1976 (CCTUT 1977? p 14) recorded a proposal for "a clearinghouse for information and resource materials." Piper (1975) presented material-production as a "strategy (for staff development) ... to help to organise people from different institutions to work together", and Rutherford (1975) proposed it as a tool for co-operation.

However, certainly in the short term, these suggestions and intentions appeared to bear little fruit. In 1977 Brown (1977) observed that:

"Guides on love making were and are more readily available than guides on teaching in higher education."

I found it helpful to use four broad categories for surveying the literature on the provision of materials to support staff development.
(a) individual study materials
(b) documented training activities
(c) general materials
(d) discipline-oriented materials

Materials in category (a), ie individual study materials, are primarily suitable for lecturers' individual study. They are useful for staff developers to distribute, perhaps as pre- or post-course reading or in connection with consultations. It is difficult to identify the arrival of these materials, as many materials, suitably modified, serve the purpose. In particular, industrial and management training was rich in easy-to-read pamphlet-style materials (e.g. BACIE and the Industrial Society publications). Materials in this category, produced by staff developers in the UK for UK academic staff, appeared within schemes primarily for in-house use, e.g. the Brief Introductions of the University of Bath (Harris 1978) and the Information by Post schemes of the University of Cardiff (Moss 1977) and the University of Surrey (Elton 1981a). These schemes enabled information on teaching and learning to be sent out to academic staff on request. Harris (1978) observed this as a:

"Method of staff development aimed at the person who wishes to read and consider in private without letting anyone else see or hear his involvement. The method is nearer to the normal method of learning by an academic; it uses the printed word which is a main means of communication in academic circles."

Moss's rationale was that:

"Many of the people who have come forward for the information offered have never attended any other form of staff development activity."

Materials in category (b), ie documented training activities, provide instructions and guidelines for staff developers to run activities such as workshops, games, simulations and exercises with groups of lecturers. Resources such as masters for handouts and overhead projector transparencies are oftimes also provided. By 1979 there were already various calls for this sort of material. Rice (1975?) wrote that:
"In a university ignorant of what such exercises ... have to offer, the overall provision of teaching methods courses would be lacking."

In 1978 (Mack 1979) CCTUT mounted the 1978 conference to reflect the belief that:

"there is a need to study the core features of the use of work-shop based activities in the training of university teachers."

To meet demands for such materials, SCEDSIP instigated the Trypac/Polypac scheme (Fox 1976b). Trypacs provided a system for the diffusion of materials for use on staff development programmes within polytechnics. It was anticipated that many Trypacs, following successful trials, evaluation and development would be published by SCEDSIP as Polypacs. A Trypac was a reasonably self contained teaching/learning package. It could be something as simple as a well proved way of using a commercially available film or as complex as a game/simulation. The emerging materials which numbered in single figures (Fox 1978) grew out of individual staff developer’s own needs and modes of operation. There was no attempt to tie them to a particular training model or method. Publication by SCEDSIP never became viable. In 1979 the scheme was already dying. Problems were lack of funds for publication and insufficient feedback for the materials to be improved to publication standard.

The literature had little to say on production of the documented activities of category (b) within universities, although the Staff Development in Universities Programme was on record as having produced several such materials (Piper and Glatter 1977). All were in areas related to administration.

Materials within category (c), ie general materials, are about staff development, education, teaching and learning. They provide background information and sources of ideas, and have been around since time immemorial. Within higher education in the UK, a prime mover regarding category (c) materials was the Exeter Abstract Retrieval System (TEARS) of Exeter University (Bligh 1975?). It is a computerised bibliography reference system which Bligh saw as particularly valuable because:

"Experience suggests that conservative teachers do not attend seminars or courses on teaching methods, but they do read."
Under category (c) it is worth mentioning the Australian Labyrinth scheme because its output became available in the UK around 1979. Labyrinth called itself a 'clearinghouse' Bulletin for research and development units in universities and colleges in Australia and New Zealand (Labyrinth 1979), and it listed materials which these units produced and were prepared to offer elsewhere. The materials were extremely wideranging and included "any (material) .. however ephemeral, if you think it might conceivably be of interest to a colleague." No similar scheme was running in the UK in 1979, although SCEDSIP have since launched one (Fox 1980).

Materials in category (a), ie discipline-oriented materials, were outside the scope of my work.

In conclusion, the literature lacked information on the provision within categories (a), (b) and (c) and it lacked evidence to indicate where the need was greatest. I felt that any scheme to support staff development through materials would need to start with investigations to address itself to these and related questions.

2.7 Summary and conclusions

In 1979, when I began the work with which this thesis is concerned, the literature indicated that, in that time of financial stringency, the support of academic staff development through something as cost-effective as materials would be particularly welcome. (Subsequent economic events have reinforced this contention.) However, the literature lacked sufficient information on the extent and nature of the involvement of the staff developers who would be the target audience for the materials. It also lacked sufficient definitive information on the requirements of staff development as a discipline and hence on the types of material and subject areas that would be most appropriate - and it indicated only a minimal existing support through materials. In order further to support academic staff development through materials, some investigations would be valuable, to obtain more information on these issues. Chapters 6 - 9 describe these investigations, together with some others which the eventual implementation of the SRHE Scheme seemed to demand.
Chapter 3

THE NEED FOR NEW MODELS OF INNOVATION: A SURVEY OF THE LITERATURE

3.1 Introduction

This chapter argues the need for new models for innovation on the basis of a survey of the literature.

Section 3.2 gives an orientation to innovation by showing how the term has been used by various workers. Section 3.3 discusses problems of putting order into the various aspects of innovation in the literature, and then makes suggestions in terms of categorising models as either 'systems' or 'developmental.' Section 3.4 examines some examples of models for innovation and concludes that they are generally systems- rather than developmentally-orientated. Section 3.5 goes on to discuss a particularly impressive developmental approach, due to Rogers. Section 3.6 surveys the use of models for innovation, and Section 3.7 identifies attributes which appear to make a model successful. The chapter closes in Section 3.8 with an argument for extending Rogers's work to produce a model (or models) within the developmental category, with these same attributes.

3.2 An orientation to innovation

An appraisal of the literature on innovation shows that Rogers's 1961 (1967 p 13) definition of innovation has influenced the thinking of workers in innovation. Rogers points out that it matters little, as far as human behaviour is concerned, whether or not the innovation is objectively new as long as it is perceived as new:

"(An innovation is) an idea perceived as new by the individual."

Rogers and Shoemaker (1971 p 19) modify the 'idea' to include 'idea,
practice or object' and Zaltman et al (1973 p 50) modify 'individual' to 'unit of adoption', where the adopting unit can vary from a single individual to a group or an organisation.

Miles (1964a p 14) suggests that innovations may usefully be considered as being willed or planned for, rather than occurring haphazardly.

There would also probably be general agreement with Miles (1964a p 14) that:

"Innovation is a species of the genus of 'change'."

3.3 Systems and developmental models

The literature on change and innovation tends to be bewildering in its variety and scope. For example, in just one well-known work on change (Bennis, Benne and Chin 1969) and one on innovation (Havelock 1978), all the following themes are represented: philosophies, strategies, descriptions, views, impressions, trends, historical contexts, roles, needs, impacts, tips, human relations, management, problems and solutions in specific innovations, attitudes and values. The problem of putting some order into the literature on change and innovation is made no simpler by the ambiguous and synonymous use of such terms as models, theories, paradigms, frames of reference, etc.

I found a distinction made by Chin (1961) a helpful orientation for sorting through the literature. Chin distinguishes two principal ways of classifying models of change. He calls these 'systems' and 'developmental'. Systems models assume that change is derived as a consequence of how well the parts of a system fit together or how well the system fits in with other surrounding and interacting systems. The source of change lies primarily in the structural stress and strain externally induced or internally created, and the process of change is a process of tensions reduction. Developmental models, on the other hand, centre around growth, directional change and maturation. They assume that there are noticeable differences between states at different times; that the succession of these states implies heading somewhere; and that there are orderly processes which explain progress from one state to another. Chin points out that a systems model is more appropriate to analysing how stability is achieved, whereas a developmental model is more appropriate to an analysis over time.

Lewin's theory of change can illustrate the differences between systems and developmental models. Lewin (1951) sees behaviour in an institutional setting as a dynamic balance of forces working in opposite directions within a social-psychological space. Change takes place when there is an imbalance
between the sum of the restraining forces and the sum of the driving forces. Such imbalance 'unfreezes' the pattern which alters until the opposing forces are again brought into equilibrium. An imbalance may occur through a change in magnitude of any one force, a change in direction of a force, or through the addition of a new force. The process of change consists of three main phases: unfreezing, moving and refreezing. Unfreezing occurs when the possibility for change is created; moving when there is continuous disequilibrium; and refreezing when the balance is created around a new equilibrium. Lewin's model is therefore both systems and developmental: systems in its aspects of force-field analysis and developmental in its aspects of stages of change.

An appraisal of the literature indicates that the use of Lewin's model has been overwhelmingly systems rather than developmental. As a developmental model, its three stages are rather simplistic. In practice only the first two are usually relevant for the researcher who, in the limited time available for most studies, is reluctant to regard any change as permanent (Zaltman et al 1973 p 58).

3.4 Examples of models for innovation

It is seldom possible to make distinctions from the literature between strategies for innovation and models for innovation. Where a worker develops what he calls a strategy, such as Havelock's three strategies (Havelock 1971) and the three strategies of Benne and Chin (Benne and Chin 1969), it becomes requoted as a model. Where a worker develops a model, it is invariably reprocessed as a strategy. For simplicity, therefore, I shall not distinguish between models and strategies, unless there is good reason for doing so. I shall refer to both as models.

Lindquist (1978 p 1) offers a way into discussing models for innovation, by observing that to innovate successfully:

"I create a message which I deliver in such a way that the receiver (myself, someone else or a whole organisation) accepts it and acts on it."

The statement suggests that models for innovation need to pay attention to the following aspects:
3.4 Models which stress 'the creation of the message'

Models in this subsection stress (a), ie 'the creation of the message'.

Benne and Chin's first model, the Empirical/rational model (Benne and Chin 1969) is concerned with ideas generated from research which are later spread by reasoned argument. Benne and Chin present the networks of interaction of this model - and their other two models - in rather complex diagrams. According to Hewton's simplification (Hewton 1979) the Empirical/rational model is concerned with such things as: basic research and dissemination of knowledge, applied research and diffusion of results, classification of language (creating better communication and understanding), consultancy, Utopian thinking, and personnel selection and replacement.

Havelock's first model, the Research, Development and Diffusion (R, D and D) model (Havelock 1971) is concerned with developing an acceptable message. A central agency conducts an expensive and exhaustive research and development project to study needs and problems, to come up with thoroughly tested and validated solutions. The result is mass-produced and packaged for the users to use. Havelock presents this model - as he does his other two - diagrammatically with links between components. Incidentally, the models introduce Havelock's concept of 'linkage', which is appealing for its simplicity and applicability (see Figure 3.4).

3.4.2 Models which stress 'the delivery and reception of the message'

Models in this subsection stress (b), ie 'the delivery and reception of the message'. Linquist calls (b) Social Interaction or Communication of Innovations.

In the second of Havelock's models (Havelock 1971), coincidentally also named Social Interaction, the user of an innovation is seen as a member of numerous social groups and communities through which he comes - in a quite informal way - to hear about and try an innovation. The process is a function
of the network of informal relationships.

The Normative/re-educative model due to Benne and Chin (1969) stresses (b). It focusses upon changes in attitude which occur when people are encouraged to recognise and discuss their problems openly and to participate in finding their own solutions. According to Hewton (1979) the Normative/re-educative model is concerned with such things as: improving problem-solving capabilities of the organisation, and releasing and fostering growth in personnel.

Schon offered a Centre Periphery model and a Proliferation of Centres model (Schon 1971). Both provide interaction networks showing how new notions may be communicated.

3.4.3 Models which stress 'the acceptance of the message'

Models in this subsection stress (c), ie 'the acceptance of the message and action on it'.

Havelock's third model, his Problem Solving model, focusses upon how the receiver comes to feel the need and then the willingness to change. The impulse towards innovation arises from the user's consciousness of a problem or a need. At first vague or obscure, this comes to be defined fairly precisely and the user then searches for possible solutions wherever he can find a likely source to consult. He selects and tries out the most promising ideas and validates them for himself by trial and error. The initiative lies entirely with the user; the outside change-agent is purely consultative.

Lindquist (1978 p 1) suggests a Political model which is also appropriate to (c). This dwells on this same part of the communication act, but with quite different assumptions about why the message becomes accepted.

The Power/coercive model due to Benne and Chin (1969) also considers the use of power or authority to enforce change. According to Hewton (1979) the Power-coercive model is concerned with such things as: the general use of political, economic and moral sanctions, non-violent disobedience, use of existing legal or other institutionalised procedures, and manipulation of controlling groups.

3.4.4 Models with some developmental orientation

The models described in the above subsections stress different aspects of the innovative process. They are not developmental because they do not give equal stress to each aspect, or particular consideration to sequencing. However, there are models which are principally developmental rather than systems - but they tend to be merely a sequenced list of do's and don't's for the change
agent. (Examples are Lee 1970, Havelock 1978 p 3, Rudduck and Kelly 1976.) These lists are not to be confused with the wealth of tips which are not time-sequenced. (Examples are Rogers 1967 p 284, Watson 1969, Dwyer 1977.) There is a noteworthy approach due to Rogers (1967). It is purely developmental, substantially research-backed and cannot be regarded directly as a strategy. It is discussed further in the next section, Section 3.5.

3.5 Rogers's stages: A purely developmental approach to innovation

As indicated above, models for innovation tend to be systems rather than developmentally orientated. Furthermore most have the perspective of offering strategies to the change agent. In direct contrast, it is worth mentioning Rogers's work on innovation - firstly because it is purely developmental, and secondly because it is concerned with the individuals who might adopt an innovation (which they have not designed themselves) rather than with the change agent who encourages them to adopt it.

In 1961, Rogers (1967) conceptualised stages in the mental processes of a person, progressing from first awareness of an innovation towards adoption or rejection of it. Although previous workers had either identified stages in the mental processes of adopters within their own separate disciplines (or described adoptions from which stages could be inferred) Rogers was the first person to generalise them through a review of some 500 publications from six different research disciplines. He thus identified five stages:

1. awareness
2. interest
3. evaluation
4. trial
5. adoption.

Rejection could of course take place at any one of these stages.

The following is my summary of the characteristics of Rogers's stages (Rogers 1967 pp 81-86):

1. At the awareness stage the individual is exposed to the innovation, and aware of it, but lacks complete information. He is not yet motivated to seek further information. The primary function of the awareness stage is to initiate the sequence of later stages that lead to the eventual adoption or rejection.
2. At the interest stage, the individual becomes interested in the new idea and seeks additional information about it. He favours the innovation in a
general way, but has not yet judged its utility in terms of his own situation. The function of the interest stage is mainly to increase the individual's information about the innovation. He is more psychologically involved than at the awareness stage. Whereas he had then listened or read about it, he now actively seeks information about it. His behaviour is not definitely purposive. His personality and values, as well as the norms of his social system may affect where he seeks the information as well as how he interprets it.

3. At the evaluation stage the individual mentally applies the innovation to his present and anticipated future situation and then decides to try it if he feels the advantages outweigh the disadvantages. The evaluation stage is probably the least distinct of the five adoption stages and empirically one of the most difficult about which to question respondents. It is important because the innovation carries a subjective risk to the individual. He is unsure of its results and so needs reinforcement to convince that his thinking is along the right path. Information and advice from peers is likely to be sought at this point.

4. At the trial stage, the individual uses the innovation on a small scale in order to determine its utility in his own situation. The main function is to demonstrate the new idea in his own situation and determine its usefulness for possible complete adoption. The individual may seek specific information about the method of using the innovation.

5. At the adoption stage, the individual decides to continue the full use of the innovation. The main function of this stage is consideration of the trial results and the decision to ratify sustained use of the innovation. Adoption implies continued use of the innovation in the future.

Although all researchers have agreed on the existence of stages, and that adoption is seldom an 'impulse' decision, they have not agreed on the number of stages or on the characteristics of each stage. According to Rogers (Rogers 1967 p 80); in 1958 Emery and Oeser, and Wilkening used three stages; in 1943 Ryan and Gross used four; in 1953 Wilkening also used four; in 1955 the North Central Rural Sociology Subcommittee used five; so did Beal and others in 1957; and Copp and others in 1958; in 1961 Steiner postulated six. Indeed Rogers, with Shoemaker (1971), modified his five stage model to one of four stages, which were renamed phases. The conceptualisation of innovation stages has also been refined and extended to adoption by adoption units such as groups and organisations, as well as individuals. Figure 3.1 and Figure 3.2 respectively show the state of stage-conceptualisation for individuals and organisations, as reviewed by Zaltman et al (1973 pp 61,62). Scrutiny suggests, however, that the stages are less different than may appear. Differences are essentially in name only since, for example, 'purchase' is more appropriate than
Fig 3.1 Summaries of individual-orientated models of the innovation process (from Zaltman 1973 p 61)

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<td>1. Conceptualization</td>
<td>1. Idea generation</td>
<td>1. Evaluation</td>
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<td>2. Tentative Adoption</td>
<td>2. Adoption</td>
<td>2. Initiation</td>
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<td>4. Implementation</td>
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<td>4. Routinization</td>
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<td>5. Institutionalization</td>
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<th>Wilson (1966)</th>
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<td>1. Conception of the Change</td>
<td>1. Initiation stage</td>
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<td>2. Proposing of change</td>
<td>1. Knowledge-awareness substage</td>
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<tr>
<td>3. Adoption and Implementation</td>
<td>2. Formation of attitudes toward the innovation substage</td>
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</table>

Fig 3.2 Summaries of organisational models of the innovation process (from Zaltman 1973 p 62)
'adoption' when the innovation concerns buying.

Zaltman et al (1973 p 58) conclude that most theorists terminate their analyses at the stage of initiation of the innovation, i.e. the point either where the new idea has become legitimised by powerholders of the unit or where the decision has been made to implement the new idea. This corresponds to the end of Lewin's second stage (before his third) and the end of Rogers's fourth stage (before his fifth).

Rogers's model of stages appealed to me for two main reasons:

- Little work had been done to confirm, refute or otherwise investigate Rogers's work within British higher education and education generally (see Section 3.6); and

- As coordinator and editor of the SRHE Scheme, I had gathered data which put me in a position to validate the existence of stages. The individuals would be the SRHE authors.

3.6 The use of models for innovation

The purpose of this section is to show that systems models have been used substantially more often than developmental ones to interpret research on innovation. Since the literature on innovation is so vast, examples are offered from just two sections of the community: higher education and education generally. However, an appraisal of the more general literature on innovation supports the same conclusion.

3.6.1 The use of innovation models within higher education

Much of the literature on innovation in higher education in Britain reflects the wisdom, understanding and experiences of individuals; it seldom reports and interprets research. Attempts at theoretical interpretation, where they are not superficial, tend to be systems-orientated. There is little or no work with developmental models.

For example, several books of inter-disciplinary case studies are published under titles suggesting a theme of innovation. One is the collection of conference papers for the Society for Research into Higher Education (SRHE) conference on Innovation in Higher Education (Flood Page and Greenaway 1972). The conference took two shapes: discussions of innovation as an idea,
with associated appraisals of implementation of innovations, and descriptions of recent innovations. These are reflected in the conference papers. There is no attempt at theory formulation and the papers are generally so constructed that they are not suitable as a basis for theory formulation.

Sheldrake and Berry (1975) illustrate and discuss two practical approaches to research into educational innovation. Similarly Armstrong’s collection of papers (Armstrong 1978) reflects the views and experiences of the authors, but touches on no theory of innovation or change.

Other examples are the proceedings of the seminar on Innovation and Improvement in Teaching and Learning in Higher Education. In the preface (O'Conchobhair 1977) the aims of the seminar are given in terms of understanding the impact of developments in educational technology upon higher education and assessing the claims of related economic savings. The papers are correspondingly concerned with discussion and description, but not theoretical interpretation.

A book of case studies edited by Collier (1974) goes some way towards a theoretical interpretation, in that Collier suggests that the reader look at the studies bearing in mind the innovation models due to Havelock and Schon. However, the authors do not seem to have had this in mind while they wrote, as they do not frame their writings to facilitate this or any other theoretical interpretation. Collier offers no models other than the three due to Havelock and the Centre Periphery model due to Schon - and does not justify this choice. He states, without supporting evidence, that

"Schon’s Centre Periphery model rules the thinking of many people in higher education."

A little support for Collier’s choice of models is to be found in the articles on innovation in a book of papers edited by Entwistle (1976). The only reference to innovation theory is by Dalin (Dalin 1976) who quotes these four models.

The Nuffield Group for Research and Innovation in Higher Education may be said to have conducted research into innovation in higher education, but their orientation was pragmatic rather than theoretical (Nuffield 1975). Its stated focus was to locate, study and document new developments in higher education: what they were; how they began; their range, scope and rationale; the problems that they were designed to combat; the difficulties they ran into; and the benefits that accrued; also to look broadly at how institutions foster and promote new approaches; at the countervailing forces within the academic works that make changes in teaching a hazardous enterprise. Elton’s article on change in universities (Elton 1981b) interprets change according to the systems approach, and Caston (1977) is concerned with interactions according to the
Impressive works of research and theoretical interpretation of innovation in higher education come from outside the UK. One comes from Sweden (Berg and Ostergren 1977 and 1979) and is available in English. The authors have a firm and wide grasp of the theory of innovation in and outside education. Whereas they are clearly familiar with systems and developmental models, they firmly opt for a systems model to interpret their findings, namely Lewin's force-field analysis. They state their intention as being to analyse the various processes by describing the interaction between parts of a system and not as being to analyse the stages of the adoption process over time. They also utilise Havelock's concept of linkage (but not any of his three models) to show diagrammatically the associations of persons or institutions within the innovation system.

Some impressive works on innovation come out of the USA. Schein's work (Schein 1972) on professional education has a chapter devoted to change. It opts entirely for Lewin's systems approach. Martorana and Kuhns (1975), also opt for a systems approach, and Lindquist (1978) utilises Havelock's concept of linkage.

3.6.2 The use of innovation models within education generally

There is a larger body of literature on innovation in British education generally. However, as with higher education, there is much wisdom, understanding and experience of individuals, but little reporting and interpreting research. The models which I have been able to find have been those described in Section 3.4, invariably reprocessed as strategies (eg, Martin 1975, Whitehead 1980).

Rudduck and Kelly (1976) offer a developmental orientation - but as a strategy for the change agent. This should not be confused with Rogers's stages, which are stages in the mental processes of a person progressing towards adopting an innovation which already exists.

Some of the well-known literature on innovation in education in general comes from the USA but most of it, too, lacks much on the developmental approach. Miles (1964b) edited a book of readings on educational innovation. The one theoretical analysis was in terms of social interaction. Miles (1964a p 20) does refer to Rogers's stages in his introduction. He points out that Rogers was mainly considering the adoption of existing, i.e. already designed, innovations such as the use hybrid rather than natural corn, and he suggests that a design stage should be included in studies on Rogers's stages. It is a pity that Miles used the word 'stage' for this suggestion, because it implies a lack of understanding of Rogers's work. In Rogers's terms, the design stage
cannot possible precede the awareness stage, because it cannot be part of the mental processes of the potential adopter.

Havelock's (1978) Change Agent's Guide to Innovation - also from the USA - does just what its title suggests, namely gives tips on strategies for change agents. It does mention stages but from a different perspective than Rogers's, namely stages through which the successful change agent should pass, rather than stages in the mental processes of potential adopters.

3.6.3 Discussion

The question arises of whether the success of the systems approach is due to it being more appropriate than the developmental approach, or whether it merely offers models that can more readily and usefully be applied. In some cases, the answer must be the former. However, in other cases, it is almost certainly the latter. Sophisticated developmental models are lacking - and one approach to their creation is the subject of Chapter 4. As a precursor, the next section, Section 3.7, attempts to identify attributes that such models ought to possess in order to be successful.

3.7 Characteristics of successful models of innovation

According to the literature on innovation, Lewin's force field model - as a systems model - is probably the most popular for presenting and interpreting research data. It is worth speculating on the attributes that make it so successful. I believe that they are as follows:

- the model is visual

  - hence the reader can appraise the main features of what is being modelled, at little more than a glance

  - hence the model provides a shorthand description of what might take pages of writing

- the model highlights the principal features of what is being modelled
the model can be redrawn to represent individual innovations, so highlighting the differences between innovations

- the model gives insights into the nature the innovation process

- the model allows qualitative prediction, ie it suggests that some event will take place, but not when or at what magnitudes of the controlling factors.

Figure 3.3 shows an application of Lewin's force field model and clearly exemplifies these attributes. Figure 3.4 is an application of Havelock's concept of linkage, which also seems popular, and appears to have similar attributes. It is probably true that no developmental model exists with all these attributes.

3.8 Extending Rogers's stages to a more sophisticated model of innovation

Chapter 4 describes how I created developmental models for innovation - a macromodel and a micromodel - with the attributes described in Section 3.7. They model the behaviours of individuals progressing towards adoption or rejection of an innovation which they have not designed themselves. The models link the work of Rogers with that of Thom on Catastrophe Theory (Thom 1975) and Herzberg on motivation at work (Herzberg et al 1959, Herzberg 1966). This approach is almost certainly new. Firstly the literature on Catastrophe Theory is only about ten years old and is sufficiently small to survey easily, and secondly the Social Science Citation Index gives no references in which these workers are quoted together.
Fig 3.3 An application of Lewin's force field analysis showing attributes which make it a successful model
(from Berg and Ostergren 1977 p. 48)

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Fig 3.4 An application of Havelock's concept of linkage showing attributes which make it so successful for modelling innovation
(from Berg and Ostergren 1977 p. 65)
Chapter 4

THE CREATION OF DEVELOPMENTAL MODELS FOR INNOVATION

4.1 Introduction

This chapter describes my thought processes in developing theoretical models for the progress of a person through Rogers's stages of innovation. There are two models:

- The macromodel, which models an individual's overall behaviour over the entire adoption/rejection process;

and

- The micromodel, which models in more detail a person's behaviour on any of the various tasks which make up the innovatory behaviour.

The models are based on Catastrophe Theory. Therefore the next section, Section 4.2, gives a brief introduction to Catastrophe Theory. Sections 4.3 - 4.7 are concerned with aspects of developing the models, and Section 4.8 discusses the insights and understandings which the models give to innovatory behaviour. The chapter closes with some concluding remarks in Section 4.9.

4.2 A brief introduction to Catastrophe Theory

This brief introduction to Catastrophe Theory is based on the works of Zeeman (1977), Woodcock and Davis (1980) and Postle (1980).

The application of traditional mathematical techniques of analysis - in particular those developed from the Newtonian calculus - have been limited to processes that are relatively continuous. Catastrophe Theory is a mathematical way - based on topology - of dealing with sudden changes. Examples of these include: the point at which a wave breaks, a cell divides, a beam collapses
under stress, etc. These sudden changes are called 'catastrophes'.

Catastrophe Theory was created by Rene Thom (Thom 1975). He shows that all discontinuities that occur in nature, providing the processes to which they are due obey certain conditions, fall into one of seven types. He calls these forms the 'elementary catastrophes'. The remarkable thing about them is that, although the proofs are sophisticated and outside the scope of this thesis, the elementary catastrophes themselves are both enlightening and relatively easy to understand. This means that they can be profitably used by people who are not expert mathematicians.

The elementary catastrophes are the seven simplest ways for catastrophes to occur in systems. They can be illustrated by graphs that show the stable states of a system as sets of points, which constitute lines or surfaces in a behaviour space determined by a number of control factors. As the system changes its configuration under the influence of these factors, the point which represents its stable state moves in the line or surface. As long as those points remain on this line or surface, the change of behaviour is continuous - but when they leave the line or surface, the system becomes unstable and returns to a point on the line or surface, sometimes at a point far distant from the initial point. This is best explained by using one of the seven catastrophes as an illustration (see Section 4.2.1).

4.2.1 The cusp catastrophe

The cusp catastrophe seems to be the catastrophe most often used in the behavioural sciences, and it is the one which is the basis of my macromodel for innovation (see Section 4.4). It occurs in systems whose behaviour \( x \) depends on two control factors with axes in a plane \( C \). The graph of the cusp catastrophe is three dimensional (see Figure 4.1): a curved surface with a pleat. Every point of the surface \( M \) represents an equilibrium state. All the points along the fold line, which forms the lip on the pleat are semi-stable states, and the points on the underside of the pleat are unstable states. The rest of the points are stable states. For certain combinations of values of the control factors there are two possible stable states, one on the upper surface of the pleat and one on the lower surface beneath the pleat. The behaviour of the system under these conditions is bimodal, meaning that the same conditions permit either of two stable states. There is a third possibility on the underside of the pleat, but this is generally inaccessible, ie it is the unstable state which always occurs between two stable states.

The five characteristic properties of the cusp catastrophe are:
Fig 4.1 The cusp catastrophe

Fig 4.2 A characteristic of the cusp catastrophe: divergence
- bimodality
- inaccessibility
- catastrophe
- hysteresis
- divergence

The first two were explained above. The other three are best explained with reference to Figures 4.2 and 4.3.

Imagine the conditions changing with time so that the system's behaviour changes. All smooth changes can be visualised as points moving along the surface M. Consider two points close to each other at the far edge of the surface (that nearest the axis of control factor 1 in Figure 4.2). They represent systems at the same value of control factor 2, but at slightly different values of control factor 1; they are side by side, one a little higher than the other. If the value of control factor 2 increases, the points move forwards towards the front of the surface, tracing parallel paths. If both of them pass on the same side of the pleat, the behaviours of the two systems remain similar - but if one travels onto the surface beneath the pleat, while the other travels onto the surface above the pleat, then the behaviours of the systems are 'divergent'. The paths begin close together, they undergo the same change of conditions, but at the end of that change, they are far apart in behaviour. The path that a point takes depends on the value of control factor 1 as the moving point passes the beginning of the pleat.

Such divergent paths are smooth (non-catastrophic) changes in behaviour. Catastrophic, i.e. 'discontinuous' changes, occur when a point moving to the left or right reaches the lip of the pleat. Figure 4.3 shows examples: the system can pass smoothly from A' to C' and back, from A' to B' and back, from B' to E' and back. However, if the system is at C' and control factor 1 is decreased, then when the point D' is reached, there is nowhere else to go. What was stable has become semi-stable, and any further decrease in control factor 1 obliges the system to jump to the only stable state left, the one at E'. It passes as quickly as possible through the non-equilibrium states, between the upper and lower sheets of the behaviour surface. The transition is a catastrophe. A similar jump occurs if a system at E' is altered by an increase in control factor 1: it moves to F', then has to jump catastrophically to C'.

Figure 4.3 shows that it is possible to get from C' to E', for example, either smoothly or via a catastrophe. Which will occur in any particular case depends on the sequence and the degree of the changes in the control factors. If a system is at point C', and control factor 1 alternately decreases and increases by a suitable amount, the result is a cycle of behaviour with two smooth portions linked by catastrophes. Such a cycle is called a hysteresis cycle.
Fig 4.3 A characteristic of the cusp catastrophe: hysteresis

Fig 4.4 The bifurcation set of the cusp catastrophe
cycle. Hysteresis is a phenomenon which is well-known in the physical sciences as the lagging of one property behind another when the original conditions are reset.

The projection of the fold curve down onto the horizontal plane C is called the bifurcation set. It is shown in Figure 4.4.

In some applications of the cusp catastrophe, it is appropriate to take the axes of the two control factors to lie on either side of the cusp, such as alpha and beta in Figure 4.5; they are then called conflicting factors. In other cases one of the control factors is taken to be perpendicular to the cusp axis and the other along it, such as a and b in Figure 4.6. Then a is called the normal factor because, at low values of b, x increases continuously (or normally) with a; and b is called the splitting factor because, as b increases, the behaviour surface is split into two sheets.

The origin of coordinates is arbitrary from the point of view of using the cusp catastrophe (and the other catastrophes) to interpret behaviour. Because the foundation of the theory lies in topology, the surface may allowably be distorted. Descriptions and predictions are thus not quantitative. Instead they are rather like maps without a scale: they show that things exist but not where they are. Although these are limitations, the theory is well suited to describe and even to predict the shapes of processes.

4.2.2 The butterfly catastrophe

After the cusp catastrophe, the butterfly catastrophe is the most important catastrophe for the behavioural sciences. It is the basis of my micromodel for innovation (see Section 4.6). For the butterfly there is one behaviour variable x and four control factors as follows:

a : normal factor
b : splitting factor
c : bias factor
d : butterfly factor

The behaviour lies on the behaviour surface in 5 dimensions. Since it is impossible to draw 5 dimensional pictures, 2 and 3 dimensional sections have to suffice. The bifurcation set lies in the 4 dimensional control space.

The bias factor and the butterfly factor have quite dramatic effects. The effect of the bias is best explained by considering the case when the butterfly factor, d, is less than zero. Figures 4.7 (i) (ii) and (iii) show 2 dimensional sections of the bifurcation set, parallel to the plane containing the axes of the control factors, for different values of c. When c < 0, the cusp becomes
Fig 4.5 Conflicting factors

Fig 4.6 Normal and splitting factors
Fig 4.7 The effects of bias on the bifurcation set
(modified from Zeeman 1977 p 31)

Fig 4.8 The effects of bias on the behaviour surface
deeper and swings to the right; when c is zero, the section reduces to that for the cusp catastrophe; and when c > 0, the cusp becomes deeper and swings to the left. The bias also affects the behaviour surface by moving it up and down: positive bias lifts the surface and negative bias lowers it. This is shown in Figure 4.8 for less extreme values of c > 0 and c < 0.

The effect of the butterfly factor is to produce trimodality, (rather than bimodality), ie to produce a new stable sheet in the behaviour surface for d > 0. Figure 4.9 (i) (ii) and (iii) show sections of the bifurcation set, parallel to the plane containing the axes of the control factors, for the butterfly factor d > 0 at c < 0, c = 0, and c > 0. Figure 4.10 shows the behaviour surface with c = 0, ie corresponding to (ii) in Figure 4.9. The third mode is most easily seen in Figure 4.11 which shows a section through the behaviour surface. Incidentally, viewed upside down, Figure 4.9 (ii) is said to resemble a butterfly, and this is why the butterfly catastrophe is so named.

### 4.2.3 Other catastrophes

The other five of the seven elementary catastrophes are: the fold, the swallowtail; and the hyperbolic umbilic, elliptic umbilic and parabolic umbilic catastrophes.

The fold catastrophe is the simplest of the seven elementary catastrophes; it represents the behaviour of all systems dependent on one single varying condition, or control factor - but its meaningful applications are limited, since there are only a few things that can happen in such a system, all of them obvious. For example, the behaviour of a ball thrown vertically upwards is a fold catastrophe - and it is well known that the ball merely slows down, stops and returns.

The swallowtail is simpler than the butterfly and has 3 control factors, but it is not very useful in that behaviour is unstable over very wide ranges of the control factors. The hyperbolic umbilic, elliptic umbilic and parabolic umbilic are too complex for this brief introduction.

### 4.2.4 Problems with using Catastrophe Theory

Catastrophe Theory's passage from pure mathematics to detailed application has been much swifter than is usual for a new theory. In the circumstances it is not surprising that a strong backlash occurred.

According to Woodcock and Davis (1980 p 73), the controversy surrounding Catastrophe Theory is based on four arguments:
Fig 4.9 The effects of the butterfly factor on the bifurcation set
(modified from Zeeman 1977 p 31)

Fig 4.10 The effects of the butterfly factor on the behaviour surface
Fig 4.11 The third stable mode of the butterfly catastrophe
(1) Over the theory's foundations in natural philosophy. It is so general and non-quantitative, that it can be made to fit almost any set of data.
(2) Over the assumptions needed to apply it. There is the controversy over whether real situations can be represented by a limited number of control factors.
(3) Over the details of specific applications. For example, there is the accusation that in some cases data have been twisted, and concepts - such as 'agression' - left so ill-defined, that it amounts to intellectual dishonesty.
(4) Over the attitudes and the style, even the intellectual honesty of the theory's advocates and opponents.

4.3 Using Catastrophe Theory to model innovatory behaviour

My interest in Catastrophe Theory started as nothing more than an intuitive feeling that the work of Thom and Rogers ought to be able to be linked. Thom's work provided a means of describing progress with the possibility of a catastrophic jump between modes of behaviour, and Rogers's work described a person's progress towards adoption of an innovation with the possibility of the discontinuity of rejection. There were points in common; so I wondered whether Catastrophe Theory might be applicable to the innovatory process.

I saw the purpose of linking the works of Thom and Rogers as creating a shorthand description of a person's progress from awareness of an innovation to adoption or rejection, a visual model by which a person's innovatory behaviour could be assessed at a glance. I saw this, even alone, as of value, although I did not lose sight of the fact that if the model could provide insights into the innovation process, its value would be greatly enhanced.

Of Woodcock and Davis's criticisms (see Section 4.2.4) (1) caused me little concern. As long as the models could describe innovatory behaviour and provide insights into it, I did not feel that it mattered that they were not quantitative.

(2) also caused me little concern. All models simplify reality, and whether the extent of the simplification is acceptable is always in question, irrespective of whether the models are based on Catastrophe Theory.

(3), however, was one of my major concerns. I found it a provocative and time-consuming task to select and define control factors appropriate to my purpose. A particular problem was that if parameters are to serve as control factors for a Catastrophe Theory model, it must be possible for one control factor to affect the behaviour of the system without another control factor necessarily changing. It may change, but it must be possible for it not to.

Another problem - inherent in modelling innovation developmentally, rather
than in Catastrophe Theory - was that of sequencing. Just as a person cannot progress satisfactorily through the chapters of a book without the passage of sufficient time and cannot instantly reach the last page, however optimum the appropriate control factors, so he needs time to progress through the stages of an innovation. However, although the passage of time is a necessary prerequisite for adoption to take place, it is by no means sufficient. Given time in abundance, some people never reach the end of a book.

4.4 A macro developmental model for innovation using Catastrophe Theory

My first step in creating a catastrophe model for a person progressing through Rogers's stages was to try to find control factors, that would be appropriate for:

- a person's innovatory behaviour; and
- the simplest of the catastrophes, the cusp catastrophe.

I considered a number of possibilities which seemed quite attractive at first sight: needs, values, interests, enthusiasm, milieu, advantages, disadvantages - to name just a few. However, as mentioned above, I continually met the problem of sequencing. None of these control factors would be suitable because they might conceivably not change during the entire innovation process. Then, even though an individual might be progressing towards adoption in practice, the model would not allow him to move over the behaviour surface. I briefly considered taking 'time' as a control factor, because I thought that this might move the person forwards, but I had to reject this too, because, although 'time' was necessary for completing the adoption process, it was not sufficient. What I needed was a control factor which, as it increased, would push the individual towards adoption.

Eventually, a rather obvious solution occurred to me. By taking one of the control factors as 'stage of innovation', the individual would travel over the behaviour surface quite automatically as he progressed through the stages of the innovation. Since rejection would be increasingly more likely to be catastrophic the further he progressed with the innovation, this control factor would serve as the splitting factor.

I needed something to serve as a normal factor. Not only did it need to reflect the other causes of the innovative behaviour; it also had to allow movement over the behaviour surface, independently of the other control factor. I felt that the individual's perception of the environment for the
innovation fulfilled these conditions. Being so comprehensive, it necessarily
encapsulated all the other causes of the innovatory behaviour. Furthermore, it
was quite possible for this 'perceived total environment' to change without the
stage of innovation necessarily changing, and for the 'stage of innovation' to
change without the 'perceived total environment' necessarily changing.

This Catastrophe model is shown in Figure 4.12. The cusp point is at the
evaluation stage, it being reasonable to assume that this is the latest stage at
which smooth rather than catastrophic rejection can take place. I decided to
call this model a 'macromodel', because it would model only the overall
behaviour of a person within an innovation. For its purpose it would be useful,
and it would indicate where it would be interesting to look at the behaviour
more closely - but it would not be adequate for looking more closely. I needed
to develop a micromodel which would allow me to look at behaviour on the
various tasks associated with the innovation and to distinguish between the
various effects of what I called the 'perceived total environment'. Neither the
normal nor the splitting factors for this micromodel could be the same as for
the macromodel. As the micromodel would be dealing with behaviour at a
single stage or during the transition between stages, the splitting factor could
not be 'stage of innovation'. Also, since the micromodel should distinguish
between the various effects of the environment, 'perceived total environment'
could not be the normal factor.

4.5 Catastrophe Theory for interpreting behaviour on an
isolated task

As a first step in developing a micromodel which would model any of the
tasks comprising the total innovatory behaviour and which would distinguish
between the various effects of the environment, I decided to work towards
developing a Catastrophe model for behaviour on an isolated task.

Interpreting human behaviour requires reference to the abundance of
theories of motivation. The problem was that motivation theorists have
normally concentrated on identifying factors affecting man's behaviour, but
have made no claim that these affect behaviour independently. For example,
comparatively recently, Handy (1978) made a theoretical attempt to pull
together the various motivation theories, basing his ideas on the works of
Lewin (1944), Tolman (1955), Edwards (1955), Georgeopoulos (1957) Vroom
(1964) and Atkinson (1966). According to Handy, a person's behaviour requires
his having made a 'motivational calculus' which depends on the following three
factors:
Fig 4.12 The macronodel for an individual's behaviour in an innovation

Fig 4.13 A catastrophe surface for behaviour on an isolated task
'Needs' which represents the salience of the individual's need.

'Instrumentality' which represents his perception of the extent to which the action or activity will reduce or satisfy the need.

'E factors'.

'E' factors include the other factors that Handy identified as influential. They relate to the personality of the person and the environment in which he finds himself. Coincidentally, they can be represented by words which begin with E - hence Handy's name for them. Examples are effort, excitement, enthusiasm, emotion, expenditure of time, expenditure of money. The motivational calculus is the mechanism - conscious or unconscious - by which an individual decides subjectively how much E to expend on a particular action or activity. It is multiplicative, i.e. if one of the factors is zero, then the individual does not perform the activity. Handy argues merely that needs, instrumentality and E factors are important for understanding human behaviour, but not that they affect behaviour independently. Consequently they cannot serve as control factors for a Catastrophe Theory model.

Fortunately one theory of motivation offered a way round the problem. This theory is due to Herzberg et al. (Herzberg, Mausner and Snyderman, 1959) who mounted a study based on the hypothesis that man has two sets of basic needs - his animal needs, which relate to the environment and his distinctive human needs which relate to the tasks with which he is uniquely involved.

In the study two hundred engineers and accountants, who represented a cross-section of Pittsburgh industry, were interviewed. They were asked about events they had experienced at work which either had resulted in a marked improvement in their job satisfaction or had led to a marked reduction in job satisfaction. The conclusion was that factors which dissatisfy can be distinguished from those that satisfy. Interestingly they are not the opposite of each other. However much the dissatisfying factors are dealt with, they can never be turned into satisfying ones. Even the total absence of dissatisfying factors does not lead to satisfaction, and conversely. It turned out that the dissatisfiers stem from man's animal disposition and are centred on the avoidance of loss of life, hunger, pain, sexual deprivation and on other primary drives, in addition to the infinite varieties of learned fears that become attached to these basic drives. According to Herzberg the satisfiers relate to man's compelling urge to realize his own potentiality by continuous psychological growth.

With acceptable dissatisfier factors, a person will stay within the work organisation; with them unacceptable, he will leave the work organisation.
Dissatisfier factors do not, however, affect how enthusiastically he works within the organisation. Since the dissatisfier factors essentially describe the environment and serve primarily to prevent job satisfaction, while having little effect on positive job attitudes, they were named hygiene factors. This is an analogy to the medical use of the term meaning 'preventative and environmental'. Just as good medical hygiene keeps a well person well, but does not make an ill person well; so, with Herzberg's meaning, good hygiene factors keep a person within the organisation, but do not make him work. Another name for these factors is maintenance factors. The major hygiene factors were company policy and administration, supervision, salary, interpersonal relations and working conditions. The satisfier factors were named motivators, since other findings of the study suggested that they are effective in motivating the individual to superior performance and effort. Five factors stood out as strong motivators - achievement, recognition, work itself, responsibility and advancement. Implicit in these is Handy's instrumentality, since it must be the prospect of many of these factors which motivates rather than the existence of the factor itself. For example, there is inevitably a time delay between doing the task and receiving any resulting advancement in the way of promotion.

From the point of view of a Catastrophe model, the importance of this work is that Herzberg clearly regards his two sets of factors as entirely separate and independent:

"The (satisfiers and dissatisfiers) were similar in their unidimensional effect." (Herzberg 1966 p 74)

and:

"At the psychological level, the two dimensions of job attitudes reflected a two-dimensional need structure: one need system for the avoidance of unpleasantness and a parallel need system for personal growth." (Herzberg 1966 p 75)

and:

"If man is to be understood properly, these two characteristics must be constantly viewed as having separate biological, psychological and existential origins." (Herzberg 1966 p 56)

In connection with Herzberg's motivators, the concept of self-actualisation or self-realization as man's ultimate goal has been focal to the thought of many personality theorists, such as, for instance, Jung, for whom man's supreme goal is to fulfil himself as a creative, unique individual, according to his own
innate potentialities, within the limits of reality. Herzberg reports Jung as saying that when man is deflected from this goal, he is nothing more than "a crippled animal!" (Herzberg, Mausner and Snyderman, 1959 p 114). Herzberg's two factor theory can be compared with Maslow's hierarchy of needs, namely physiological needs, safety needs, social needs, esteem needs and self-actualising needs (Maslow 1943). According to Maslow, man does not act in response to the higher needs until those lower down the hierarchy are satisfied. The first three are comparable with hygiene whereas the last two are comparable with Herzberg's motivators.

In the light of Herzberg's work I decided to hypothesise a Catastrophe model for behaviour on an isolated task with dissatisfiers (hygiene) and satisfiers (motivators) as control factors. There are many different types of behaviour which are possible in connection with such a task. The behaviour surface of Figure 4.13 shows just four. The top sheet is labelled 'work actively at task'; the lower sheet is labelled 'reject task completely'; and other areas are labelled 'forget about task' and 'dabble with task'. Intermediate types of behaviour do exist but are not labelled.

4.5.1 Normal and splitting factors versus conflicting factors for behaviour on an isolated task

I next had to consider whether I should use Herzberg's two factors as normal and splitting factors or conflicting factors.

Figure 4.14 shows Herzberg's two factors as conflicting factors. This is in agreement with Herzberg's findings as far as that working actively and enthusiastically is associated with high satisfiers (motivators) and rejecting the task is associated with high dissatisfiers (low hygiene). However, it does not take into account one of Herzberg's findings, namely that at high values of dissatisfiers (low hygiene), a person is more likely to reject if the satisfiers (motivators) are high than if they are low. This is reasonable because a person who does not care deeply about a task is less likely to get sufficiently emotional about it to reject it, rather than merely toy with it. Herzberg put it this way (Herzberg, Mausner and Snyderman, 1959, p 40):

"Extreme tension with a very deleterious effect on morale was concurrent with a high degree of positive emotional involvement in the job."

Figure 4.15 shows Herzberg's two factors as normal and splitting factors. The splitting factor consists of the satisfiers (motivators) because, according to
Fig 4.14 Conflicting factors for behaviour on an isolated task

Fig 4.15 Normal and splitting factors for behaviour on an isolated task
Herzberg, the bimodal behaviour of adoption/rejection is more likely as these increase. It also accounts for Herzberg's finding that, at high values of dissatisfiers (low hygiene), a person is more likely to reject if the satisfiers (motivators) are high than if they are low.

I decided that the evidence was in agreement with the use of Herzberg's two factors as normal and splitting factors for my model of behaviour on an isolated task.

4.6 A micromodel for behaviour on a task within an innovation

In Section 4.4, I argued the need for a micromodel which would allow me to look at behaviour on each of the various tasks that comprise the total innovatory behaviour, while distinguishing between the various effects of the total environment. The model for behaviour in a single task, derived above (see Section 4.5) would serve this purpose.

I wondered if I could refine the model more by distinguishing further between the various effects of the total environment. I thus gave some thought to the effects or factors which it ought to reflect. Familiarity with my data - but at this stage not a detailed analysis of it - led me to expect that support from me and the rest of the working group would have a considerable effect. In particular, as coordinator and editor, I had not only encouraged and supported; I had taken over the work associated with some tasks and done it myself, because I was so keen for the materials to reach publication. The model would be better at illustrating a person's innovatory behaviour if the intervention could be separated out from the other hygiene factors.

Familiarity with my data also led me to believe that another issue had a considerable effect, namely that of whether the materials would ever reach publication in such an adverse financial climate. The effect was one of uncertainty, ie uncertainty regarding whether or not to proceed with the innovation. Uncertainty is not to be confused with Handy's instrumentality. Uncertainty is a stale-mate caused by insufficient information upon which to base a decision. Instrumentality relates to the likelihood of the behaviour fulfilling needs; it depends both on risk - which is a decision based on the chances or odds of the behaviour fulfilling needs - and on the nature of the needs, which may change. These are fundamental distinctions in the literature on decision making.

If I wanted to incorporate two extra control factors, namely 'my work' and 'uncertainty' into a Catastrophe model, I would have to resort to the butterfly catastrophe (see Section 4.2.2). In addition to the features of the
cusp catastrophe, it has bias and a third stable mode at some combinations of values of the control factors.

Figure 4.16 shows how bias can cause oscillation between stable states even though the control factors remain constant. This is because the bias does not only swing the cusp round. Positive bias lifts the surfaces (both top and bottom sheet) and negative bias depresses it (see Figure 4.8). Figure 4.17 shows how the bias of my doing work for two people, Person A and Person B, lifts the surface of the micromodel, so that they are raised from the lower sheet to the upper one.

The third mode was something which made sense to me from familiarity with my data. I believed that some people had made a definite decision to mark time with the innovation (i.e. neither progress with it nor reject it) because they were genuinely uncertain about the value of proceeding and therefore whether to reject or to progress to adoption. This is quite different from progressing slowly, even extremely so, due to unfavourable values of hygiene and motivators. It is different from forgetting about the innovation and is also different from remaining at the evaluation stage which is one of perpetual cogitation. This is a completely new mode: the stale-mate of uncertainty. It would be a temporary state. Given time, the control factors would change so that the person would either jump up to the upper sheet or fall to the lower one. This was an exciting idea because it extended the traditional ideas of developmental innovation. The traditional view has regarded innovatory behaviour as passing through various stages, or - in Catastrophe Theory terms - consisting of various sequenced modes of behaviour. Although the number of the modes and the labels given to them has been modified according to the situation (see Section 3.5), there has been general agreement of a 'starting mode' (which Rogers calls awareness) a 'finishing mode' (which Rogers calls adoption) and intermediate modes of various manifestations of 'progress'. Traditional developmental innovation theory has not identified a mode of 'marking time'. It has not distinguished the stale-mate of uncertainty from the extremely slow progress towards adoption or rejection.

In summary the control factors for the micromodel would be:

\[
\begin{align*}
a &= \text{dissatisfiers (hygiene)} \\
b &= \text{satisfiers (motivators)} \\
c &= \text{work done by change agent} \\
d &= \text{uncertainty}
\end{align*}
\]
Fig 4.16 The oscillation of a point between the upper and lower sheets of the behaviour surface, according to bias (reproduced from Postle 1980 p 203)
Fig 4.17 Bias causing a person to reach the next stage of an innovation
(The figure on the left shows no bias; the figure on the right shows positive bias.)
4.7 Applications of the micromodel

The total innovation process can comprise a variety of tasks. This section illustrates how the micromodel models some of the main ones, beginning with the individual becoming aware of the innovation and ending with his adopting it.

Awareness is the only stage or mode of behaviour over which an individual has no control. It is forced on him according to outside circumstances: he may just happen to read about the innovation or someone may telephone him about it. Since the micromodel is for the behaviour of the individual himself, rather than of the configuration of his environment, no micromodel can reasonably be drawn for reaching the awareness stage.

The next task to consider would be that of the individual reaching the interest stage, or acquiring the 'interest' mode of behaviour, having once became aware of the innovation. Figure 4.18 (i) shows the behaviour surface. Since, according to Rogers, a person reaches the information stage when he asks for more information about the innovation, the labelling on the behaviour surface is modified from that of Figure 4.13 in the following way: 'reject task completely' becomes 'decide not to seek more information'; 'forget about task' becomes 'forget about seeking more information'; 'dabble with task' becomes 'unenthusiastically seek more information' - something which may happen if the awareness is reached via a face-to-face confrontation with the change agent and the person does not want to appear rude; and 'work actively at task' becomes 'actively seek more information'. It is important to note that catastrophic behaviour on the micromodel is not equivalent to catastrophic behaviour on the macromodel. It is entirely possible to reject a small part of a behaviour catastrophically without rejecting the total behaviour catastrophically. It is also possible for the behaviour on the micromodel to undergo hysteresis in a way that the macromodel would not register. Eventual catastrophic rejection of the task of the micromodel would cause rejection of the whole innovation on the macromodel - but, at the interest stage, this would be smooth.

Having sought more information, the next task is to reach the evaluation stage, ie to reach the behaviour mode of evaluating whether or not to proceed with the innovation. One possible behaviour surface is shown in Figure 4.18 (ii). 'Reject task completely' becomes 'do not evaluate innovation'; 'forget about task' becomes 'forget about evaluating innovation'; 'dabble with task' becomes 'dabble at evaluating innovation'; 'work actively at task' becomes 'evaluate innovation'. Figure 4.18 (iii) shows another manifestation of behaviour on the same task. If while the person evaluates, uncertainty appears, the butterfly factor comes into operation to produce a pocket of 'marking time'. The person
Fig 4.18 The behaviour surface for the micromodel of innovation
may find himself trapped in this until the control factors change, causing him either to be lifted to the top sheet or to fall to the lower one.

Having evaluated the innovation, the next task is to reach the trial stage, i.e., to try out the innovation in some way. One possible behavior surface is shown in Figure 4.18 (iv), where 'reject task completely' becomes 'do not try innovation'; 'forget about task' becomes 'forget about trying innovation'; 'dabble with task' becomes 'dabble at trying innovation'; and 'work actively at task' becomes 'try innovation'. Figure 4.18 (v) shows the manifestation of behavior due to the butterfly factor of marking time. Figure 4.18 (vi) shows yet another manifestation of the behavior surface: that due to the butterfly factor of marking time. (With the SRHE Scheme, it was possible for me to do work for people in such a way that they got jostled onwards in the innovation, through no efforts of their own.) The bias factor pushes the cusp inwards and sideways. In so doing, it lifts the behavior surface such that a person may be lifted to the top sheet without any changes in the other control factors.

Having conducted trials of the innovation, the final task is to reach the adoption stage, i.e., to adopt the innovation. There are three possible behavior surfaces according to the state of the butterfly factor and the bias factor. These are shown respectively in Figure 4.18 (vii), (viii) and (ix). 'Reject task completely' becomes 'do not adopt innovation'; 'forget about task' becomes 'forget about adopting innovation'; 'dabble with task' becomes 'dabble at adopting innovation'; and 'work actively at task' becomes 'adopt innovation'.

4.8 Features of the models

I was first attracted to Catastrophe Theory as a means of providing a visual representation of the unfolding of a person's behavior in an innovation. I saw this as a shorthand description which could be interpreted and assessed at a glance - and I believed that this, in itself, would be valuable. Nevertheless, the value of the models would be much enhanced if any of their features could add insight and understanding to the process of adoption/rejection. Such features do exist. They highlight behavior patterns, which, without the models, would almost certainly pass unnoticed. When examining these features, it is helpful to refer to Figure 4.19 which shows the macromodel and various versions of the micromodel, side by side. 'Work actively at task' is given as an alternative to 'achieve task', as in some situations it may be more appropriate.
Fig 4.19 The macromodel and the micromodel compared
(The macromodel is on the left; the various manifestations of the micromodel are on the right)
4.8.1 Features of innovatory behaviour modelled by divergence

In the macromodel, 'divergence' gives insights into how two apparently similar people can start out on an innovation, and although, the environment for the innovation is similar for both, one ultimately adopts whereas the other rejects.

In the micromodel, 'divergence' gives insights into how two apparently similar people can start out together at any stage of an innovation and, although the motivators and hygiene are similar for both, one ultimately reaches the next stage whereas the other does not.

4.8.2 Features of innovatory behaviour modelled by bimodality

For the macromodel, 'bimodality' gives insights into how two people at the same stage and at the same perceived total environment can either progress with the innovation or reject it.

For the micromodel, 'bimodality' gives insights into how two people with the same motivators and hygiene can either work actively at the tasks within the innovation, or not.

'Bimodality' on the micromodel also gives insights on what has come to be known as the Concorde Syndrome. This is a reference to the enormous amounts of money that were poured into the development of Concorde, because, having put so much in already, it would be wasteful to withdraw. If the eventual expense had been known in advance, the venture would probably not have been made. Imagine someone on the top sheet of the micromodel, not too far away from the fold. As hygiene gets worse for him, he moves towards the fold - but, as long as he does not move too far, he stays on the top sheet. Therefore he stays working at the task, even though, at those same values of control factors, there is an alternative equally stable state of not continuing.

4.8.3 Features of innovatory behaviour modelled by the cusp catastrophe

For the macromodel, 'catastrophe' gives insights into how a person can alter his progress through an innovation in an unexpectedly violent manner. Before the evaluation stage, any rejection is smooth, but after the evaluation stage it is catastrophic.

Catastrophic jumps on the various manifestations of the micromodel are not identical to a catastrophic jump on the macromodel. The former is for an isolated task within the innovation, whereas the latter is for the innovation itself. 'Catastrophe' on the micromodel gives insights into why a person rejects
a task violently and unexpectedly. As this can only happen by moving perpendicular, rather than parallel to the cusp axis, it must be due to hygiene becoming less favourable. Less favourable motivators at favourable hygiene cannot cause rejection.

The fact that the cusp gets wider and deeper as the splitting factor increases, also gives insights into innovatory behaviour. For the macromodel, it suggests that, should rejection take place, it is likely to be increasingly violent at later stages.

For the micromodel, it suggests that catastrophic rejection of a task is more likely at high levels of motivation.

4.8.4 Features of innovatory behaviour modelled by hysteresis

For the macromodel, the 'down and to the right' part of the 'hysteresis' cycle gives insights into how, once a person has rejected an innovation, the environment must become substantially more favourable than it was at the time of rejection, in order for him to progress again.

For the micromodel, the 'down and to the right' part of the 'hysteresis' cycle gives insights into how, once a person has rejected a task, hygiene must become substantially more favourable than it was at the time of rejection, in order for him to work at it again.

4.8.5 Features of innovatory behaviour modelled by the bias factor

In the micromodel, 'bias' gives insights into how a person can reach the next stage in an innovation, although hygiene and motivators do not change.

4.8.6 Features of innovatory behaviour modelled by the butterfly factor

In the micromodel, the 'butterfly factor' of 'uncertainty' gives insights into marking time within an innovation. According to Catastrophe Theory, this is a stable mode, equal in status to the other two stable modes of 'rejecting a task at a stage' and 'reaching the next stage'. This makes a significant contribution to the developmental theory of innovation which has not distinguished the stale-mate of uncertainty from the extremely slow progress towards adoption or rejection.
4.9 Concluding remarks

This chapter has described a process aimed at modeling a person's behaviour in passing through the stages of an innovation towards adoption or rejection. It is based firmly on the work of others:

- The visual and mathematical aspects are based on Catastrophe Theory, ie on the work of Thom;
- The innovation stages, which are described by the macromodel, derive from the work of Rogers;
- The behaviour of an individual on isolated tasks within the innovation is described by the micromodel, and is based on the work on motivation of Herzberg;

The models are attractive as a means of describing the unfolding of an innovation because the behaviour of a person, being interpreted visually, can be assessed at a glance. I see this alone as sufficient to make the models valuable. However, they have a further use. Although they are largely qualitative and descriptive rather than quantitative and predictive, I have argued that they have special features which give insights and add to the understanding of the adoption/rejection process. These are:

a. Two apparently similar people can start out together on an innovation and although the environment is the same for both, one ultimately adopts whereas the other rejects.

b. Two apparently similar people can start out together at any stage of an innovation and, although the motivators and hygiene are similar for both, one can ultimately complete a task within the innovation, whereas the other does not.

c. Of two people at the same stage and at the same perceived total environment, one can progress with the innovation while the other rejects it.
d. A person can continue with an innovation even though, if he had known in advance how unfavourable the total environment would eventually be perceived to be, he would have rejected.

e. Before the evaluation stage, any rejection is smooth, but after the evaluation stage it is catastrophic.

f. Rejection of any task is due to hygiene becoming less favourable. Less favourable motivators alone cannot cause rejection.

g. Rejection, if it takes place, is likely to be increasingly violent at later stages of the innovation.

h. Catastrophic rejection of a task is more likely at high motivators.

i. Once a person has rejected an innovation, the environment must be perceived as substantially more favourable than it was at the time of rejection, in order for him to progress again.

j. Once a person has rejected a task, hygiene must become substantially more favourable than it was at the time of rejection, in order for him to progress again.

k. Bias allows a person to reach the next stage in an innovation although hygiene and motivators do not change.

l. Uncertainty, is a stable mode of innovatory behaviour.

Chapter 11 gives case studies showing how far the models illustrate and add understanding to the behaviours of the authors progressing towards adoption/rejection within the SRHE Scheme.
Chapter 5

THE BACKGROUND TO THE SRHE SCHEME: THE HERMES PROJECT

5.1 Introduction

My involvement with materials to support academic staff development began when I was appointed as project officer to the project Higher Education Resource Materials: Evaluation and Service (HERMES) (Jan 1978 - Dec 1979). This project was dedicated to supporting academic staff development through the collection of print and other materials. Some aspects of my involvement served me well when I came to design the SRHE Scheme, even though, at the time of HERMES, I had no notion of such a scheme.

Section 5.2 reports on the inception and terms of reference of the HERMES Project, Sections 5.3 to 5.9 describe aspects of it which affected how I eventually designed the SRHE Scheme, and Section 5.10 summarises these as implications for the design of the SRHE Scheme. Much of the chapter is subjective because, at the time, there were no reasons or resources for objective studies.

5.2 The inception and terms of reference of the HERMES project

The HERMES project was set up by the Council for Educational Technology (CET). It was modestly funded and arose out of three quite separate approaches to CET: by the University Teaching Methods Unit of the University of London (UTMU), by the consortium of City University, Hatfield Polytechnic and Surrey University (CHS) and by a consortium in audio-visual media of five Northern Universities (5NU) (Elton 1979). These were all brought together by CET. The terms of reference included setting up resource centres at UTMU and each of CHS, and identifying and acquiring both book and non-book materials for the centres, with video materials coming largely from 5NU. The 5NU later withdrew.

My own involvement began after the project's inception. As project
officer. I was responsible to a steering committee which was responsible to a consultative committee. I had very little freedom over the general direction of my work, although I was given considerable freedom over how I approached it.

5.3 Acquiring the materials

At the outset of the project the steering and consultative committees agreed that materials should serve two distinct and separate target populations (Cryer 1979):

- individual members of the teaching staff of universities and polytechnics, who might wish to improve their knowledge and understanding of teaching, learning and administration.

- staff developers, ie those people who run courses in teaching, learning and administration for teachers in institutions of higher education.

In addition, the materials should also serve the staff developers and course participants of the institutions housing the centres.

The two committees also decided that the resource centre materials should attempt to accommodate the widest variety of modes of use and include as many different media as possible. By the end of the project, I had accordingly collected the following types of material:

- training exercises
- games and role-play simulations
- course programmes
- course handouts
- self-study materials
- evaluation proformas
- books
- pamphlets
- reading lists
- reports
- research articles
- catalogues

The following media were represented:
Broadly speaking, I acquired the materials via four routes:

(a) The staff developers at the four institutions listed materials which they specially requested me to buy in order to support their own courses. These were mainly books, but included some board games and non-print presentations. The expenditure in this category was far and away greater than that in all the other categories together.

(b) The four institutions bequeathed to the resource centres the various books and non-print materials which they had collected over the years.

(c) I followed up leads on materials produced for in-house use in other institutions, both within the UK and abroad. These were generally donated without charge and consisted mainly of training exercises, games, simulations, course programmes, course handouts, self-study materials, evaluation proformas and reading lists.

(d) The committees agreed that I should be free to purchase pamphlet and booklet materials of my own choosing from commercial sources - provided that I keep within a certain very modest budget.

When I came to display and use these materials at various conferences and courses, I found that the books (not to be confused with the booklets and pamphlets) had the least appeal for staff developers and lecturers outside UTMU and CHS. Firstly the books were invariably available from their institutions' libraries. Secondly, these people were seldom involved in mounting or attending such long staff development courses as those of CHS and UTMU. They could spare much less time for staff development, and consequently found the more succinct - and cheaper - materials of (c) and (d) more appealing. This finding suggested that - depending on the size of the budget - it is normally most cost-effective for staff development materials to be short and succinct - which generally also means relatively cheap.
5.4 The organisation of the resource centres

One of my prime concerns at the beginning of the project was to select a suitable system of cataloguing, indexing and retrieval. On the one hand the more sophisticated the system, the greater the likelihood of a user finding his way to materials via a wide variety of routes - but on the other, the more time it would take to set up, the greater the likelihood of mistakes in the indexing and retrieving, and the less the user could manage without professional assistance.

The project did not have the financial resources to set up and maintain any sophisticated system. So I opted for simply arranging the resources into 34 broad classifications. These were formulated after consulting the indexes for the Educational Resources Information Centre (ERIC) in the United States; the Exeter Abstract Retrieval System (TEARS) at Exeter University; the University Teaching and Research Centre (UTRC) at Victoria University, Wellington; the library at the London University Institute of Education; and the abstracts of the Society for Research into Higher Education. I displayed the resources, including multi-media presentations, on the shelves, which I accordingly labelled with these broad classifications. This was comparatively simple and quick to do, and had the advantage of facilitating general browsing. It had disadvantages for the specific browser, namely the person who wanted to browse on a specific topic only, but whose personal classification for that topic did not correspond to my own. To accommodate his needs, I introduced the dictionary system. This uses a dictionary/thesaurus to overcome the problem of users approaching materials via a number of different routes. In the early days of operating such a system, users are asked to build up the list of possible approach routes, by writing into the dictionary/thesaurus whatever keyword or classification was in their minds at the outset of their search. The dictionary/thesaurus thus becomes reasonably comprehensive quite quickly.

The special feature of this system is that it simply and easily accommodates users who do not know precisely what they are looking for, but it is traditional in its accommodation of users who do know certain information on what they are seeking. Three index cards are designated for each resource item: one is filed under title, another under author and a third under classification. Thus the user can locate a specific item by merely remembering either its title or its author.

5.5 Problems of storage and borrowing

A problem which was far from trivial concerned keeping the display of
materials tidy. Whereas books are wide and rigid, and so stand unsupported, many of the HERMES items were flimsy; they fell about and quickly looked a mess. For these materials, pamphlet boxes provided a partial solution, although row upon row of pamphlet boxes did not seem to invite closer inspection, as would rows of multi-coloured and multi-sized resources. At one stage I designed some special covers which I had run off on coloured cardboard and I put the flimsy materials inside these, strengthened with a rigid, plastic spine, but this too was only partially successful because the floppiness returned very quickly. For such home book binding I would recommend the plastic spiral-type spines which are very cheap, given the availability of a machine to fix them, and I would suggest that they be of a light colour so that the title can be written on them. The ink should be spirit rather than water-based; spirit based OHP pens are ideal.

The films, audio tapes and video tapes were sufficiently rigid to store well on the shelves and so posed no problem. For multi-media packages such as tape slides, I purchased special multi-media boxes which were professional and attractive looking and stood up on the shelves like books.

There were also problems over the shelves. As many of the materials were home-produced by various institutions on A4 format, the standard separation of shelves on ordinary bookcases was too small. The problem was approached differently in each of the resource centres. One centre chose to mount long lengths of shelving around the walls, but although the separation was suitable, it proved impossible to keep the materials stored upright for any length of time. Metal bookends were tried, but the flimsy materials were not sufficiently heavy to keep them in position. So the materials slithered about and looked untidy.

In other resource centres, instead of bookends, doweling was inserted about every 30 cm. This was done on both wall-mounted shelves and on specially adapted bookcases. It worked quite well and, being cheap, was within the project's limited budget.

UTMU and CHS also had to come to terms with whether or not to permit borrowing. Generally the project's policy was that the resource centres should have a shop window function, so that users could see what was available and then obtain copies for themselves, elsewhere. Unfortunately, this did not work satisfactorily. Certainly a user, whose eye was caught by a book, could go away and order it from his own library, but this was by no means possible with video tapes, films or materials produced for in-house use in an institution on the other side of the world. Either requests to borrow these types of materials had to be refused - which was hardly supporting staff development - or the proverbial blind eye had to be turned, or special concessions had to be made. As events turned out I know of no occasion when a user from another
institution ever failed to return what was borrowed. The position in the home institutions was not as simple. Materials were frequently borrowed because they were needed for the day-to-day work of the institution. Failure to return them was undoubtedly unintentional, but the fact remained that they stayed absent from the shelves over long periods. I tried various methods to document loans and the majority of users adhered strictly to the operating rules. However, the undocumented loans were sufficient to be noticeable. No doubt the situation would have been different if there could have been someone in regular attendance at a loan-desk.

My experiences with the problems over tidiness and borrowing led me, with regret, to the conclusion that the resource centres were not a particularly satisfactory way of supporting academic staff development—especially within a modest budget and for the staff development community outside UTMU and CHS.

5.6 Problems with documentation

In the HERMES collection there were about 80 materials which explained how to run games, simulations, training exercises, workshops, etc. These, while stimulating and educationally useful, were often passed over by the clientele because of the difficulty of extracting pertinent information such as the target audience, suitable numbers of participants, duration and possible aims or outcomes.

I attempted to make these materials more usable by isolating these salient points and displaying them under headings based on the SAGSET simulation/game data sheet (SAGSET Council 1977). All too often, this was a tedious or impossible task because the information was either not there or too deeply buried.

I formed the conclusion that many of these types of materials, as they stood, were of minimal use to staff developers because of the difficulty users had in teasing out essential information.

5.7 Use of the resource centres

Since much of the two-year project period was devoted to setting up and publicising the resource centres, their main use during this time was inevitably by the home institutions, rather than by outsiders. These users included:
the staff of the institutions
- participants of courses and workshops mounted by the institutions
- research students at the institutions.

Informal contact with these users led to the conclusion that the resource centres played a valuable part in providing the support they required. Towards the middle of 1979 two of the resource centres (at UTMU and S) were opened to visitors during certain specified times and at other times by arrangement. I left questionnaires for visitors, because I was seldom able to be there myself. The questionnaires enquired about the institutional attachment of the visitor, his needs in coming to the resource centre, whether his needs were met, and whether he used the dictionary/thesaurus. There was also space for free comment. The number of completed questionnaires was only just in double figures. According to the returns and to the secretaries and academic staff at these institutions, visitors were generally staff developers (rather than lecturers) from other institutions. More often than not, they were at UTMU or S on other business and had not made special journeys to visit the resource centres. They were generally satisfied with what the resource centres offered.

It was unfortunate that the visitors to the resource centres from outside UTMU and CHS were so few in number. Probably the reasons stemmed from shortage of both financial support and time. I regretfully formed the opinion that, to serve the staff development community at large, the materials must go to the people; it is not practical for the people, in large numbers, to come to the materials.

According to informal contact with users and to returns from the questionnaires, the multi-media approach, provided by the dictionary/thesaurus was seldom used. UTMU and CHS staff knew what they wanted anyway and visitors usually prefered to browse. I thus formed the opinion that the staff development community outside UTMU and CHS tended to be more concerned with finding good materials than with findings materials in a particular subject area. This would make sense. Where they wanted reference works, they could go to the libraries at their institutions - but these libraries could not offer materials in the (c) and (d) categories (see Section 5.3). Since staff developers have the academic freedom of other academic staff, it is reasonable to assume that they generally put on courses or run workshops in subject areas of their own choosing. Their choice could be influenced by their finding good materials.
5.8 A catalogue of resource materials

Early on in the project, I was already concerned that the resource centres were not providing much of a service to the staff development community outside UTMU and CHS. I thought that one way of remedying this would be by sending out a short catalogue documenting a small sample of the collection. Not only might it encourage the recipients to visit the centres, it might also show them what was new in the way of staff development materials. By providing the name of the source from which the material had been acquired, I hoped that recipients would be stimulated to obtain copies for themselves.

The steering committee gave its agreement to my going ahead with this venture. The resulting catalogue came to be called the HERMES Preliminary Catalogue (HERMES 1978). It documented about fifty materials, mainly those within categories (c) and (d) of Section 5.3. I sent a copy to every university, university college and polytechnic in the UK. I obtained the list of university contacts from an unpublished list supplied by CCTUT; and the list of polytechnic from the Register of the Standing Conference on Educational Development Services in Polytechnics (SCEDSIP 1977). I was not given the time or resources to follow up the impact of this catalogue formally, but according to informal communication with staff developers, it was welcome. It was recommended as useful at the CCTUT meeting at Aston in November 1978 and was cited as a list of references in a book on staff development (Berendt 1980).

I made it part of my commitment to work towards the production of a full catalogue. The basis was provided by the sets of three index cards for each item: a 'classification', a 'title', and an 'author' card. Each contained information on title, author, publisher (or source), date, medium, classification, and abstract.

By the end of the project the collection was probably the most comprehensive of its type anywhere in the world, and there were around 800 items documented. Before I left, I gave the Council for Educational Technology photocopies of sets all three of the cards. These photocopies came to be known as the HERMES List. I hoped that CET would commission a librarian to standardize the entries, in readiness for publication.

This catalogue materialised early in 1982 (Cryer 1982b). I recommended that it should document those materials that a staff developer would be least likely to find in his own institution's library, i.e., principally those materials in categories (c) and (d) of Section 5.3. The catalogue contained some three hundred entries. Items were presented within the classifications mentioned in Section 5.4, and listed by author. Lists of addresses were provided in an appendix. The preparation of the camera-ready copy was funded by the
Institute for Educational Technology (IET), University of Surrey; publication was joint by CET and IET; and CET undertook marketing.

The HERMES List subsequently proved useful to me, after the conclusion of the project, when I used it to analyse the provision of staff development materials (see Chapter 6).

5.9 The HERMES Questionnaire

One of the stated aims of the HERMES Project was to:

"write a report ... which will identify those factors which contribute to, and militate against the effective production, dissemination and use of materials..." (Elton 1979)

In consequence I created a questionnaire (see Appendix I). This came to be called the HERMES Questionnaire. It had a section on each of production, dissemination and use of materials. In 1979 I sent it to those people to whom I had already sent a HERMES Preliminary Catalogue. I analysed the findings and wrote the report (Cryer 1979). The findings were interesting, but it was difficult to draw any conclusions which could be acted upon to improve or aid staff development.

However, the returns from the HERMES Questionnaire proved extremely valuable to me later, in various ways which I had in no way foreseen at the time. These are referred to in at the appropriate places in the following chapters.

5.10 Implications for the design of the SRHE Scheme

The following is a summary of the aspects of my involvement with the HERMES project, which eventually contributed to my design of the SRHE Scheme.

1. Through my experiences in acquiring materials and of displaying and using them, I formed the opinion that non-print materials and books (not to be confused with booklets and pamphlets) are the least cost-effective of materials for the widespread support of academic staff development. (See Section 5.3)

2. My experiences over trying to keep the resource centres tidy and over keeping track of borrowing led me to believe that, unless there are funds for a librarian to be in attendance, resource centres are not a very satisfactory
way of supporting staff development on any large scale. (See Section 5.5)
3. My experiences in attempting to document essential information such as
duration, target audience, aims, etc. for the materials on activities (like
workshops) led me to believe that many such materials, as they stood, were of
minimal use. (See Section 5.6)
4. The relatively small numbers of visitors to the resource centres led me to
believe that any scheme to support staff development widely (nationally or
even internationally) must find a way of bringing the materials to the people
rather than expecting the people to go to the materials. (See Section 5.7)
5. The minimal use of the dictionary/thesaurus and the preference for browsing
by visitors led me to the opinion that staff developers are often more
cconcerned to find what they regard as good materials than to find a material
on a specific subject. (See Section 5.7)

There are other ways in which my experiences within HERMES prepared
me for designing the SRHE Scheme:

a. The HERMES List, which I compiled as a forerunner to a published
catalogue, proved very valuable when I eventually made a study of the
provision of staff development materials. (See Section 5.8)
b. The HERMES Questionnaire eventually proved useful in a way that I had
not at the time foreseen, by providing some basic data for various studies
described in the next few chapters. (See Section 5.9)
c. The close involvement with the people in the field. I believe that this was
very valuable indeed.
Chapter 6

DESIGNING THE SRHE SCHEME: SURVEYING THE TARGET AUDIENCE

6.1 Introduction

While I was perusing the returns from the HERMES Questionnaire (see Section 5.9), I realised that those for Questions 2 and 3 (see Appendix I) could be analysed to shed more light on the departmental attachment, timetabled involvement and facilities offered by staff developers - and I accordingly made the analysis. Much later, when I came to design the SRHE Scheme, it occurred to me that the analysis was, in fact, a survey of its target audience.

Section 6.2 is concerned with the recipients of the questionnaire; Sections 6.3 - 6.5 report on the findings; Section 6.6 discusses them in their relation to the need for materials; and Section 6.7 summarises the implications for the eventual design of the SRHE Scheme.

6.2 The recipients of the HERMES Questionnaire

The CCTUT list of university contacts contained 24 names and 25 faceless, formal titles (23 chairmen of senate committees on teaching and learning and two heads of educational units). As the 1979 edition of the Register of the Standing Conference for Educational Development Services in Polytechnics was not yet available, I was forced to use the previous edition which meant that not all my departmental attachments were still in their staff development posts. Thus a substantial number of the recipients were not identifiable by their names. The questionnaire displayed the bold statement that it was for anyone concerned with training/development activities for teachers in higher education and that if the recipient felt that someone else in his or her department or institution would be in a better position to fill it in, then to pass it on accordingly.

I therefore believed that my list of respondents was more up to date than any other list available at the time, and that it was made up of people who
were genuinely active in the field.

Altogether there were 69 responses, some of which were multi-responses from UTMU and CHS. So for the purpose of the analysis, where I felt that each institution should be represented equally, I used only one response from each institution - that from the person whom I judged to be highest in the staff development hierarchy. The survey is thus based on one response each from 35 universities (and university colleges) and 25 polytechnics, although I did in addition receive letters from four universities and one polytechnic regretting that they could not reply owing to there being no formal training programme in their institutions. Twelve universities and five polytechnics failed to respond at all. I believe that this 79% response is sufficiently high for the resulting data to provide a realistic picture of the characteristics and activity patterns of staff developers in the UK at the time.

6.3 University staff developers

The departmental attachments of the 35 university respondents were as follows:

- 13 as some sort of media unit, services unit or educational technology unit
- 7 as departments of education
- 10 as academic departents
- 5 as miscellaneous other

The rest of this section is concerned with a detailed analysis in these categories. It also discusses the returns from Chairmen of University Senate Committees on Teaching.

6.3.1 Staff developers in university media units, services units or educational technology units

The largest category of university staff developers consisted of those based in media units, services units or educational technology units. Of the thirteen, eight described their staff development involvement as full-time.

This led to the question of what was meant by a full-time staff developers. To quote two full-timers from two separate units:
"My involvement could be said to be full-time, if we count design and production of teaching support materials as in any way staff development - and I consider it is."

"Also (I) research into teaching and learning in higher education and into staff development."

It could be argued that many of these full-timers were spending much of their time on the periphery of staff development. Nevertheless they described themselves as full-time, and that was my justification for including them in this category - and these peripheral activities could be considered as essential to staff development in the same way that academics generally regard research as essential to their teaching.

All eight described their staff development involvement as both running training development courses of various kinds and offering counselling/consultancies.

Of the five who described their involvement as part-time, all indicated that they were involved with training/development courses of various kinds and four that they offered counselling/consultancies.

6.3.2 Staff developers in university departments of education

Of the seven respondents from university departments of education, only one described his involvement as full-time; five described it as part-time and one as voluntary. Again the full-time involvement with staff development seemed to have to be interpreted loosely:

"I am convenor of (a programme) which covers course evaluation, course development and generally staff development."

He did not indicate whether he offered counselling/consultancy commitments.

The involvement of the part-timers varied from institution to institution as the following quotations indicate:

"(I am) Director of an annual three day course on university teaching for new lecturers."

"One-week course for probationers ... followed by seminars."

"Chairman of sub-committee of Senate Committee on Teaching Methods."
All the part-timers indicated that they were involved in running courses of various types, but not in counselling/consultancies.

The spare-timer indicated that he ran courses but that there were no follow-up seminars or counselling/consultancies.

6.3.3 Staff developers in university academic departments

None of the ten respondents from university academic departments described their staff development involvement as full-time. Eight described it as part-time and two as spare-time or voluntary. One part-timer described himself as follows:

"I am the co-ordinator for Development of Teaching in the University, which involves organising our initial training course, being available for consultation by new staff etc."

Another offered the following:

"We put on a two day programme during the inter-semester break in January. It included such items as the academic organisation of the university; talks and discussion on the aims and objectives of university teaching; various views of the lecture; approaches to seminars, tutorials and practicals, demonstrations of AV equipment, the Reprographic section, the AV aid workshop and facilities in the education centre. Twenty three lecturers and fourteen research fellows and assistants were invited: the most to attend any session was six... The freeze this year has limited appointments to two only; so it is unlikely we shall attempt to offer the programme again."

Of the eight remaining respondents, all indicated that they were involved in running courses of various kinds; only three offered counselling/consultancies.

Both spare-timers indicated that they were involved in courses but only one offered counselling/consultancies. The departmental attachment of these ten respondents was as follows:

5 - science subjects (genetics, chemistry, computational and statistical science, metallurgy, civil engineering)
3 - social science subjects (social anthropology, sociology, psychology)
1 - medical subjects (nursing studies)
1 - arts subjects (philosophy)

6.3.4 Staff developers in miscellaneous non-academic university departments

Of the five respondents from non-academic university departments, one did not give his departmental attachment, and the other four were administrators: personnel division, academic office, general board office, the Registry.

Involvement was described in the following ways:

"(I am) chairman of a university teaching and learning committee."

"Run training and development courses for all categories of university staff including joint academic/admin courses, workshops, etc."

"I am secretary of the University's Committee on Teaching Methods which has training/development courses."

"(I am) Secretary of the General Board's Committee on the Training of University Teachers."

"(I am) secretary of a teaching and learning committee."

6.3.5 Chairmen of University Senate Committees on Teaching

These responses have been subsumed under the previous sections, but it may be worth scrutinising them separately.

In all I sent out 23 questionnaires addressed formally to chairmen of university senate committees on teaching. I did not address these persons by name; I did not know their names. In the circumstances I expected a poor response. The reverse was the case: nineteen of these 23 chairmen either responded themselves, arranged for others to respond or forwarded a letter of regret explaining why they were unable to respond. This 83% response seemed a very encouraging indication of how seriously they took their commitment.

It was not possible to use the data to identify positively the departmental attachments of these chairmen, because I could not be sure whether the respondent was himself a chairman or someone to whom a chairman had passed on the questionnaire. Three respondents volunteered that they were standing in the stead of chairmen; there may have been more. The
departmental attachment of the remaining sixteen - which included two forwarded letters of regret was as follows:

7 - education
2 - social science subjects (psychology, social anthropology)
3 - medical subjects (nursing studies, dentistry, genetics)
1 - science subjects (chemistry)
1 - arts subjects (philosophy)
2 - administrative offices

Of the two letters of regret one came from a department of education and the other from an administrative office. There thus seemed a greater tendency for chairmen of University Senate Committees on Teaching to be based in departments of education than in any other department.

6.4 Polytechnic staff developers

The departmental attachments of the 25 polytechnic respondents were as follows:

- 16 as some sort of media unit, services unit or educational technology unit
- 6 as departments of education
- 2 as academic departments
- 1 as miscellaneous other

There were 7 non-responders.

The rest of this section is concerned with a detailed analysis in the above categories.

6.4.1 Staff developers in polytechnic media units, services units or educational technology units

As with universities, the largest category of polytechnic staff developers was in the category of media units, services units or educational technology units, and there were more full-timers than part-timers. Thirteen of the sixteen described themselves as full-time, against three as part-time.
The following quotations provide an insight into what they meant by full-time:

"(I work in a) Production Unit, primarily for innovation."

"I am one of six members of staff in a unit providing a Staff Development Service.
- central in-house provision
- individual staff development meetings
- mounting and hosting special courses and conferences
- disseminating information
- educational research
- departmentally based provision and support
- counselling members of staff. One member of the unit has a special commitment."

"(I am) media resources officer, one of two staff of the Educational Services section of the library and learning resources service. My job is to give instructions on the operation of audio visual equipment and on the preparation of teaching and learning materials, and to respond to individual or departmental requests for advice and assistance on the use of media resources."

"Course director for the Polytechnic's Educational Development programme - chiefly concerned with staff development and consultancy work on learning materials."

Twelve of the full-timers indicated that they were involved in running courses and eleven that they were involved in counselling activities.

The following quotations refer to the involvement of the part-timers.

"(I) research into staff training procedures."

"(I) run training courses and counsel individuals."

"(I) run training/development courses."

6.4.2 Staff developers in polytechnic departments of education

Of the six respondents from polytechnic departments of education all stated themselves as part-time. They quoted their involvement as follows:
"I spend two hours per week ... taking an inservice course for new staff."

"Part of my faculty is concerned with running courses of training for further education teachers, including a Graduate Certificate taken by some teachers subsequently entering higher education and a range of short courses including induction courses for new teachers."

"Since the merger of a college of education with the poly, staff development is less centrally organised. Many individuals are involved. My involvment has reduced."

"Induction, in-service (90 hours 'teaching methods' course for new members of staff) and an in-house short courses are my responsibility, but the polytechnic has yet to formulate its official staff development policies."

"Induction-to-teaching courses for new inexperienced staff are mounted ... (elsewhere) ... and can lead to a Cert Ed qualification. The courses (here) are directed more to experienced staff and to specific departmental needs."

"I run the annual staff induction conference which is just about the only formal development activity in this polytechnic."

In addition, five of these part-timers indicated that they ran courses and three that they were involved in counselling/consultancies.

6.4.3 Staff developers in polytechnic academic departments

There were two respondents from polytechnic academic departments. The subject of one was management, and he described his involvement as:

"In-service tutor. Responsible for induction and in-service training of new staff."

The subject of the other was liberal studies. He indicated that he was involved with both courses and counselling/consultancies.
6.4.4 Staff developers in miscellaneous non-academic polytechnic departments

There was only one respondent from a non-academic polytechnic department - an assistant director who described his involvement as:

"I assumed responsibility for staff development during the last session and I am not yet in a position to complete (the questionnaire) properly. Staff development in the Polytechnic is largely school/departmental based."

6.5 Discussion of findings

Figure 6.1 sets out diagrammatically the departmental attachments of the respondents from universities and polytechnics. The difference is striking. Whereas 64% of the staff developers in polytechnics were attached to units specially set up to support teaching and learning in some way, this was true for only 37% of the university staff developers - and this almost certainly reflects reality, in that the questionnaire would surely have found its way to such units in the universities if they had existed.

Also striking from Figure 6.1 is the sterling work by university academics with commitments to their own subject department. Twenty eight of the university respondents fell into this category. In polytechnics, however, where the majority of the staff development stemmed from the professional media units, services units or educational technology units, the percentage of staff developers with commitments to subject departments was only 2%.

The polytechnics' more professional approach to staff development can be reached via another route (see Figure 6.2). Less polytechnic than university staff developers described themselves as part-time, and less described themselves as unpaid volunteers.

The picture emerged of university staff developers so pressed that their involvement was limited to putting on courses of various kinds (usually a few days' induction course, sometimes followed by seminars). Only 43% of these respondents indicated that they offered counselling/consultancies, against 68% from polytechnics (see Figure 6.3).

6.6 The need for staff development materials

The questionnaire had numerous spaces for free response, and some of the
Fig 6.1 Staff developers' departmental attachment

Fig 6.2 Staff developers' timetabled involvement

Fig 6.3 Counselling/consultancy services
respondents took advantage of them to offer comments on staff development materials.

Full-timers were more forthcoming in this respect. Irrespective of whether they were based in a university or a polytechnic, their responses reflected a perceived need for materials to support their work. Only one (university full-timer) responded in terms of materials being of so little consequence as to be incidental.

The survey showed up the substantial number of part-time or voluntary staff developers, with principal commitments to academic departments. Often these people were seconded to staff development for short periods of between one and three years. I therefore formulated the hypothesis that many felt unprepared for and isolated in their staff development work and would appreciate support - for example, by way of materials. This interpretation was subsequently supported during informal discussions at conferences and other meetings, although no such evidence was obvious from the questionnaire returns because part-timers and volunteers tended to leave free-response questions blank or to respond on some unrelated topic.

6.7 Implications for the design of the SRHE Scheme

Section 5.10 summarised five points from Chapter 5 that eventually influenced the design of the SRHE Scheme. Here is one more from this chapter. The numbering follows that of Section 5.10.

6. Within all categories of the target audience of staff developers, irrespective of whether based in universities or polytechnics and whether full-time, part-time or voluntary, there seemed to be a need for staff development materials. (See Section 6.6)
Chapter 7

DESIGNING THE SRHE SCHEME: SURVEYING THE PROVISION AND DEMAND FOR MATERIALS

7.1 Introduction

This chapter reports on investigations to survey the provision of and demand for materials. I made the investigations after the conclusion of the HERMES Project, with the purpose of collecting information that might be useful. Only later did I realise that the findings would contribute to the design of the SRHE Scheme.

Section 7.2 introduces categories for analysing the provision of materials, and Sections 7.3 and 7.4 respectively provide insights into the nature and subject areas of available materials. Sections 7.5 and 7.6 respectively look at the use of materials according to nature and subject, and Section 7.7 summarises the findings that eventually influenced the design of the SRHE Scheme.

7.2 Defining categories for the analysis

For the purpose of surveying the provision of materials, I decided to consider materials in terms of how directly they supported the work of staff developers in their contacts with their clientelle. So I took two broad categories which I called:

- 'direct-support materials'; and
- 'indirect-support materials'.

'Direct-support materials' would consist of materials which staff developers could use directly without major reprocessing. Examples would include individual study materials and documented training activities. Individual study materials are materials which staff developers can distribute, perhaps as pre- or post-course reading or in connection with consultations (see Section 2.6).
Documented training activities normally give instructions and guidelines for staff developers to use with groups of lecturers, and they often include resources such as masters for handouts and OHP transparencies (see Section 2.6).

'Indirect-support materials' would consist of general materials about staff development, education, teaching and learning (see Section 2.6). They would need some sort of processing before being suitable for staff developers to use directly. Examples would include reports, research articles and some books.

In order to investigate the provision of direct- and indirect-support materials, I needed a means of recognising and distinguishing them. Documented training activities were fairly simple to recognise but it was less simple to distinguish some individual study materials from some indirect-support materials. Some presentations showed that the intention was for individualised use (for example, see (i), (ii) and (iii) in the list of resource materials in Appendix II). However, to categorise the majority, I needed a working definition of an individual study material.

In devising it, I bore three factors in mind. Firstly that there was generally no great incentive for lecturers to study outside their own subject. Secondly that staff development was more often concerned with practical outcomes than with academic theories. Thirdly, that time was always at a premium. In consequence, I defined a material as suitable for individual study if:

- of pamphlet size, written in simple, easy-to-read style and dealing primarily with practical information and advice

or

- of any length written specifically in a self-instructional format.

I took reading lists and questionnaires as within this definition, but not research articles and conference proceedings.

7.3 The nature of the available materials

Since no project other than HERMES had been dedicated to the collection of staff development materials, its collection was, in December 1979, almost certainly the most comprehensive of its kind in the world. The list of its contents, the HERMES List (see Section 5.8), was thus an appropriate
instrument for analysing the provision of moderately priced staff development materials.

Of the 761 entries, 294 fell into the direct-support category and 467 into the indirect-support category. There was clearly an imbalance between the two. Of the 294 direct-support materials, only 86 were documented training activities. This was a more striking imbalance and clearly showed the relative dearth of documented training activities.

7.4 The subject areas of the available materials

I analysed the HERMES List to see the number of documented training activities in each of the 34 subject classifications used in the resource centres (see Section 3.4). This number was in single figures in all but three: experiential learning, interpersonal relations and group-work. Even within these classifications, however, choice was limited in that the provision consisted of series, disseminated from a few sources and reflecting their approaches. For example, the 15 Pfeiffer and Jones Annual Handbooks for Group Facilitators and Structured Experiences for Human Relations Training (see Appendix II (iv)) accounted for all the experiential learning documented training activities; the nine Norman Kagan materials of eight video/film supported exercises and one manual (see Appendix II (v)) accounted for 11 of the 12 interpersonal relations documented training activities; and the University of East Anglia videotapes (see Appendix II (vi)) accounted for eight of the 10 group-work documented training activities.

Most materials were not custom-made, ie created primarily by UK staff developers for use in UK universities and polytechnics. They were either produced overseas, eg, the Macquarie CAT minicourses (see Appendix II (vii)), or for use in management training, eg, the MGL Ltd commercial productions (see Appendix II (viii)), or for general personal development, eg the Pfeiffer and Jones materials (see Appendix II (iv)). With the exception of the East Anglia videotapes (see Appendix II (vi)), there were at most three custom-made materials in any one subject classification. There were none at all in evaluation, audio-visual aids and experiential learning; and only one in each of assessment, course design, study skills, individualised learning and project work.

There was thus only a very small number of readily available documented training activities, created by UK staff developers to support staff development courses in UK universities and polytechnics. Their dearth was not limited to the UK. At a conference of European staff developers, Hamburg 1980, representatives from Germany, Holland, Austria and Yugoslavia told me that they knew of none in their own languages. The dearth of documented
training activities, compared with other materials also existed in Australia, as was apparent from scrutiny of LABYRINTH, the bulletin of materials available from Australian institutions of higher education (see Appendix II (ix)).

7.5 Use of materials according to nature

Question 4 of the HERMES Questionnaire (see Appendix I) provided data for investigating the use of materials according to their nature. I made the analysis according to the following checklist:

- handouts,
- games,
- simulations,
- other training exercises,
- reports,
- reading lists,
- research articles,
- books,
- catalogues
- 'other materials'

These were not mutually exclusive because the respondents could indicate as many as they liked.

It was possible to obtain a rough estimate of the relative use of direct- and indirect-support materials by categorising handouts, games, simulations, other training exercises, self-study materials and reading lists as direct-support materials, and research articles and books as indirect-support materials.

Assuming, at one extreme, that the checklist categories were perceived as mutually exclusive, then the ratio of 'use of direct-support materials' to 'use of indirect-support materials' equals the ratio of 'average use of direct-support materials per category' to 'average use of indirect-support materials per category'.

\[
\text{ie } \frac{269/6}{109/3} = 1.23 : 1
\]

Assuming at the other extreme, a complete overlap between categories, the ratio became
The truth was somewhere between, although there was no way of knowing where. What could be said was that direct-support materials were used rather more than indirect-support materials. From the analysis of the entries in the HERMES List, the ratio of direct-support materials to indirect-support materials was 294 : 467 or 0.629 : 1. Thus, while more direct-support materials were used, more indirect-support materials were available. Although these data were crude, they did suggest a need for more direct-support materials. On the basis of the previous section, the need was primarily for documented training activities.

7.6 Use of materials according to subject

A first step to investigating the subject areas where need was greatest was to investigate use in terms of subject. I did this through a further questionnaire in June 1980 (see the third question in Appendix III). (Other aspects of this questionnaire are discussed in a later chapter, in Section 9.2.) I sent the questionnaire to the 42 staff developers who had indicated in the HERMES Questionnaire that they used direct-support materials. There were 36 returns and two letters of regret.

Availability and use were together higher than average for only one subject, interpersonal relations. Subjects where use was high but availability low were assessment, course design and study skills. These were all subjects closely related to a lecturer's involvement in teaching and learning, rather than to his management and administration tasks, to his self-awareness, to his skills at relating and communicating with others, or even his research. I felt it reasonable to assume that need was greatest where use was high and availability low. Thus staff development materials were needed in subject areas related to teaching and learning. This conclusion was supported by data obtained in connection with the University of Surrey's Information by Post scheme (Elton 1981a). The Institute for Educational Technology sent out a questionnaire to investigate the topics which would be most in demand and the response was primarily for aspects of teaching and learning.

7.7 Implications for the design of the SRHE Scheme

The final sections of the previous two chapters (Sections 5.10 and 6.7) listed
some of the points which influenced me when I eventually came to design the SRHE Scheme. The work described in this chapter offers two more:

7. From all the various types of material to support staff development, there was a particular need for documented activities. (See Sections 7.3 and 7.5)

8. From the wide variety of subject areas appropriate to staff development, there was a particular need for materials related closely to teaching and learning. (See Sections 7.4 and 7.6)
8.1 Introduction

This chapter reports on an investigation of why staff developers create materials. In common with the work reported in the last chapter, I made the investigation after the conclusion of the HERMES Project, and without the SRHE Scheme in mind. However, it was the findings from this investigation that gave me the first glimmerings of an idea - which seemed practical to implement and likely to succeed - to support staff development through materials. This idea formed the cornerstone of the eventual design of SRHE Scheme, although further investigations (see Chapter 9) were still required to refine and consolidate it.

Section 8.2 shows how the HERMES Questionnaire provided useful data on the creation of materials, plus a perspective for the next step of the investigation. Sections 8.3 and 8.4 report on this investigation, and Section 8.5 outlines the implications for the design of the SRHE Scheme.

8.2 Extent of dissemination as a perspective on the creation of materials

When I was looking through the returns from the HERMES Questionnaire, in the hope that I might spot further use for the data, I wondered whether it would be worth looking further at the differences between those staff developers who were active in producing their own materials and those who were not. Since staff development generally consisted of mounting courses and offering consultancies, all of which are live activities, the production of materials was not an essential part of staff developers' work. I thought it might be useful to try to find reasons to account for the production which was taking place.

Of the 69 respondents to the questionnaire, 36 said that they had produced materials. It is worth stressing that these 36 were not a small
sample from a much larger population, but a fairly large sample from a rather small population. The number of staff developers who produced materials was small, and the sample is likely to have included most of them.

I tried various ways of reorganising the data for these 36, in the hope that the results would turn out to be meaningful. The one which eventually gave some meaning was a classification according to the extent of the dissemination. I used three categories:

- not disseminated in any way (such materials probably consisted of little more than a few draft notes which served as prompts for the originator who was the sole user);

- informally disseminated (these materials were usually of a fairly high standard of presentation, but were used outside their home institution only by request and on a noncommercial basis);

- commercially available.

Question 15 of the HERMES Questionnaire (see Appendix I) asked those respondents who had produced materials what the extent of the dissemination was - and this provided the data for the analysis.

For 'no dissemination' and 'informal dissemination' there was little difference between university and polytechnic staff developers, and not surprisingly the full-timers produced more materials than did the part-timers. What I did find surprising, however, was the striking difference between commercial dissemination from universities and commercial dissemination from polytechnics. Of the nine author-respondents who had published their materials, eight were from universities while only one was from a polytechnic. Since there were far more staff development units in polytechnics than universities, and staff development had much more support and prestige in polytechnics, I had expected that polytechnics would be responsible for most of the commercial dissemination. My data suggested that the opposite might in fact be the case. I wanted to investigate further.

8.3 The questionnaire on the creation of materials

To explore the question of why commercially available materials might spring more from universities than polytechnics, I began by postulating why staff developers might produce materials in the first place:
1. To satisfy a perceived need. This could, for example, be a need dictated by a particular course, or by a set of circumstances peculiar to a home institution;

2. To contribute to a group commitment of some sort;

3. To be creative: to be so inspired by ideas as to be impelled to document them.

I also postulated why staff developers might want their materials published:

4. The resulting status and recognition could aid career advancement, publications being the conventional ticket to promotion;

5. In view of the general insecurity of staff development at that time of financial stringency, commercial publication could be related to job security.

My principal instrument for investigating these postulates was a further questionnaire (see Appendix IV). In 1980 I sent it out to the 23 staff developers who had indicated in the HERMES Questionnaire that they had in any way disseminated their materials. Fourteen were from universities and nine from polytechnics; nine had published their materials commercially and 14 had disseminated them only informally.

There were 19 replies. Ten respondents were from universities and nine from polytechnics; seven had published their materials commercially and 12 had disseminated them only informally.

The beginning of the questionnaire gave statements reflecting my postulates and the rest was blank for respondents to add their own reasons for producing materials. Respondents were asked to indicate the strengths of these reasons on a five point scale. The statements were:

I was one of a group committed to producing materials (to reflect Postulate 2).

Ideas kept going round in my head and I had to get them down on paper (to reflect Postulate 3).

I saw career prospects in producing materials (to reflect Postulate 4).
I thought that I - and my department - would be less vulnerable if seen to produce materials (to reflect Postulate 5).

I did not frame a statement of reflect Postulate 1 because satisfying a perceived need seemed such an obvious reason for producing materials that I suspected respondents might merely identify with it and, having done so, would not respond further. I wanted to get behind this obvious reason, to discover the extent to which other reasons played a part.

8.4 The analysis of the questionnaire

Postulate 1 was offered by 12 respondents in the free-response section at the end of the questionnaire. (Only one other reason was offered and it concerned the intention to make money.) The following quotes were typical:

"There is a need to show student teachers that learning takes place in different ways."

"The need to produce some material to meet (or attempt to meet) a particular requirement for which no known material was readily available."

"Dissatisfaction with some other learning materials."

"Saved me time in the long run."

"Belief that simulation is an important strategy for developing ideas."

"We regard it as part of the job."

These data suggested that satisfying a perceived need was a strong reason for staff developers to produce their own materials.

Returning to my postulates, I simplified the five point responses into two categories:

- points 1 - 3 would represent a weak or nonexisting reason;
- points 4 - 5 would represent a strong reason.
With regard to Postulates 4 and 5, only four respondents indicated that they were motivated to produce materials by either promotion prospects or job security needs. Nonetheless, as it is well known that academics often do decide to publish for such reasons, I was reluctant to accept this finding. So I set about cross-checking. I asked a knowledgeable person, who had not seen my data, to judge whether he considered each of those in the sample to be, on balance, settled in their present positions. He felt able to comment on 18 authors from the original sample of 23: ten from the 'informally disseminated' group and eight from the 'commercially available' group. These data told a different story from the questionnaire. Although he put all ten of the informally disseminated group as settled in their jobs, from the commercially available group he put only three as settled, ie there was a bias towards commercial publication for the less settled staff developer.

These findings seemed to indicate that authors who had not published their materials had produced them for reasons connected with enthusiasm for the job rather than promotion or job security. I believed that such materials could make a significant contribution to staff development and I wondered how the authors could be encouraged to publish. I was given a lead through the responses to Question 16 of the HERMES Questionnaire (see Appendix I); it asked respondents to indicate their perceptions of the impediments to disseminating formally. Forty six staff developers offered reasons. The most frequently occurring, to which 18 staff developers subscribed, concerned the hurdle of arranging publication: that the administrative back-up was lacking and that the effort to overcome it was out of proportion to the benefit.

With regard to Postulate 2, none of the respondents in the commercially available group turned out to be strongly motivated by a group commitment, whereas eight out of 12 of the informally disseminated group did. This suggested that the materials available commercially tended to be produced by loners, whereas those disseminated informally had grown out of a group commitment. Bearing in mind that two heads (or more) are generally accepted as being better than one, I felt that this was a pity.

With regard to Postulate 5, seven of the 12 in the informally disseminated group admitted a feeling of some sort of creative inspiration when producing their materials, against three of the seven in the commercially available group. The bias was not marked and the numbers were small. Nevertheless this might indicate that the informal disseminators tended to produce through enthusiasm, while the commercial authors saw the work as arising from necessity.
8.5 Implications for the design of the SRHE Scheme

In retrospect the investigation suggested the following implications for designing the SRHE Scheme. The numbering continues that of Sections 5.10, 6.7 and 7.7 in previous chapters.

9. A substantial number of materials existed - produced by staff developers who were enthusiastic about their work - which were unpublished, and therefore not available to the staff development community at large. The problem was largely the lack of administrative backup for the publication process. (See Section 8.4)

10. Staff developers who produced draft materials through enthusiasm for the job would be prepared to improve them to a publishable standard if there was administrative backup for the publication process. (See Section 8.4)

11. Career conscious staff developers would be prepared to put their efforts into publications of materials, rather than other types of publications, if there was administrative backup for the publication process. (See Section 8.4)

12. A commitment to other people facilitated staff developers' production of materials. (See Section 8.4)

8.6 The first inception of the SRHE Scheme

It was at this point, in the Autumn of 1980, that a plan to support staff development through materials began to dawn on me. Since staff developers were put off publishing because of the hurdle of arranging publication (see implications 9, 10 and 11), it seemed obvious that a coordinator should take on the task for them. The coordinator would liaise with a publisher and negotiate publication.

The idea was not new. The polytechnics had set up a similar scheme, the SCEDSIP Trypac/Polypac scheme of 1976 (Fox 1976b). The plan was that polytechnic authors would create materials, Trypacs, which the home institution would type and duplicate, and that other polytechnics would conduct field trials. After modification in the light of feedback, the materials would then be published centrally by SCEDSIP as Polypacs. Unfortunately, however, this scheme never properly got going, and later collapsed. There were several contributing reasons (Fox 1980). Funds for an envisaged writers' conference never materialised, and although funds for small-scale distribution were available from the authors' home institutions, they were not forthcoming on a sufficiently large scale for central publication. Also, whereas there was an adequate commitment towards creating materials, feedback on other authors'
materials was badly lacking.

If a similar scheme were to be set up, there was a clear lesson to be learnt from the SCEDSIP experience. A reliable means of arranging feedback was essential if authors were to obtain sufficient constructive criticism to improve their materials to publication standard. Implication 12 gave me an idea how this might be accomplished. Since group commitment seemed to be facilitating factor, I envisaged the setting up of a working group of authors. As this would probably be sufficiently large to be unwieldy, I thought that it should be made up of subgroups of two or three members. A condition of membership of the larger working group would be an obligation to improve the materials of the other members in the subgroup. In the light of experiences elsewhere, I felt very strongly that this should not be an armchair activity. One way would be for group members to sit in on sessions where an author demonstrated his material, and another would be for them to try out each others' materials in their own staff development work.

I felt that there would be no shortage of members for the groups. Implication 9 suggested that potential members already existed, in that they had already produced unpublished materials; and Implication 11 suggested that career conscious staff developers would be interested in joining.

8.7 Implications for the design of the SRHE Scheme from the SCEDSIP experience

As outlined above in Section 8.6, there were the following implications for the design of the SRHE Scheme from the SCEDSIP Trypac/Polypac experience.

13. The SCEDSIP Trypac/Polypac experience suggested that funds needed to be available to meet cash-flow problems associated with publication. (See Section 8.6)

14. The SCEDSIP Trypac/Polypac experience suggested that it would be difficult to encourage authors to give feedback on each other's materials. (See Section 8.6)
Chapter 9

DESIGNING THE SRHE SCHEME: DOCUMENTING, PACKAGING AND MARKETING MATERIALS

9.1 Introduction

This chapter is concerned with documenting, packaging and marketing materials. I investigated general aspects of documenting, packaging and marketing - as for the previous investigations - for reasons quite unconnected with the SRHE Scheme. However, once the idea described in Section 8.6 had taken shape, I felt that some further, more specific investigations were necessary to turn it into a viable scheme.

My approach was to identify characteristics of successfully disseminating materials to see what I could tease out from them. Section 9.2 is concerned with these characteristics, as identified through questionnaire returns from users of materials in general. Section 9.3 is also concerned with such characteristics, but as identified by me, following appraisals of collections of documented activities and interviews with people who had used them. The chapter closes in Section 9.4 with the implications for the design of the SRHE Scheme.

9.2 Characteristics of successfully disseminating materials

I approached this part of the investigation on packaging and marketing through a questionnaire to the staff developers who had used materials. The study was based on the following research questions.

(A) What routes exist whereby staff developers can learn which materials are available?

(B) What sort of needs should materials satisfy if other staff developers are to adopt them?
(C) How well should materials be presented, packaged and documented if other staff developers are to use them?

(D) How does a staff developer become sufficiently familiar with material to feel competent to use it himself?

The following subsections are concerned with collecting the data and analysing and discussing the results.

9.2.1 Collecting the data

I identified 42 staff developers from the returns of the HERMES Questionnaire as having used materials produced outside their own institutions. I sent each of them a questionnaire which probed aspects related to my Research Questions. This questionnaire was in three versions: one for each of the following categories of staff developers:

- those who adopted materials directly
- those who adapted materials
- those who used them merely as sources of ideas

I was able to identify staff developers in each of these categories because Question 7 of the HERMES Questionnaire (see Appendix I) had asked respondents to specify whether they had adopted the materials directly, adapted them for their own use and/or used them as sources of ideas.

Appendix III shows the version of the questionnaire for 'adapters'. The one for 'adopters' and 'users for ideas' differed only in the covering letter and in Question 4 which was omitted as meaningless for the 'users for ideas'. As the questionnaire was modified into more than one version, it was easiest to prepare it with the questions unnumbered. The numbers on the copy in Appendix III were inserted afterwards for reference purposes.

9.2.2 Results and discussion

A noteworthy finding was that, in spite of the respondents having previously categorised themselves as 'adopters', 'adapters' or 'users for ideas', their elaborative comments clearly showed that what was happening in practice was various degrees of adaptation. It was therefore impossible to make any conclusions specific to adoption, adaptation and use for ideas. I therefore pooled the 36 responses from all three groups for the rest of the analysis.
Question 1 shed light on Research Question (A) about routes for identifying available materials. Human channels turned out to be strikingly more effective than formal publicity, with 47 mentions against 11 other mentions. Most often the eventual users were introduced to materials by participating in sessions where the activities were demonstrated. Slightly less often, it was through informal contact with the author or another user. My involvement with HERMES offered a possible explanation. The HERMES List (see Section 5.8), which indicated the source of each item in the collection, showed that most non-book materials were almost always disseminated by the authors themselves or by their separate institutions. The publicity was therefore not centrally organised. Elaborative responses to Question 1 supported this explanation. In the few cases where the users had learnt of materials through formal publicity, the agents were diverse: newsletters from institutions, literature from the Council for Educational Technology, Nexus, and the HERMES Preliminary Catalogue (see Section 5.8).

Another reason for human channels being such successful disseminators could have stemmed from users finding it easier to familiarize themselves with the strong points and likely pitfalls of an activity by experiencing it themselves or by discussing it. This related to the familiarisation process of Research Question (D). Responses to Question 9 were pertinent. They indicated why respondents had rejected some materials. 12 out of 24 mentions concerned the outlay of time and effort for familiarisation and adaptation. This suggested that documentation should try to meet this problem. Responses to Question 4 supported this further by showing that familiarisation/adaptation was not dauntingly great for successfully disseminating materials.

Returning to the responses to Question 9, it was encouraging that even in a period of financial stringency, only one person rejected materials on grounds of cost. Responses to Question 5 added support to cost not being a prime consideration. 23 of the 32 mentions indicated acquisition from the source or author, although they did not always say whether money changed hands.

For Question 9, the most subscribed reason for users rejecting materials concerned inability to meet needs. This linked with Research Question (B), although the nature of the needs was not generally elaborated in this response. Response to Question 2 showed that staff developers were primarily concerned with the needs of meeting course objectives. Nevertheless materials were used for less formal reasons. Although there were 23 mentions in terms of materials relating to prespecified course objectives, there were 14 mentions in terms of the materials seeming stimulating and enjoyable and likely to lead to learning that would be useful somewhere, sometime.

Questions 6 and 7 probed issues relating to packaging, printing and documentation as raised in Research Question (C). Since there were only four
mentions in terms of bad packaging and printing, and only 11 in terms of bad
documentation, successfully disseminating materials appeared to be
careracterised by satisfactory printing, packaging and documentation. The
elaborative comments indicated that 'satisfactory' meant neat, clean and tidy,
rather than expensively glossy.

9.3 Developing a housestyle for presenting and packaging documented
activities

Since I already had the inkling of the scheme into which the SRHE Scheme
eventually grew - and I therefore knew that the need was for productions of
documented activities, rather than of any other types of material - I set
myself the task of developing a housestyle for the presentation and packaging
of documented activities. My first step was to survey a wide range of existing
documented activities. To this end, I visited the library of the British
Association for Commercial and Industrial Education (BACIE) and the BACIE
1980 Exhibition; I obtained private interviews and viewings at two well-known
commercial publishers of games for management training; I arranged
interlibrary loans of advertised commercial materials; and I reappraised the
collections in the HERMES resource centres. Then I analysed and compared the
documentation, presentation and packaging of collections from five readily
accessible and well-known firms, publishers or consortia:

(a) a series on management training produced by an industrial
training publisher;
(b) a collection of games, produced by a commercial management
training concern;
(c) annuals, specializing in human relations training;
(d) a collection of staff development activities produced by
an overseas university;
(e) a collection of staff development materials produced for
a scheme no longer in operation by a consortium of British
polytechnics.

Details of (a) - (e) are in Appendix V.

The investigation was in three parts. The first consisted of interviews with
some experienced authors and users of documented activities; the second was
an analysis of the above materials based on the SAGSET data sheet headings
(SAGSET Council 1977); and the third was an appraisal of the packaging of
these materials. These three aspects are discussed in more detail in the
following subsections.

9.3.1 Conclusions from the interviews

As mentioned above, I interviewed experienced authors and users of documented activities, with a view to uncovering any information which might contribute to producing a housestyle for presenting newly produced documented activities. The following three quotes summarize general feelings:

"Problems with using other people's materials seem to be partly to do with hidden assumptions about the nature or purpose of teaching and about the purpose of the activity. These are seldom explicit in the instructions. Instructions should not only state exactly what the facilitator is to do at different stages, but why and what would constitute an acceptable outcome."

"My experiences of using other people's materials have too often been disastrous, because there were no forewarnings of what to expect, what might go wrong and how to cope if it did. This sort of information needs to be given."

"There is a marriage between the institution, the course participants and the activities that are presented - and these marriages are likely to be very different in different situations. Guidelines on adaptation are therefore required."

The interviews indicated two major problems:

- that insufficient practical advice tended to be given on how to run activities.
- that the activities tended not to be transferable to anywhere outside the author institution.

This last point related to my finding of Section 9.2.2, namely that users always adapt materials to some extent, rather than adopting them directly. I concluded that newly produced documented activities should be written under headings which would enable authors to focus on these criticisms and hence minimise their applicability.
9.3.2 Conclusions from the analysis based on the SAGSET Data Sheet

The SAGSET Data Sheet was designed as a checklist of points for which a potential author should look when scrutinising a game or simulation. It was therefore comparatively easy to adapt it into Guidelines for Authors of documented activities. This I did. Features are the 'Organizers Notes' heading and the 'Variations' heading, both of which were in direct response to the points made in the interviews (see Section 9.3.1). The Guidelines were subsequently improved through discussion and use. They are reproduced in Appendix VI.

9.3.3 Conclusions from the appraisal of packaging

The appraisal of packaging indicated that documented activities are most cost-effectively published in collections. They appear more professional if the pages are printed on both sides, the print being of crisp outline and proportionally spaced. They are easier to follow and work with if different coloured paper is used for different parts: such as for an introduction or for the master of a handout.

9.4 Implications for the design of the SRHE Scheme

The findings reported in this chapter led to the following implications for the eventual design of the SRHE Scheme. The numbering continues that of Sections 5.10, 6.7, 7.7, 8.5 and 8.7.

15. Staff developers use materials in different ways on different occasions: sometimes they adopt them directly; sometimes they adapt; sometimes they use them merely for sources of ideas. (See Section 9.2.2)
16. Human channels seem to be more successful than formal publicity (as it has existed so far) for disseminating materials for staff development. (See Section 9.2.2)
17. Cost does not seem to be of major importance to staff developers when buying materials. (See Section 9.2.2)
18. Although staff developers do select materials to meet specific needs, they also make the selection on the grounds of what happens to appeal to them. (See Section 9.2.2)
19. Presentation and packaging seem to be acceptable, as long as the materials are neat and tidy, irrespective of whether they are expensively glossy. (See Section 9.2.2)
20. Other people's materials are particularly difficult to use where the implicit assumptions of the authors are not made explicit, and where the activities are not easily transferable. (See Section 9.3.1)

21. My appraisal of commercially available materials, with reference to the SAGSET Data Sheet, suggested a basis for Guidelines for Authors. These were subsequently improved through discussion and use. (See Section 9.3.2)

22. Documented activities seem easier to use if the different sections are made obviously different through the use of coloured paper. (See Section 9.3.3)

23. Materials are produced most cost-effectively in collections. (See Section 9.3.3)

24. Materials appear more professional if the pages are printed on both sides; and the print is of crisp outline and proportionally spaced. (See Section 9.3.3)
Chapter 10

THE SRHE SCHEME

10.1 Introduction

This chapter is concerned with the SRHE Scheme as it was eventually implemented. Section 10.2 reports on how it came to be accepted by the Society for Research into Higher Education (SRHE), and Section 10.3 pulls together the findings of previous chapters and outlines the full design. Section 10.4 discusses the SRHE Scheme as an innovation in its own right, in contrast to an idea, practice or product, perceived as new by individuals.

10.2 SRHE ratification for the scheme

As described in Section 8.6, some of my findings seemed to indicate a viable way of supporting staff development through materials. Essentially authors would belong to a group so that they could conduct field trials on each other's materials. A coordinator would coordinate the work and see the materials through to publication.

With the demise of the Coordinating Committee for the Training of University Teachers (CCTUT) (CCTUT 1981), the Society for Research into Higher Education (SRHE) was considering taking a greater part in academic staff development. So I put a proposal to SRHE that it set up a working group to produce staff development materials for publication by the Society. This was accepted. In direct consequence, a working group to support staff development through the production of materials was set up and subsequently approved by the SRHE Activities Committee. This was in December 1980. The terms of reference for its work were as follows:

To produce and mutually evaluate materials to support staff development in higher education.
- To submit such materials for publication by the Society.

- To raise funds in support of its activities.

Membership of the group will be open to all who are willing to

a. Produce materials AND

b. Assist in the improvement of the materials produced by at least one and possibly two other members of the group.

The work will be coordinated and edited by an editor who will be advised by an Editorial Board.

The working group will be producing materials which can be adopted directly or adapted for use with courses, workshops or discussion groups. Examples include exercises, structured activities, games, simulations and dual-purpose materials which may serve either in support of group work or as guided reading/structured activities for individuals.

I agreed to act as coordinator and editor.

The SRHE Publications Committee subsequently agreed to publish a material on the basis of (a) a reviewer’s report and (b) what came to be called a 'pedigree'. A pedigree was to be two-pronged. The first prong was to be a statement tracing the history of the activity: its aims, who it had been used with, how it had been improved through use, etc. The second prong was to concern the documentation: who, besides the author, had used the material to run the activity, and what changes in the documentation had consequently been made.

To keep publishing costs down, a condition of publication was that the group should provide camera ready copy for its materials.

10.3 The complete design of the SRHE Scheme

The rationale for and complete design of the SRHE Scheme relies on all the
points listed at the ends of Chapters 5 to 9, under the headings 'Implications for the design of the SRHE Scheme'. For convenience of reference, these are collected together in Appendix VII. The numbers there correspond to the following numbers in brackets.

The SRHE Scheme was set up to fill a need for materials among all categories of staff developer (6). It would be committed to bringing materials to the users rather than the users to the materials (2) (4). Staff developers who were prepared to produce materials would form a working group of the Society for Research into Higher Education (SRHE). Since the group might be large enough to be unwieldy, it would consist of subgroups of two or three members. A condition of membership would be an obligation to improve the materials of the other members in the subgroup (12) (14). A coordinator would take on the task of dealing with authors, arranging feedback and arranging publication (9) (10) (11).

The materials of the working group would document training activities for staff developers to run on workshops and courses (7). Masters of any required resources such as handouts, OHPs etc would be included (21). Materials such as full-length books about staff development and non-print materials would not be within the group's brief (1). The subject areas for the materials would be oriented principally to teaching and learning (8), but other subject areas would also be acceptable (5) (18).

To foster consistency of presentation while ensuring that particularly salient information would not be omitted, authors would write their activities within a housestyle as laid out in Guidelines for Authors (3) (21). Features would be the headings Organiser's Notes (20) and Variations (15).

The materials of the group would be published at intervals in collections (23). To achieve consistency of typeface, all the pages of information for organisers would be typed centrally and professionally (24). They would eventually appear double-sided (24) on yellow paper (22). To keep costs down, authors
would provide camera-ready copy of masters for their own resources (e.g., briefs for participants, handouts, checklists etc) since variations of typeface should add attractive realism. Users would be permitted to copy. To facilitate this, the final product would appear on loose A4 sheets, punched ready for insertion in the user's own file. A label for the file would be provided.

SRHE would take on the cost of publication (13) and the task of printing and packaging. This would have to be neat and of a professional appearance, but it need not be expensively glossy (19). SRHE would also take on the formal task of marketing, but the individual members of the group would do their best to publicise the work of the group, particularly by running the activities at conferences (16). SRHE would decide matters such as cost, which would not be central to the success of the scheme (17).

10.4 The SRHE Scheme as an innovation in itself

In order to use the data from the implementation of the SRHE Scheme to test the models for innovation (see Chapter 4), it is not necessary that the scheme be objectively new. It merely has to be subjectively new to the people concerned: the people whose behaviour the models interpret. Nevertheless, the SRHE Scheme does have some claims to being objectively new. This section considers how it differs from the SCEDSIP Trypac/Polypac scheme, now no longer in existence, the only scheme with which it shared any features.

- Unlike the SRHE Scheme which grew out of the conclusions from my researches (See Appendix VII), the SCEDSIP Trypac/Polypac scheme grew out of the wisdom, experience and understanding of staff developers in the polytechnic sector;

- Unlike the SRHE Scheme, the SCEDSIP Trypac/Polypac scheme had no group structure and although materials were submitted to a coordinator, there was no group commitment to field trials and feedback. Indeed this
was probably one of the main reasons why the SCEDSIP Trypac/Polypac scheme failed.

- Unlike the SRHE Scheme, the SCEDSIP Trypac/Polypac scheme was concerned with all types of staff development materials in all areas. Unlike the SRHE Scheme, it was not just concerned with documented activities.

- Although the SCEDSIP Trypac/Polypac scheme did have a housestyle, it was less formalised than that of the SRHE Scheme. In particular there were no Organiser's Notes or Variations, although coloured paper was an integral part.

- The materials of the SCEDSIP Trypac/Polypac scheme never got to publication before the scheme collapsed. Procedures and policies for printing, packaging and marketing were never agreed. Also there were no funds for publication. For the SRHE Scheme funds for publication are being met by SRHE.
Chapter 11

USING THE SRHE SCHEME TO TEST THE MODELS

11.1 Introduction

In this chapter the models are applied to the innovatory behaviour of authors and potential authors within the SRHE Scheme. The purpose is to appraise the usefulness and limitations, both of the models themselves and of the SRHE Scheme as a means of providing appropriate data.

To avoid repetition within the case studies, Section 11.2 outlines the main events which affected everyone concerned. Then Sections 11.3 and 11.4 discuss and define some terms used in analysing the data. The case studies themselves are in Section 11.5. The chapter closes with a discussion in Section 11.6.

11.2 Principal events

The following are the principal events which, in affecting the SRHE Scheme generally, affected everyone concerned. The data are taken from letters sent to me, copies of letters I sent, minutes of meetings and my diary. All these documents were produced at the time of the events concerned, with the sole purpose of keeping administrative records. I did not know that I would eventually be using them to provide data for studies of the innovatory process. Consequently there is much in favour of their validity. As Lindquist (1978 p 53) points out, most studies depend on stories told in retrospect, which in fact report the biases of the observer rather than facts documented at the time.

June 1980. I submitted a paper to the SRHE Publications Committee proposing that it consider publishing activities for academic staff development. There was interest and request for more information.

9 October 1980. I submitted a more detailed proposal and an author's questionnaire to the SRHE Publications Committee. Some examples of materials were appended.
7 November 1980. The SRHE Publications Committee met. I was given a
usefully vague remit. Essentially I could organise things as I liked, with the
proviso that I should set up a working group and put a proposal to the SRHE
Activities Committee that the group be accepted as an official SRHE working
group.

13 November 1980. I phoned various people who, from my questionnaire
returns, looked as though they might be prepared to join the working group.

20 November 1980. I sent out information on the scheme to those people I
could not reach by phone. I prepared more detailed information for sending
out, as and when people requested it.

3 December 1980. The Editorial Board met to advise me as coordinator and
editor of the scheme.

5 December 1980. The SRHE Activities Committee accepted the working group
as an official working group of the Society.

21 December 1980. At the annual conference of the SRHE, there was a
lunchtime meeting between the chairman of the Editorial Board, Lewis Elton;
the retiring chairman of the SRHE Publications Committee, Sinclair Goodlad;
the temporary incoming chairman, Colin Flood Page; and myself. Sinclair
Goodlad suggested that, as the documentation of the materials was as
important as the activities themselves, a 'pedigree' on both should accompany
each submitted material.

7 January 1981. Lewis Elton and I met with the SRHE Publications Officer to
talk about practicalities of publication.

30 January 1981. I submitted a paper to the SRHE Publications Committee,
reporting on the lunchtime meeting of 21 December. The committee agreed to
the pedigree system for appraising submitted materials. They also agreed that
three people (Donald Bligh, David Jaques and Lewis Elton) should scrutinise the
pedigrees plus the materials and that I should submit these for the June
meeting of the SRHE Publications Committee.

3 March 1981. I formally organised field trials of the materials and set up a
system for administering them.

14 April 1981. I sent out a memo to authors explaining the submission of
pedigrees and giving a sample pedigree.

26 May 1981. Lewis Elton forwarded the materials of the group to Donald Bligh and David Jaques. The covering letter also went to Colin Flood Page. Donald Bligh and David Jaques were subsequently extremely critical of the materials and the fieldtriailling. This was a very real disappointment to the members of the working group who felt that they had worked hard and kept to the 'rules of the game', as laid down by the SRHE Publications Committee.

9 June 1981. There was a telephone conference between Lewis Elton, Donald Bligh, David Jaques, Colin Flood Page and myself. Donald Bligh and David Jaques would not recommend publication. It was agreed that they would put their criticisms in writing, that the authors would act on them and that the revised materials should be resubmitted to new scrutinisers. Alex Main and Trevor Habeshaw subsequently agreed to take on this task. It was also agreed that, with satisfactory reports from Alex Main and Trevor Habeshaw, the decision to publish would be made by Colin Flood Page taking chairman's action on behalf of the the SRHE Publications Committee.

14 June 1981. I sent out a progress report to authors, adding that I hoped to move to camera ready copy by September.

Late June 1981. I sent authors the feedback from Donald Bligh and David Jaques, requesting that they revise their materials accordingly and send them to the SRHE Publications Officer.

15 September 1981. The SRHE Publications Officer wrote to say that she had forwarded materials to Alex Main and Trevor Habeshaw, and had forwarded the resulting comments to Colin Flood Page.

16 December 1981. Colin Flood Page wrote to Lewis Elton, enclosing comments from Alex Main and Trevor Habeshaw, and agreeing that publication could go ahead, once these comments were acted upon.

Late December 1981. I sent authors the feedback from Alex Main and Trevor Habeshaw, requesting that they revise their materials accordingly.

January - April 1982. I liaised with the SRHE Publications Officer over aspects of publication, and I prepared camera ready copy.

20 April 1982. I sent out proofs to authors.
4 May 1982. I sent a note to members of the working group telling them that Volume 1 of Training Activities for Teachers in Higher Education had gone to press.


11.3 Definitions of the stages of the SRHE innovation

In order to analyse developmental innovatory behaviour within the SRHE Scheme, the innovation stages needed to be fairly tightly defined. All innovations have their own peculiarities which make it appropriate to modify Rogers's stages slightly (see Section 3.5). Such modifications are merely a convenience for the purpose of analysis. They are of little importance as far as the developmental approach to innovation is concerned, as long as they delineate progress through the innovation. For the SRHE innovation, it seemed appropriate to keep Rogers's definitions in general, but to subdivide the trial stages as follows:

AWARENESS: person reads or is told about the SRHE Scheme for authors.

INTEREST: person requests further information.

EVALUATION: person ponders on trying the innovation. If he has materials laid out in some other form, he sends them in to test reaction.

TRIAL:

trial(1): he rewrites the materials in the scheme's accepted housestyle - or arranges for or allows someone else to do it.

trial(2): he sends out materials for trials - or arranges for or allows someone else to do it.

trial(3): he updates materials in the light of feedback from field-triallers - or arranges for or allows someone else to do it.

trial(4): he updates materials as required by the first set of SRHE scrutinisers - or arranges for or allows someone else to do it.
trial(5): he updates materials as required by the second set of SRHE scrutinisers - or arranges for or allows someone else to do it.

ADOPTION: he performs the final task required for publication, namely he supplies some camera-ready copy, as required - or arranges for or allows someone else to do it.

11.4 Identifying and categorising data as factors for the models

The data for drawing the models for each individual came from letters sent to me, copies of letters I sent, minutes of meetings and my diary. In order to tease out the data and categorise them as factors relevant to the models, I had to have a clear picture of what I was looking for and how I was going to treat it.

As explained in Chapter 4, I developed two models: a macromodel and a micromodel. For the macromodel, the normal factor was to be 'the perceived total environment' and the splitting factor was to be 'stage of innovation'. For the micromodel, the normal factor was to be 'hygiene', the splitting factor 'motivators', the bias factor 'my work' and the butterfly factor 'uncertainty'. Before I made any analysis, I had to decide exactly how to define these in order to identify them from within my data.

For some of the factors, recognition and identification would be no problem. For example, there could be little doubt over the bias factor. Either I had, or I had not taken over the task and done it for a person. Certain changes in hygiene would be relatively easy to recognise and identify too. Herzberg's 'company policy', 'administration', 'supervision', 'salary', 'interpersonal relations' and 'working conditions' would not be difficult to relate to the SRHE innovation - although salary would not be relevant to this work.

Herzberg's motivators were a little more difficult. In his context they were: 'achievement', 'recognition', 'work itself', 'responsibility' and 'advancement' - but I had to interpret these in a very different context. 'Achievement' (not to be confused with advancement or work itself) can be correlated with progress. Hence it would be easy to recognise and could be treated as increasing progressively with every stage of the innovation. 'Recognition' could be immediate by virtue of the status associated with the task, or it could be at some time in the future, when it would be associated with advancement (or promotion). The former is related to responsibility for doing a job well. In the context of authors within higher education, I prefer the term 'role-perception' (Lawler and Porter 1978). I felt that such role-perception would be likely to be a particularly important motivator within the SRHE Scheme, where each
individual knows that others are relying on him and that if he backs out, they will be at a disadvantage. I prefer Handy's 'instrumentality' for any anticipated advancement or promotion. Instrumentality is unlikely to change much as the innovation progresses - although it may, as may the needs that give rise to it. (Changes in needs would be reflected in hygiene.) 'Work itself' is better known as Maslow's 'self actualisation'; I prefer this term. Thus, the motivators (the splitting factor) would consist of progress, role-perception, instrumentality and self actualisation. These would be fairly easy to recognise and identify from within my data.

I felt that it would be much more difficult to show the existence of 'uncertainty' which was to be the butterfly factor, even if it was there; sometimes it would have to be hypothesised from the other data. (Incidentally it is worth pointing out that the butterfly factor would be positive only when uncertainty existed. Certainty, either positive or negative would be treated as a favourable or unfavourable perceived environment, and would be reflected in hygiene.)

Since Catastrophe theory is qualitative rather than quantitative, it is not necessary to measure any of these factors - only to determine how they change, qualitatively with the stages.

11.5 The case studies

This section gives case studies of innovatory behaviours of authors within the SRHE Scheme. It uses the models to express these behaviours, highlight aspects of them and add insights to them. It therefore tests the models by probing their limitations and the limitations of the SRHE Scheme in providing appropriate data. Such a goal cannot be achieved by studying the behaviours of those authors who have progressed smoothly and uneventfully from awareness to adoption. Rather, the cases must illustrate various manifestations of rejection and potential rejection. Examples must include smooth rejection; catastrophic rejection; rejection in conjunction with hysteresis; bias preventing rejection; and marking time as a possible step towards rejection. Case studies chosen for these characteristics must - and do - tell dismal stories. They are not representative of those authors who progressed comparatively smoothly through to adoption. It has not been possible to supply one of these for comparison, because, to date, such authors either submitted more than one material or wrote their material jointly with someone else. It proved too difficult to disentangle how, in the first circumstance, events connected with one material affected how the individual perceived the environment for the other and, in the second circumstance, how the behaviour of one author.
affected the other's perceived environment.

In order not to confuse the models by excess information, non-essential labelling is omitted. Dates on which an individual reached a position on the behaviour surface are frequently given only to the nearest month. For example 11/80 represents November 1980. Where the sequencing of events demands more precise dating, the day of the month is also given - but this is necessarily an approximation, because I cannot know how long a letter took in the post or whether the addressee was available to read it when it arrived.

The case studies are presented in approximate order of complexity.

11.5.1 The case of A

This case study illustrates a fairly straightforward smooth rejection. It concerns A who has a responsible job in educational administration.

In 1979 I attended a conference for staff developers, where A ran a simulation which struck me as particularly effective. So on 19 Nov 1980 I wrote to him, informing him about the SRHE Scheme and inviting him to document the activity. I requested that he respond by telephoning me. Once my letter had arrived - presumably sometime in the third week of November 1980, he was at the awareness stage.

I heard nothing from A for a very long time. Eventually I received a letter from him dated 29 April 1981 saying that he was happy that we should publish his activity with appropriate acknowledgements, but that he could not give the time to documenting it himself. He was now clearly at the rejection stage.

In view of the length of time between November and April, it is probable that when A got my letter, he was too busy to to make any decisions regarding its implications, and that he just filed it away for later. In early April, he came across it, realised that he ought to answer it out of politeness (role-perception). He suggested that the material be published without him doing any further work on it himself, but with acknowledgements, so he may have had other motivators: perhaps recognition through the publication, or self-actualisation through his activity being used. Whatever, his motivators were, they forced him to consider the implications of joining the SRHE Scheme. These were that he had not enough time to take on the work. This realisation forced him to rejection.

Figure 11.1a shows A's behaviour on the macromodel. The perceived total environment is at a neutral value at the awareness stage in November 1980, labelled 11/80. These factors are perceived as unfavourable in April 1981, labelled 4/81, when A rejects. The rejection is smooth. It takes place before the evaluation stage and does not represent a sudden reversal in behaviour.
Fig 11.1a The macro model for A showing straightforward smooth rejection of the innovation

Fig 11.1b A micro model for A showing behaviour on the task of seeking more information about the innovation
Figure 11.1b shows A's behaviour using the micromodel for the task (or potential task) of reaching the interest stage. He starts out having forgotten about the task. When he is reminded (by coming across my letter) he has the choice of forgetting about it again or taking some other action. Presumably motivators were sufficiently favourable for him to want to act. However hygiene was unfavourable for the innovation; so he rejected the task of seeking more information.

11.5.2 The case of B

This case study illustrates a catastrophic rejection. B is an active part-time staff developer in a university. There would probably be general agreement that he is well-liked in staff development circles because of his outgoing personality and helpful nature.

I contacted B by phone on 13 November 1980 in the hope that he would have draft materials for the SRHE Scheme. He asked for more information. He thus reached the awareness and interest stage together on this date. He may have been motivated to ask for more information because of 'role perception', ie just to be polite and helpful to me, but he probably actively wanted to join the scheme, because he wrote to me on January 15th 1981 saying that he had an activity in mind which he and a colleague had devised together for a recent course. He wrote that he had written to his colleague in this connection and would be in touch shortly. Accordingly B had reached the evaluation stage sometime before January 15th and had decided that it was worth his while to progress with the innovation.

As I heard nothing from B for some time, I wrote to him on March 3rd to see how matters were progressing. I received a reply dated 18th March saying that his colleague was contemplating publishing a book of workshop activities and wanted to keep anything in which he had been involved for that. Consequently, he, B, could regretfully no longer offer the activity to the SRHE Scheme. This was a complete reversal of B's initial intention and was therefore a catastrophic rejection of the innovation.

Figure 11.2a shows B's overall behaviour on the macromodel. He reaches the awareness stage on 13 November 1980, labelled 13/11/80. He is motivated to reach the interest stage out of role-perception (politeness to me) and, according to his later actions, some motivations for joining the SRHE Scheme. Presumably he realised that he and his colleague had a suitable activity, which meant that hygiene was favourable too. All these factors combined to make him perceive the total environment as sufficiently favourable to be worth requesting more information. Hence he reached the interest stage on 13th November, labelled 13/11/80. Since he then wrote to his colleague, presumably
Fig 11.2a The macromodel for B showing catastrophic rejection of the innovation

Fig 11.2b A micromodel for B showing behaviour on the task of sending in his activity
he reached the evaluation stage sometime afterwards, still perceiving the total environment as favourable. There is no way of knowing the date when this happened. It would be around December 1980, labelled as 12/80. Then, sometime afterwards, between the evaluation stage and the trial (1) stage (labelled 2/81) his colleague's reaction made B's perceived total environment drastically less favourable. This large movement parallel to the axis of the "perceived total environment", in the unfavourable direction, caused B's behaviour to fall over the lip of the pleat to catastrophic rejection.

It is possible to use the micromodel to look at B's behaviour in any of the tasks he undertook in connection with the innovation, eg seeking more information about the innovation; or deciding whether or not to evaluate the innovation. Yet, although this is possible, it is also trivial, because B's behaviour in these tasks was smooth and uneventful. It is more interesting to use the micromodel to look at his behaviour on the task of sending me the activity. This is shown in Figure 11.2b. The surface is accordingly labelled: 'do not send material', 'forget about sending material', 'dabble at sending material', and 'send material'. B was probably at some neutral position of motivators and hygiene at the back of the behaviour surface, when his colleague's letter arrived. The macromodel shows the letter changing hygiene unfavourably and increasing B's motivators (in connection with role-perception of being fair to his colleague). Since B was unlikely to be in the act of wrapping the material to send it to me (ie at the front of the top sheet of the behaviour surface), the decision not to send the material was unlikely to be catastrophic. This is in contrast to the decision to reject the innovation, which was catastrophic.

11.5.3 The case of C

This case study illustrates the the butterfly factor and a rejection which can be considered as on the boundary of catastrophic and smooth. C is an experienced staff developer in a polytechnic, who has an international reputation for publications in the area of staff development. It is therefore reasonable to assume that he finds his publishing activities satisfying in some way.

I contacted him by phone on 13 November 1980 to inform him about the SRHE Scheme, in the hope that he would join. He asked for more information, presumably either because he was stimulated at the prospect of further publishing activities or because role perception made him want to be polite to me. Perhaps it was both. He thus reached awareness and interest together on the same date, labelled 13/11/80 on the macromodel in Figure 11.3a.

I sent him further information on 20 November 1981. On 25 November he wrote to ask whether it was true that there were no funds for the activities...
Fig 11.3a The macronodel for C

Fig 11.3b A micromodel for C showing the effect of the butterfly factor
of the scheme. In fact this was a perceptive question because that very issue was causing me major concern. In asking such a question, C showed that he had already reached the evaluation stage. The date of this occurrence is labelled on Figure 11.3a as 7/11/80. In his letter of 25 November, C went on to write that in the circumstances he would wait a while before "throwing in my lot with you". This behaviour is labelled 25/11/80 on the macromodel; it shows C at the point of the cusp, poised between progress, catastrophic and non-catastrophic rejection.

On 11 Dec 1980, I replied in as buoyant tones as I could honestly muster: that it was SRHE policy that the expenses of members of all working groups, not only this one, be funded by their institutions, and that the terms of reference for the SRHE Scheme included raising funds to support its activities. I also tried to be encouraging by pointing out that I had enough materials to aim for submission to the Publications Committee the following January. I added that I hoped he would consider joining us. He never answered this letter.

On 17 March I wrote to C again to put him in the picture regarding the progress of the working group and to give him synopses of our materials. I wrote that we were submitting the following June - and that I still hoped he would see his way to joining us. He never answered, and I did not write again. I believe that he was sufficiently astute to realise that, as the SRHE Scheme was so young and as funds were generally so scarce, joining might well result in wasted effort on his part. This supposition is shown on the macromodel in Figure 11.3a by a decrease in the perceived factors favourable to the innovation. Since the actual date of C's rejection of the innovation is not known, it is shown as 7/1981.

It would be possible to draw a micromodel for C's behaviour in the task of reaching the interest stage. Hygiene would be constant, because it can be assumed that if hygiene allowed C to publish elsewhere it would not be adverse for the SRHE Scheme before he had evaluated its specific ramifications; and motivators would increase due to progress within the innovation and due to the motivators which made C publish elsewhere. Such a micromodel would provide little insight or understanding, however, because C's behaviour was smooth and uneventful.

It is interesting, though, to draw a micromodel for the potential transition between evaluation and trial(1), as shown in Figure 11.3b. C never made this transition. Instead his uncertainty about funds caused the butterfly factor to come into operation, and, as the motivators to evaluate the innovation increased, he entered the pocket of uncertainty. Then having evaluated unfavourably, the dissatisfying factors associated with the SRHE Scheme caused him to reject the transition to trial(1) and ultimately the entire
11.5.4 The case of D

This case illustrates catastrophic rejection with hysteresis, and bias. It concerns D who has a part-time responsibility for staff development at a polytechnic.

On 14th November 1980, I phoned D to tell him about the SRHE Scheme. He asked for more information. The motivators could have been role-perception in that he wanted to be polite to me, but - as he immediately submitted an activity - they were probably largely in connection with achievement and self-actualisation. D reached awareness and interest on this same occasion.

The covering note with D's activity was dated the same day as our telephone call. Such an immediate action indicates strong motivators. He therefore reached the evaluation stage on the same day as he reached the awareness and interest stage.

In late December 1980, I met D at an SRHE Conference, where he ran his activity. Afterwards I gave him feedback to help him improve the activity for use by someone other than himself, and to draft it in the SRHE housestyle. If he had taken this as adverse criticism, it could have counted as making hygiene less favourable. On the other hand, if it was taken as constructive, it would have counted as making hygiene more favourable. I take it as the latter, since D agreed to redraft his materials to include the points I suggested. On 22 January 1981 he sent me his redrafted material. It was not, in my opinion, of a standard for submitting to the SRHE publications Committee. So on 24 January I redrafted it according to our housestyle. I sent D a copy for him to proof read and change if I had misrepresented him. I had typed it on a word processor, so D knew that any changes could easily be incorporated. He was now at trial(1), partly due to his own efforts and partly due to mine. His own efforts would have increased the motivators due to achievement associated with progress, and my redrafting would have made the hygiene more favourable. Both would have made the perceived total environment more favourable.

On 10 February I wrote to D telling him of the outcome of the SRHE Publications meeting. I wrote that I needed the corrections to my draft of his material and I asked him if he would prepare himself for conducting field trials of other members' materials so that they could construct pedigrees for submission at the June meeting. On February 27 D returned the draft of his material with the requested corrections. These concerned typing errors rather than representational misunderstandings. In bothering to return the draft, he
was showing himself still to be actively progressing through the innovation. I updated his material and sent him a copy.

20 March I sent D two materials of the other group members for him to conduct field trials. At the same time, I sent his material to two members of the working group so that they could give him feedback for the pedigree of his material. This latter would have kept the hygiene favourable and so contributed to the perceived acceptability of the total environment.

In April D phoned to give armchair feedback on the materials I had sent him. He made some well reasoned appraisals, but was clearly in a distraught state. He eventually volunteered that this was due to a serious personal problem. He then said that he would have to withdraw from the group as he could not concentrate to do any real work. Hygiene factors had become drastically worse. His needs now were no longer what they had been; so the instrumentality of the scheme for meeting these needs had dropped too. Hence his motivators had dropped. Therefore the perceived total environment for the innovation had become very much less favourable, and D had rejected the innovation.

Over a year later on 5 May 1982, I wrote to D again. I thought that (a) sufficient time had probably elapsed for him to have come to terms with his personal problem, and (b) the publication of Volume 1 might encourage him to rejoin the scheme. I suggested that, if he were interested in getting his activity published, he should send it to Alex Main for first-step approval. I thought it impertinent to ask D whether I was right about his having come to terms with his problem, and I never enquired as to the encouraging effects of volume 1 being published. Nevertheless, I must have been right about the environment for the innovation now being perceived as improved, because on 13 May 1982 D sent his material to Alex Main with a covering letter, of which he sent me a copy. He was now back in the innovation. On 17 June Alex wrote to D (with a copy to me) essentially approving the material. At the time of writing this thesis, the material is being fieldtrialled. So D is at the trial(2) stage.

Figure 11.4a shows D's overall innovatory behaviour on the macromodel. He reaches awareness, interest and evaluation together on the same day, labelled 14/10/80, presumably because he perceives the total environment of the innovation as very favourable. Trial(1), reached on 24th January, labelled 24/1/81, is associated with a further improvement in the perceived total environment. In April, labelled 4/81, the total environment for the innovation suddenly becomes drastically worse, and D rejects the innovation. On May 13th of the following year, labelled 5/82, D rejoins the innovation, illustrating hysteresis. Incidentally this is true hysteresis, in as far as the environment had to be perceived as substantially better than when the rejection took place, in
Fig 11.4a The macromodel for D showing catastrophic rejection plus hysteresis.

Fig 11.4b (i) A micromodel for D as it would have been without bias.

Fig 11.4b (ii) A micromodel for D as it was with bias.

(The task is to write his material in the SRHE housestyle)
order for D to progress again. He was not just picking up where he left off. If this had been the case, he would have contacted me when he had come to terms with his problem - which did not happen. Instead, he needed me to contact him with encouraging information of some sort.

The micromodel can be used to model D's behaviour on any of the tasks he undertook in connection with the innovation. It is particularly interesting to use it for look at D's behaviour in reaching trial(1) as this illustrates the effect of the bias of my doing some of the work for him. Figure 11.4b (i) shows D's behaviour as it would have been without bias, for the task of writing his activity in the SRHE housestyle. The hygiene becomes more favourable due to my feedback and support, and the motivators increase due to progressing with the innovation - but these were not sufficient for D fully to achieve the task. Figure 11.4b (ii) shows how the bias of my doing work for him pushes the cusp inwards and sideways, lifting the entire behaviour surface. With the same values of control factors, the task is now achieved.

11.5.5 The case of E

This case illustrates many of the features outlined in Section 4.9. E is a university lecturer concerned with management training. He is accordingly interested and involved in university academic staff development. I introduced him to the SRHE Scheme in a discussion at a course to train university lecturers in September 1980. He said that he had some activities that he thought could be written up for publication and he requested some printed information on how he should proceed. He thus reached the awareness and interest stage on the same day. I formed the impression that the attraction was the publication. This view was later substantiated when he told me that he was trying to get as many publications as possible to support applications for another job. At this time, he was too new in the innovation for progress, role perception and self-actualisation to contribute as motivators. So it seems reasonable to assume that the main motivator for the transition from awareness to interest was instrumentality, relating to a need for publications. Hygiene must have been adequately favourable in order for him to entertain the innovation; so altogether he must have perceived the total environment of the innovation as favourable. The transition from awareness to interest is as shown on the macromodel in Figure 11.5a, labelled 9/80.

On December 2 1980, E sent me drafts of his activities. According to my definitions of stages in Section 11.3, he was now at the evaluation stage, labelled 12/80 in Figure 11.5a. There is no reason why any of the factors should have changed for the transition from interest to evaluation, except that motivators would have increased slightly due to progress with the innovation.
Fig 11.5a The macromodel for E

Fig 11.5b A micromodel for E showing the effect of bias
E's drafts were not presented according to the SRHE housestyle, and there were ambiguities and omissions. I could have sent them back with requests for changes - but I did not. As I was concerned at the fragility of the SRHE Scheme so early in its life, I was keen that it should gather momentum. So I spent some considerable time redrafting E's materials. (I did this on a word processor and told E this, so that it would be easy to make further changes if I had misrepresented him.) My doing the work for him thus contributed to his reaching the next stage, namely trial(1). On the macromodel this is represented by the perceived total environment becoming more favourable - although on a micromodel is would be represented by bias.

On February 10 1981, I sent the redraft to E with a covering note explaining the position and requesting more information for clarifying the ambiguities and remedying the omissions. On the macromodel this support would count as making the perceived total environment more favourable. On a micromodel it would be a favourable change in hygiene, as I merely supported. I did not do the work myself. On February 23 1981, E sent me back the redrafts with the information I wanted. The transition to the stage of trial(1) was complete. It is labelled as 2/81 in Figure 11.5a.

By 4 May 1981, I had sent out E's materials for field trials, so making him reach trial(2). I had intended that this task would be for the authors themselves, but E was out of the country around that time, and if I had waited for him to return, it would have put the June submission of materials in jeopardy. I sent the materials to several people on different dates, which, incidentally, exemplifies the haziness of dates being attached to transitions between stages. What can be said is that E had reached trial(2) by 4 May, which could be shown on the macromodel as the total environment being perceived as more favourable due to my having taken on the task. However, on 14 May, when E had returned from abroad, and the Easter vacation was over, he phoned me to ask if there was anyone else he could send his materials to for comment. When I offered some names, he said that he would send them copies himself and phone round the following week to get reactions. This shows a keenness which indicates that he was not near a catastrophic rejection. My doing the task for him merely speeded up the process of transition. The macromodel shows him reaching trial(2) on 14 May, labelled 14/5/81.

On 26 May 1981 Lewis Elton, as Chairman of the Editorial Board received E's material from E for submission to David Jaques and Donald Bligh. E had revised his materials in the light of comment from members of the group, and included a pedigree as arranged. This meant that E was now at trial(3). He had made this transition having benefited from the help of the group; and motivators were satisfactory too, since he was experiencing progress. The
perceived total environment was therefore still favourable. This transition is shown in Figure 11.5a, labelled 26/5/81.

On 23 June 1981 I sent a letter to E reporting in as gentle terms as possible on the adverse reactions of Donald Bligh and David Jaques to the materials and to the scheme. It is reasonable to assume that he was very disappointed. Motivators almost certainly would have dropped as he began to question the instrumentality of continuing with the scheme as a means of getting easy publications. He may also have questioned whether his materials would ever reach publication at all, (in which case the butterfly factor may have come into play on the micromodel). What is certain is that he began to be very disenchanted with his involvement in the scheme. Late in July, after he had received the specific criticisms of Donald Bligh and David Jaques, he sent me an undated handwritten, scrappy note commenting in dry terms about the trouble he was having sorting out the acknowledgements as required by Donald Bligh and David Jaques. (He asked if anyone else wanted to enter the competition.) Having discussed the problem with Lewis Elton, I replied that he should phone round some of these people to ask if they were happy with a certain form of words of acknowledgement. Certainly he found this an irritating chore because he needed three reminders from me before submitting his revised material - and when it came, it included another scrappy, handwritten note saying that he had had enough of sorting out acknowledgements and that SRHE could do what they liked. He eventually forwarded his revised material to Alex Main direct, sometime in late September 1981. He had now reached trial(4).

The macromodel in Figure 11.5a shows this transition, labelled as 9/81, as markedly different than for the previous transitions. It shows a decrease in the perceived total environment: progress was not what he had anticipated, instrumentality had become questionable, and the hygiene factors resulting from Donald Bligh and David Jaques's reactions had become much less favourable. E's behaviour suggested that he was now somewhere on the lip of the cusp, poised for rejection.

On 22 December I wrote to E saying that both Alex Main and Trevor Habeshaw had recommended publication in principle, but that they required a few changes. This must have made him perceive the environment of the innovation as more favourable: hygiene would be more positive and motivators would be increased due to instrumentality increasing. Probably the Concorde Syndrome was still playing its part too. Either way, E came to my house over the Christmas vacation and together we sorted out the required changes. In late January 1982, he forwarded his modified materials. He had reached trial(5), labelled 1/82 - but only just. Again there was the scrappy, handwritten note. It said that he had already spent more time on this than he had
intended and that if I wanted any further changes, I could make them myself. Some changes I did indeed have to make. On the macromodel, this would be represented a favourable perceived total environment.

The final task required by authors in order to reach adoption was to provide camera ready copy within specified margins for all white pages and any diagrams for me to insert within the text in the yellow pages. Around the middle of February these documents arrived from E. The top and bottom margins were incorrect and the diagrams non-existent. I had to cut and stick the copy for the white pages myself and draw the diagrams. In consequence he once more progressed to the next innovation stage because of the bias factor. Without it, his materials could not have been published. So, rather than being poised on the lip of the cusp, he would, without my work, have dropped to the lower sheet. The transition to adoption is shown on the macromodel in Figure 11.5a.

Micromodels can be used to examine any of the tasks associated with E's behaviour within the innovation - and since the behaviour is so varied, it is worth using them a number of times.

Figure 11.5b shows the micromodel for the task of drafting the material in the SRHE housestyle. The interesting factor is the bias of my doing the drafting for E. This has moved the cusp round to the left and pushed it inwards. In so doing, various points which would have been on the lower sheet, have been lifted to the upper sheet. There is of course no way of knowing whether, without the bias, E would have necessarily been at a point on the lower sheet (denoted by A), corresponding to not redrafting the materials. He might have eventually completed the transition without my help (denoted by B) - or he might have been on the lip of the pleat, poised for rejection (denoted by C). Whichever is the correct one, the bias lifted A to A', B to B' and C to C' and contributed to E's reaching trial(l) when he did.

The micromodel for the task of sending the material out for fieldtrials would be similar to that of Fig 11.5b in that the bias due to my having done some of the work. The material went on fieldtrials due to the favourable hygiene of other members of the group who agreed to react to the material, and increased motivators, due to progress.

Figure 11.5c is particularly interesting. It refers to the task of updating the materials as required by the SRHE scrutinisers. E starts out with motivators and hygiene adequate for tasks within the innovation. Then the changes outlined above take place which reduce the motivators and make hygiene much less favourable. The figure shows the existence of the third stable state of marking time, due to uncertainty. E may or may not have dropped into it for a while. Certainly, there was sufficient time for him to do so, as is indicated by my having to give him several reminders before he
resubmitted revised materials. It is worth considering why he bothered to submit at all, with so many factors unfavourable. He himself, quite unprovoked later volunteered the answer. He called it the Concorde Syndrome: that he had put so much into the innovation already, that it seemed a waste not to continue. Fig 11.5c shows this clearly. His final position is represented by a particular value of normal and splitting factors. Because he had approached this point along the top sheet, he remained on the top sheet. If he had approached it along the bottom sheet, he would not have completed the task. Incidentally I suspect that role-perception also played a part in increasing the motivators sufficiently for him not to reject the innovation, as he must have known that the rest of the group were relying on his material to make up enough materials for the first volume.

The micromodels for the task of updating his material according to the requirements of the second SRHE scrutinisers and the task of producing camera ready copy would be similar to Figure 11.5b, in that the bias factor played a considerable part.

11.6 Discussion

This section is concerned with the usefulness and limitations of the models themselves and of the SRHE Scheme as a means of providing appropriate data to test them.

11.6.1 Discussion on the models

The case studies have shown that the models seem to serve their purpose for modelling innovative behaviour visually. They highlight special features of innovatory behaviour, as listed in Section 4.9, and they add insights into the behaviour. Armed with such insight, a change agent is in a better position to devise strategies for innovation. This is discussed further in the next chapter, in Section 12.5.

It is a pity, however, that two models are required for adequately modelling innovative behaviour. One model would be much more effective. This was a problem to which I devoted much thought, and in the next chapter, in Section 12.7.2, I suggest a line of approach for unifying the models. It would require considerable developmental work on the part of a mathematician specialising in Catastrophe Theory and a computer programmer specialising in animated computer graphics - but it is theoretically possible.
Fig 11.5c A micromodel for E showing the effect of the butterfly factor
11.6.2 Discussion on the SRHE Scheme as a means of providing data to test the models

The SRHE Scheme has proved generally successful in providing data to test the models - with two caveats. Firstly, where an individual was allowed to submit more than one material for any one volume of materials, it proved too difficult to disentangle how events connected with one material affected how he perceived the environment for the other. Secondly, where a material was jointly authored, it proved impossible to disentangle how the behaviour of one author affected how the other perceived the environment for the innovation.

If the SRHE Scheme is considered solely as a means for producing data to test the models, these two criticisms are severe. However, the SRHE Scheme also had the more pragmatic aim of supporting staff development. Consequently, it was not reasonable to limit the number of materials submitted by any author or to prevent materials being jointly authored.
Chapter 12

IN CONCLUSION

12.1 Introduction

The chronological development of this thesis has consisted of:

- gathering data with the aim of supporting academic staff development through materials;

- designing a scheme, based on that data, to support staff development through materials;

- implementing the scheme and involving individual staff developers in it;

- developing theoretical models for the behaviour of individuals as they progress towards adoption or rejection; and

- testing the models.

The logical development of the thesis has consisted of:

- developing theoretical models for the behaviour of individuals as they progress towards adoption or rejection of an innovation;

- designing and implementing a scheme to test the models; and

- testing the models.

This chapter gives some concluding remarks on all but the first of these
points. Section 12.2 reports on the achievements of the SRHE Scheme; Section 12.3 describes how the policies and practices of the SRHE Scheme have evolved through use; Section 12.4 considers the SRHE Scheme as a means of providing data to test the models; Section 12.5 comments on the uses and limitations of the models; and Section 12.6 considers further work that is opened up by the work of this thesis.

12.2 The achievements of the SRHE Scheme at the end of 1982

In June 1982 SRHE published the first volume of the group's materials (Cryer 1982c). It is too early to say much on how the volume fared but, according to the SRHE Publications Officer, sales figures give cause for satisfaction (Kington 1982). Of the 500 print run, 90 copies were sold in the first three months. This was particularly good because, as the volume was different from SRHE's usual publications (i.e., monographs) it could not be sent out on the standing orders. Every standing order subscriber had to be individually asked whether he wished to subscribe to this, rather different publication. Some did and some did not - but the volume attracted substantial numbers of new subscribers, who put in standing orders for these volumes and not for the other publications. (These subscribers were largely from a list, supplied by me, of contacts I had met through my own staff development activities. The Publications Officer felt that this new set of subscribers must be allowed to build up, which would take time, and that:

"The sales so far certainly do not give cause for saying, don't produce another volume".

12.3 The outcome of the SRHE Scheme in relation to its design

The SRHE Working Group to produce materials to support staff development began its formal life in December 1980. It ran very much as outlined in Section 10.3, but some modifications evolved as time progressed. This section is concerned with this evolution. It is based on my own experiences of coordinating and editing the scheme over the last two years. In due course the SRHE Scheme should be formally evaluated (see Section 12.6.1) but the time for that is not yet ripe.

My experiences gave me no reason for doubting or modifying the points in Appendix VII - and it was on these that I based the design of the SRHE Scheme. However, in the real world, people do not act and events do not...
happen exactly as one might expect. The following subsections comment on aspects of the actual workings of the SRHE Scheme.

12.3.1 Aspects of writing the materials

This subsection deals with aspects of writing the materials.

Some authors had previously produced draft materials for staff developers to offer individuals lecturers for self-study to help with various aspects of teaching. Since the group was dedicated to documenting training activities for staff developers to run on workshops and courses, the authors modified the materials with this as the principal purpose. Then the self-study aspect was offered as a variation, based on the same resource masters.

I have no doubt of the value of the Guidelines for Authors (see Appendix VI), which laid out the housestyle within which authors should present their activities. But I soon learnt how ambiguous such instructions are. With every newly submitted material, I felt the need to add several more points to these Guidelines. Such points were many and varied. They were doubtless trivial from the point of view of an author trying to express his meaning and yet they were fundamental for me, as editor, trying to foster consistency of housestyle. I realised that if I were to expand the Guidelines for Authors to accommodate all these points, they would become unwieldy. So I started sending a specimen material, written according to the housestyle, with the Guidelines for Authors. There was little improvement in the submitted materials, and I finally resigned myself to having to do a great deal of editing myself.

12.3.2 Aspects of field-trials

This subsection deals with aspects of field-trials.

The sub-groups turned out to be nowhere near as formal as I had anticipated. They did exist, but their membership was fluid, according to who had materials to try out and who had the opportunity to try them out. No one ever seemed unwilling or reluctant to try out materials. I believe that this was due to it being an understood and recognised condition of membership. Members seemed to accept that this work was expected of them and that the scheme was sufficiently coordinated for other members to be available, as required, to do the same work for them.

Although the group started by offering feedback sheets for providing feedback, this procedure was quickly dropped, when it became clear that people preferred not be to constrained by questions that they often regarded as inappropriate and irrelevant. They preferred the free response format of a
letter or a phone call.

Although many members of the group did conduct field trials in a live course with actual participants, there was much more armchair feedback than I had hoped. This seemed not to be due as much to a reluctance on the part of the people giving the feedback, as to the time constraints within which the group was operating.

Several people, who were not authors wrote to me and offered to try out materials. This was pleasing in view of the SCEDSIP experience (see Section 8.6).

12.3.3 Aspects of producing camera-ready copy

This subsection deals with aspects of producing camera-ready copy.

I was determined that the published materials should appear professional, in particular that all the pages of information for organisers would be typed uniformly - and therefore centrally - with a proportional typeface. Since the group was committed to providing camera ready copy, and had no funds for typing, I had no option but to type these pages myself.

I had felt that variations of typeface would add attractive realism to masters of resources (eg, briefs for participants, handouts, checklists etc). So I asked authors to provide camera-ready copy for these, themselves. Some authors provided better camera-ready copy than others, but no set was entirely satisfactory, as submitted to me. For example, margins were not the right size and typing mistakes had been sloppily corrected. Many masters had to be retyped, and I had to do considerable cut, stick and masking work.

12.3.4 Aspects of publishing

This subsection is concerned with aspects of publishing.

In order to facilitate users copying the resource masters, SRHE was requested that the final product should appear on loose A4 sheets, punched ready for insertion in the user's own file, plus a label for that file. The label never materialised, nor did a statement that the materials were not adequately packaged to keep well, without being put in a file. Steps must be taken to correct this for future volumes.

12.3.5 Aspects of marketing

This subsection is concerned with aspects of marketing.

SRHE took on the formal task of marketing, but the individual members of the group showed themselves very committed - more so even than I had
hoped - to publicising the work of the group, by running the activities at conferences and as otherwise requested.

12.4 The SRHE Scheme as a means of producing data to test the models

As discussed in more detail in Section 11.6, the SRHE Scheme proved generally successful in providing data to test the models, with two caveats. One concerned multiple materials submitted by a single author and the other concerned multiple-authorship of a single material. In both cases, it proved impossible to isolate and identify relevant control factors. However, since the SRHE Scheme primarily had the more pragmatic aim of supporting staff development, it was not reasonable to limit the number of materials submitted by any author or to insist on single authorship.

12.5 Concluding remarks on the models for innovatory behaviour

As discussed in more detail in Section 11.6, the models seem to serve their purpose for modelling innovative behaviour visually, providing insights into innovatory behaviour, and highlighting special features of innovative behaviour (see Section 4.9). They would be more attractive, however, if they could be unified. Section 12.6.2, offers suggestions on how this may be accomplished through further development work.

As mentioned in section 3.4, models for innovation are invariably reprocessed to see what they offer in the way of strategies for the change agent. It is therefore reasonable to see what the macromodel and the micromodel offer in this connection. I believe that the models give to the developmental approach to innovation something similar to what Lewin's force field analysis gives to the systems approach to innovation. Lewin's force field analysis provides insight into the nature of change in specific instances. Armed with such insight, strategies usually occur quite naturally to the change agent. The macromodel and the micromodel similarly give insights. The models for an individual can be assessed to see what strategies present themselves, specifically for that individual; or the models for the entire group can together be examined to detect trends, which would lead to strategies for involving more authors more successfully in the innovation - in this case the SRHE Scheme.

I prefer, however, not to tie the models too closely to the behaviours of the authors within the SRHE Scheme. There is no reason why the models should not be successfully applied to other innovations, inside and outside education, where they would similarly give insights that would offer strategies
for the change agent.

12.6 Prospects for further work

The work described in this thesis has opened up two principal areas for further work. These are discussed in the following subsections.

12.6.1 Prospects for further work on the SRHE Scheme

Much of the work of this thesis has been devoted to the design and implementation of the SRHE Scheme. How it evolves in the future will depend on authors and potential authors, and on users and potential users - and it would be satisfying to evaluate this, particularly in terms of the design points listed in Appendix VII. However, it will be a considerable time before sufficient authors have been through the scheme for a meaningful evaluation; it will be even longer before substantial numbers of users have used the output of the scheme; and longer still before sufficient time has elapsed for the long term benefits to become clear. Any evaluation therefore cannot take place until some considerable time in the future.

12.6.2 Prospects for further work on the models

As mentioned in Section 12.5, it is regrettable that two models are required to model innovatory behaviour with any sophistication: a macromodel for the overall innovatory behaviour and a micromodel for the behaviour on the various tasks associated with the innovation. It would be possible to unify these models - but it would need specialised expertise in two areas:

- the mathematics of Catastrophe Theory; and
- computer graphics programming.

I can indicate the direction of the work, and I must admit to a particular excitement and interest at its outcome.

The new, single model would rely on the model for behaviour for an isolated task (see Section 4.5), and it would incorporate 'my work' as the bias factor and 'uncertainty' as the butterfly factor. It would therefore be in the form of the butterfly catastrophe, with the following control factors:
a : normal factor = dissatisfiers (hygiene)
b : splitting factor = satisfiers
c : bias factor = work done by change agent
d : butterfly factor = uncertainty

The next step would be to modify this model for the series of tasks associated with progress through the stages of an innovation. The following would have to be accommodated:

a) The fact that at the outset it would be possible for a person only to progress through the thought stages of the innovation. Irrespective of the magnitudes of the control factors - however favourable - it must be impossible for him to reach adoption at these stages.

b) Just as it is possible for a person to progress through the chapters of a book, given sufficient time, without any changes in motivators (satisfiers) or hygiene (dissatisfiers), it must be possible for a person to progress through the various stages of an innovation, given sufficient time, with the satisfiers and dissatisfiers remaining unchanged. In practice, they may and probably do change, but the important point is that they need not. Progression could theoretically take place without them changing - and the model must allow for this.

A way to accommodate these points would be to incorporate the passage of time as a 'smoothing factor', i.e. a factor which alters the size of the cusp as shown in Figure 12.1. Postle (1980 p 84-86) reports on this possibility, quoting Zeeman - without reference. I have not been able to find the reference in any of Zeeman's published works. It may be that Zeeman is wary of working with a smoothing factor in simple applications, because it would require a model with an odd, rather than an even, number of control factors. This presents difficulties, stemming from such models having no stable states over wide ranges. The mathematicians with whom I have discussed this matter have confirmed that it is possible to work with odd numbers of factors, but they have not been prepared to commit themselves on how. It is in this connection that the expertise in the mathematics of Catastrophe Theory would be
Fig 12.1 The effect of the smoothing factor on the bifurcation set

Fig 12.2 (i) A small smoothing factor prevents immediate progress to adoption

Fig 12.2 (ii) A larger smoothing factor allows progress to adoption

Fig 12.2 (iii) A still larger smoothing factor forces either adoption or rejection because the back surface is lifted so high that earlier stages are lost
required. Figures 12.2 (i), 12.2 (ii) and 12.2 (iii) incorporate such a limiting factor and respectively show the state of affairs for any one person at the outset of the innovation, some time later, and much later on. In Figure 12.2 (i) the pleat is too small to lift the surface sufficiently for it to register adoption, and in Figure 12.2 (iii) the pleat is so big as to lift the back surface such that considering the innovation is lost. Only rejection or progress to adoption is permissible.

As it stands, this model would still need to be redrawn at various stages of the innovation, in order to show (a) the size of the cusp (b) the extent of the swing of the cusp and (c) the state of the third mode of behaviour. This is somewhat clumsy and irritating. The solution would be to unify the various manifestations of the model, using the animation provided by computer graphics - and this is where the expertise in computer programming would be required. The program would have to:

- model three dimensional sections of the behaviour surface according to the mathematical equations for the five-factor catastrophe;
- provide a means of feeding in the data for individuals at the various stages of the innovation; and
- animate the model.

In this way it would be possible for the animated model of the innovatory behaviour of an individual to be displayed on the computer screen. The shape of the surface would be seen to change as the person moved over it, progressing towards ultimate adoption or rejection. I find this a fascinating idea!

for the usefulness of the models.

This thesis has described the development of an innovative project and has formulated models for the innovative processes of an individual. The latter are based on the works of Thoms on Catastrophe Theory, Herzberg on Motivation and Rogers on Innovation. The models illuminate the processes involved in innovation. The models illuminate the processes involved and highlight negative aspects of them. The behaviours of the authors within the S/RHE Scheme provided evidence for the usefulness of the models.
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THES. 1981. 'UGC protects the chosen few'. 3 July.
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One of the aims of the HERMES project is to support training/development activities for teachers in higher education by fostering an awareness of the increasing availability of materials, many of which may be acquired at the HERMES resource centres at UTMU, London; Surrey University; City University and City Polytechnic. The project team is eager to meet your needs as closely as possible in its future development policy; so we ask you to help us to help you by filling in this questionnaire and returning it in the provided FREEPOST envelope.

If YOU FEEL THAT SOMEONE ELSE IN YOUR DEPARTMENT/INSTITUTION IS IN A BETTER POSITION TO ANSWER THIS QUESTIONNAIRE, PLEASE PASS IT ON TO HIM OR HER.

name:
department:
institution:
adress:

What is your involvement with staff training/development?

* eg Do you run training/development courses? Do you counsel individuals? Are you the chairman of a university teaching and learning committee? Is your involvement with training/development full- or part-time? *

Please underline one or more if it sufficiently describes your involvement. The space below is for elaboration or alternative response.
Section A: Use of Materials

4. Which of the following print materials have you used most frequently in your training/development work?
   For each column please indicate just three, using the codes 1, 2 and 3 to indicate "used most frequently," "used second most frequently" and "used third most frequently" respectively.
   
<table>
<thead>
<tr>
<th>Material</th>
<th>When planning courses</th>
<th>When running courses</th>
<th>Recommending to individuals/counselling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handouts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Games</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Simulations</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other training exercises</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course programmes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Self-study materials</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading lists</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Reports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research articles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Books</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catalogues</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Which of the following media have you used most frequently in your training/development work?
   For each column please indicate just three, using the codes 1, 2 and 3 to indicate "used most frequently," "used second most frequently" and "used third most frequently" respectively.
   
<table>
<thead>
<tr>
<th>Media</th>
<th>When planning courses</th>
<th>When running courses</th>
<th>Recommending to individuals/counselling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video tapes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audiotapes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tape-slides</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Film</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. How closely have you been involved in the production of the materials you have used?
   For each column please use the codes 1 and 2 to indicate "normal practice" and "less frequent practice" respectively.
   
<table>
<thead>
<tr>
<th>Material</th>
<th>Course plan/programmes</th>
<th>Course handouts for materials for individuals/counselling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produced entirely by myself</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produced in collaboration with a colleague from another institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produced in collaboration with a colleague from same institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Produced primarily for in-house use in another institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Available commercially</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. What is your experience of using games, simulations and other training exercises devised elsewhere?
   eg Have you used them as a source of ideas? Have you adapted them for your own use? Have you adopted them directly? Have you never used them at all?
   Please underline one or more if it indicates your experience. The space below is for elaboration or alternative response.

8. Have you any further comments or suggestions concerning the use of materials — print or non-print — in training/development?

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**Section B: Production of Materials**

This section is for anyone who has ever produced training/development materials — ranging from simple handouts to sophisticated films.

9. Which types of material have you produced, and in which media?
   Please use the two checklists to indicate approximately how many productions you have made.

<table>
<thead>
<tr>
<th>Types of material</th>
<th>Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>handouts</td>
<td>print</td>
</tr>
<tr>
<td>games</td>
<td>video tapes</td>
</tr>
<tr>
<td>simulations</td>
<td>audiotapes</td>
</tr>
<tr>
<td>other training exercises</td>
<td>tape-slides</td>
</tr>
<tr>
<td>course programmes</td>
<td>film</td>
</tr>
<tr>
<td>self-study materials</td>
<td></td>
</tr>
<tr>
<td>reading lists</td>
<td></td>
</tr>
<tr>
<td>reports</td>
<td></td>
</tr>
<tr>
<td>research articles</td>
<td></td>
</tr>
<tr>
<td>books</td>
<td></td>
</tr>
<tr>
<td>catalogues</td>
<td></td>
</tr>
</tbody>
</table>

This space is for elaboration or free alternative response.
10. For what use have you produced materials?
   eg For use on in-house courses? (pre-course, in-course or post-course?) For recommending to individuals/self-study?
   For marketing commercially? Have they been aimed at the new or experienced teacher? Would you describe them as
   for training or development?
   Please underline one or more if it indicates the intended use of your materials. The space below is for elaboration or alternative response.

11. How have you set about deciding the topic, length and coverage of your various materials?
   eg Have you always, sometimes or never canvassed needs? Have the decisions been made for you by the constraints of
   a course or by a supervisor? Did you "feel the material inside you trying to get out"?
   Please underline one or more if it indicates your answer. The space below is for elaboration or alternative response.

12. Describe the writing/production process.
   For example please indicate: What the problems were; who else was involved and at what stage; the extent to which you used existing materials; the nature of any trials prior to any modification.
13. In your opinion, how worthwhile have your various materials proved in the event? If there was any kind of evaluation, please describe it.

14. Have you any further comments or suggestions concerning the production of materials for training/development?

Section C: Dissemination of Materials

15. To the best of your knowledge have any of your materials ever been in any way used by anyone other than yourself and those you train/develop? 
   eg By no-one at all? By others running courses in your own institution? By other institutions? Are any of your materials available commercially? 

   Please underline one or more if it indicates the extent of the dissemination. The space below is for elaboration or alternative response.
16. If you have never attempted to disseminate your materials, why is this?

*eg* Has it never occurred to you to disseminate? Has the effort of dissemination seemed out of proportion to the benefit? Have your materials not seemed to you to be sufficiently polished or novel? Have you assumed there would be no interest in your materials elsewhere? Do you not have the administrative back-up?

Please underline one or more if it indicates your reasons. The space below is for elaboration or alternative response.

17. If any of your materials have been used elsewhere, please use the checklist to indicate what type and approximately how many of each production.

<table>
<thead>
<tr>
<th>medium</th>
<th>number of separate productions</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-print</td>
<td></td>
</tr>
<tr>
<td>handouts</td>
<td></td>
</tr>
<tr>
<td>games</td>
<td></td>
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<tr>
<td>simulations</td>
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<tr>
<td>other training exercises</td>
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<tr>
<td>course programmes</td>
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<td>self-study materials</td>
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<td>reading lists</td>
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<td>reports</td>
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<tr>
<td>books</td>
<td></td>
</tr>
<tr>
<td>catalogues</td>
<td></td>
</tr>
</tbody>
</table>

Did you advertise these materials? If so, where?

Who were your main “buyers”?

Were you satisfied with the response?

Did you charge? If so, how was the price calculated?

What particular attention did you pay to presentation/packaging?
8. Have you any further comments or suggestions concerning the dissemination of materials?

The following statements were all made in the pilot interviews which led up to this questionnaire. Please comment on them.

9. "It's too much hassle to use non-print materials. The equipment breaks down or the material doesn't arrive.

10. "There are no career prospects in writing materials. They don't count as published papers."

11. "The trouble with writing things like materials is that you have to keep one eye on the likely reactions of your superiors, and before you know where you are, they are your target audience, instead of those you should be training."
22. “These days it seems to be fashionable to talk about ‘development’. What we need is ‘training’: ie training for the simple everyday teaching and administrative problems.

23. “We need different sets of materials: pre-course, in-course, post-course and self-study; and a different levels according to whether the lecturer is new or experienced.”

24. “Other people’s materials always seem at the wrong length or level for my courses.”

25. “I like materials that impose a structure on a session. I don’t go for this wishy-washy let’s see where we find ourselves approach.”

26. “I’m put off using other people’s materials unless they are packaged properly. Photocopies c badly laid out typescript turn away thousands.”

Thank you for filling in this questionnaire. I am most grateful.

Please return it to me in the FREEPOST envelope provided.

Pat Cryer (HERMES project officer)
Appendix II Sources of materials used as examples


(ii) PASCAL, C, et al, Teaching and Learning: an individualised course for instructors in higher education, available from McGill University Centre for Learning and Development, McGill University, Montreal, Quebec, Canada.

(iii) UNIVERSITY OF SURREY, INSTITUTE FOR EDUCATIONAL TECHNOLOGY, Information by Post, unpublished, donated by the Institute for Educational Technology, University of Surrey, Guildford.

(iv) PFEIFFER, J and JONES, J (eds) Annual handbook for group facilitators and Structured experiences for human relations training, available from University Associates of Europe, PO Box 3, Mansfield, Notts.

(v) KAGAN, N, Interpersonal Process Recall films, unpublished, bought from Department of Counselling and Personnel Services, Michigan, USA.

(vi) RUDDUCK, J, Small Group Teaching Project, set of eight video tapes, available from The Centre for Applied Research in Education, University of East Anglia, Norwich, Norfolk.


(viii) MANAGEMENT GAMES LTD, a series of management games, available from Management Games Ltd, 2/11 Woburn Street, Amphill, Bedford.

(ix) LABYRINTH, available from TEDI, University of Queensland, St Lucia, Queensland, 4067, Australia.
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