Appraisal of the Systematic Curriculum Development Model as Applied to Two Innovatory Theory of Education Courses.

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SUMMARY

This study monitors the development of two innovatory courses in the theory of education, taught to successive year groups of students at Bishop Otter College of Education, Chichester* between 1969 and 1977. The first course was a simulation exercise in educational decision making and the second one was a resource-based course in the broad area of the philosophy of education.

Part One of the study attempts to provide an 'illuminative' perspective, firmly based in the literature, of the College and its students, which focuses on the changing academic, social, psychological and logistical factors which appear to have affected the development of the two courses between 1969 and 1977.

The review of the literature, which forms Part Two, is divided into three main parts, which look at human learning, teaching methods, and finally at educational technology. The review concludes by drawing out the implications of the literature for the development of the innovatory courses.

Part Three describes how the two courses were developed, using the systematic model of curriculum development. This model is found to be rather arbitrary as a representation of the curriculum development reality, tending to be somewhat introspective in failing to take sufficient note of the 'hidden curriculum' and the social and academic context in which the courses were taught.

The main thesis, which is arrived at inductively, develops a dynamic systematic explanation, which attempts to include the systematic model in a broader based metaphor of the process of curriculum development, including the 'hidden curriculum', as well as other constraining factors. This thesis is successfully tested against the longitudinal development of these two very different teaching approaches.

Finally, Part Four attempts to provide a synthesis of the study as a whole and to draw some general conclusions. It concludes by suggesting directions for future research.

* The College became a constituent college of the West Sussex Institute of Higher Education in September 1977.
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| 67         | 3C      | Student Study Habits |
|            |         | "... this reflected a similar five day working week to that identified in the library analysis". (5.12.1(1)). |
| 82         | CHAPTER FOUR | Review of the Literature |
| 178        | CHAPTER FIVE | The Simulation Exercise |
| 180        | 5A      | Closing Small Village Schools |
|            |         | "... as you go into the Council Chamber, how will you vote?"
| 182        | 5B      | "... the file of letters and memos ..." (5.3.2(1)). |
(i) "... students were required to work independently ... through the file ..." (5.3.2(1))
(ii) "... the twenty seminar groups provided the membership of the four villages in the exercise ..." (5.3.2(3)).

Headed notepaper used by student groups during the exercise.

"... the exercise was successful with the College covered with posters ..." (5.3.3(1)).

(i) "These resource booklets were very detailed ... some students ... looked in great detail ... before arriving at ... decisions". (5.4.1(6)).
(ii) "... village display boards ... photographs ... using typical houses ... 6" map ... gave ... greater exactitude to decision making". (5.4.1(8, 9)).

(i) "... the 1973 exercise attempted to use open plan teaching methods ..." (5.4.2(10))
(ii) "... students had rarely studied in such spaces in the course of their own school learning". (5.4.2(11)).

(i) "... the political... dimension to the exercise". (5.4.2(2)).
(ii) "... good evidence of student participation". (5.4.2(12)).

"... I paid little attention to this cartoon ..." (5.4.5(2)).

"Official nomination papers were issued ..." (5.5.2(1)).

(i) "... students were asked to record their votes ..." (5.5.2(1)).
(ii) "... many students found this to be a demanding experience ..." (5.5.2(1)).

The Resource-Based Course

"... students appreciated the attempt at open plan teaching..." (6.2.2(2))

"... in 1974, 1976 and 1977, I provided some feedback to students in mid-course focusing particularly on the use of resource collection". (6.2.2(8)).

"... to encourage the use of the resources ... I placed a large display thermometer ..." (6.2.3(7)).

(i) "Slides of these comments were placed on a projector in a corridor independent learning area ..." (6.5.1(4)).
(ii) "... displays and structured work units ... set up in the main corridor ... open to all students ... outside the formal teaching courses". (6.7.2(1)).
"In 1977 ... students were invited to show visually the groups they had operated in ..." (6.5.2(4)).

(i) "The audio-visual centre ... to provide facilities for staff and students to produce teaching materials ..." (6.6.1.1(2)).

(ii) "... in 1967, the library had a staff of two and was never closed ... by 1974 ... it had a staff consisting of ... and was operating a closed system of access". (6.6.1.2(1)).

(iii) "... in May of 1974 to convert one of the College halls into a resource centre, equipped with multi-media study facilities". (6.6.1.2(3)).

INDEPENDENT LEARNING APPROACHES (6.7.2(1))

(i) "A problem was posed ... students ... recorded their result ..." (Appendix E2(b)).

(ii) Philosophical treasure hunt. (Appendix E2(d)).

(iii) "Displays containing a simple teaching point ..." (Appendix E2(e)).

APPENDIX E

"... clues placed in difficult positions ... before they could move on to another clue they had to solve a philosophical problem ..." (Appendix E2(d)).
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<tr>
<td>M</td>
<td>Evaluation form used at the end of the 1976 Resource-Based Course (see 6.2.2.(9), 6.7.2(2), 6.8.2(1)).</td>
</tr>
<tr>
<td>N</td>
<td>Written test given at the end of the 1977 Resource-Based Course (see 6.2.3(3)).</td>
</tr>
<tr>
<td>O</td>
<td>Feedback profile given to students following the marking of the written test (Appendix N) in 1977 (see 6.2.3(5)).</td>
</tr>
<tr>
<td>P</td>
<td>Work diary given to students at the start of the 1977 Resource-Based Course (see 6.2.3(6)).</td>
</tr>
</tbody>
</table>
Year Group's evaluation of individual comments made by students in earlier years - 1977 (see 6.5.1(4) - footnote).

Evaluation form completed at the end of the 1977 Resource-Based Course (see 6.6.4(3), 6.7.2(2), 6.8.2(1)).

Resource evaluation sheet - 1977 (see 6.6.3(3)).

Resource evaluation sheet - 1972 (see 6.6.3(3)).

Teaching methods semantic differential given to the 1971-1974 year group (see 6.7.3(1)).

Objective test - version 1 - 1972 (see 6.8.2.1).

Objective test - version 2 - 1973 (see 6.8.2.1).

Objective test - version 3 - 1974 and 1975 (see 6.8.2.1).

Social background literature outline (see 3.5(1)).

Entry Qualification Sources (see 3.8(1)).

Outline of the literature of student study habits (see 3.12(1), 3.12.3(1)).

Factor analysis of 1971-1974 year group's response to a study habits questionnaire (see 3.12.3(1)).

Course booklet used in the 1974 simulation exercise. This was a modified version of the booklet used in 1972 and 1973 (see 5.3.1(8ff), 5.4.2(5)).

1. Summons to attend County Council meeting - 1972
2. Note to County Councillors and Agenda.
3. Report: 'The Closing of Village Schools'.
4. Appendix: 'A Second Look at the Closing of Village Schools'.
   (see 5.3.1(?), and footnote), 5.3.2(?).

Evaluation of the 1972 simulation feed-back to students and staff in March, 1972.
   (See 5.3.4(6)).

Outline contents analysis of two files used in the simulation exercise (5.3.1(7), 5.4.1(11)).

Evaluation of the 1973 Simulation Exercise (see 5.4.4(5) and 5.5.2(2)).
ACKNOWLEDGEMENTS

UNIVERSITY OF SURREY

I would like to acknowledge the penetrating and supportive supervision given by Professor Lewis Elton and also his successful involvement of a part-time student in the intellectual and social life of the Institute for Educational Technology. I also wish to note the help given by other members of the Institute, and the unstinting assistance given by the University computer unit in general, and data preparation in particular.

BISHOP OTTER COLLEGE

These innovatory courses, developed over an eight-year time span, could never have been mounted without the exceptional and cheerful assistance given to me by members of the College administrative, secretarial and technical staff. I would like to thank the General Office for meeting all the typing and reprographic demands of these two courses; the Library for issuing the resources for the resource-based course; A.V.C. (Audio-Visual Communications) for preparing and maintaining the resources and displays and stage-managing the audio-visual demands of these courses.

Equally the evaluation of the courses could not have taken place without the help of the General Office and the telephonists with checking lists and coding data. Parallel with this, the College Registry provided help in compiling some of the data used in Part One of this study.

It is to the credit of the College and a mark of the extremely high calibre of its administrative and technical staff that they responded to every demand made of them and I can never express my personal thanks sufficiently.

Of my academic colleagues, I acknowledge the support of Mr. Jo Vass, my head of department* and Mr. Gordon McGregor, College Principal, in facilitating the development of the courses.

I would also wish to record my gratitude to two Vice- Principals of the College, Mr. James Donaghy, for his original inspiration of these courses, and Mr. Peter Grainge, for encouragement during the final period of writing up.

*Titles given here refer to positions held in Bishop Otter College prior to its becoming a part of the West Sussex Institute of Higher Education.
My thanks also go to the successive year groups of students for responding so constructively to these innovatory teaching approaches; for bearing with me so good-humouredly when things went wrong and for their perceptive cooperation in the evaluation of the courses.

Finally, I wish to express my gratitude to Mrs. Theresa Geall and Miss Marion Gregory for their help with typing the early drafts, and to Mrs. Hilary Yeld for typing early drafts as well as the final version of this study; also to Mrs. Betty Raistrick for her patience in handling inter-library loan requests and in following up elusive references, and to Mr. Derek Kyte for very professional reproductions of my amateur photographs. Their help was always given most willingly and went far beyond what I might reasonably ask.

COUNTY HALL, CHICHESTER

I would like to acknowledge the help given by the Clerk's Department, the Treasurer's Department and the Education Department of the West Sussex County Council (prior to re-organisation) in assisting with the development of the simulation exercise.

More particularly, I would acknowledge the high degree of support given to me by Mr. Alan Clark of the Education Department in giving me access to the County Council computer, without which this detailed evaluation could not have taken place. I also wish to record my gratitude to the computer management, the programmers* and systems programmers, and the operations support team as we implemented and explored the limits of the SPSS and Clustan computer packages. Above all, I must thank the three shifts of computer operators, who cheerfully responded to my repeated requests for computer time, when they were already hard pressed with their regular routine work schedule.

IN RETROSPECT

The few hundred pages of this study cover up the countless hours of help I was given by all of the above people. These acknowledgments can but indicate the sheer scale of the help I was given, which I can never adequately repay.

The impact of any part-time study on family life is enormous and my satisfaction in carrying through this study has been tempered by its demands on my wife and children. Without this secure base, I would have been lost, but I am aware that I have been given more than I gave. Only time can repay this support.

* This also included assistance from the County Council Planning Department in implementing the visual display of the Clustan package.
NOTES

(i) Bishop Otter College became a constituent college of the West Sussex Institute of Higher Education in September, 1977. Although the final draft of this study has been written under the auspices of the Institute, the main thrust of the study refers to the time when Bishop Otter was an autonomous Church of England college of education.

(ii) Literature references will be found on GOLD paper at the end of the chapters to which they refer.

(iii) Cross references to other parts of the study will be indicated thus: (see e.g. 6.7.1(2)), where the number in the inner brackets refers to a particular paragraph within section 6.7.1.

(iv) Appendices all appear at the end of the study and alternate between LILAC and GREEN to facilitate ease of reference. Individual pages within each appendix have been numbered sequentially (e.g. A1 to A4) for ease of reference from the main text.

(v) Diagram (5.2) is central to the main thesis and a second loose copy of this diagram has been lodged in the back cover. Extensive reference is made to this diagram in part Three of this study and to avoid over-repetition of referencing, certain conventions have been observed. A clear indication of detailed reference to this diagram will be given at the start of a section (see e.g. 5.3.5(1)) but after this, referencing will be abbreviated to parenthesised letters only (see e.g. 5.3.5.2(2)), referring to particular flow lines within this diagram.

(vi) It needs to be noted that the simulation exercise described in chapter five, was developed prior to local Government Re-organisation, which led to the demise of Rural District Councils.
INTRODUCTION
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
CHAPTER I: INTRODUCTION AND MAIN THESIS

1.1 INTRODUCTION

(1) This study will describe the development over a number of years of two innovatory courses in the theory of education at a college of education. These courses were developed, using the systematic model of specification of objectives, selection of teaching method and evaluation of learning outcomes, described by Kerr (1). The approach to evaluation, however, was broadened following Parlett and Hamilton (2), but possibly modifying it, by placing a greater emphasis on an understanding of the total institutional framework, in which the innovations took place. The study will be concerned with making a critical appraisal of the systematic model and with assessing the potential of an alternative metaphor of the curriculum development process.

(2) This introduction will outline the study as a whole and will then set these two innovatory courses in a wider national and international context, followed by a brief outline of the two courses and a statement of my main thesis.

1.2 OUTLINE OF THE THESIS AS A WHOLE

(1) The first part of this study will try to establish a view of the College as a whole, looking broadly at it from its original foundation last century, and examining it, in some detail from 1967 onwards, when I joined the staff.

(2) A first aim will be to attempt to set Bishop Otter College in the context of higher education as a whole, and this will be done by drawing on the literature as appropriate. This is necessary if the results of the evaluation of the innovatory courses are to have any generalisability. The second aim will be to identify underlying factors in the College which might affect the innovatory courses and to identify significant sub-groupings of students who might respond in differing ways to the innovatory approaches. The generalised response of a large year group of 200 students to a course is useful, but covers up the differing responses of more homogeneous sub-groupings of students, some of whom may respond well to the courses, while others may respond badly.
The second part of the study will be a review of the literature, which will look at the growth of interest in teaching methods in higher education, moving on to a major section on the nature of learning and individual student differences. This section is of central importance, because the innovatory teaching approaches were developed largely as a result of this kind of reading and thinking. The chapter will then move on to review a range of teaching methods and will finally contain a section, looking critically at educational technology, with particular reference to the underlying paradigms of development and evaluation.

This review of the literature will be followed by the third main part of the study, which will examine the two innovatory courses from their first inception through to 1977. The growth and modification of each course will be considered and the underlying appropriateness of the research and development paradigms assessed.

The final part of the study will be a judgment on the evaluation as a whole, providing a critique of the methodology used; a final judgment on the strengths and weaknesses of the innovatory courses; an overall assessment of the main thesis, and an identification of future research strategies.

1.3 BACKGROUND TO CHANGE IN TEACHING METHODS

The 1960s saw pressure for change in teaching methods at all levels of education. The Plowden Report (3), published in 1967, summed up a change in emphasis in primary school teaching methods, with greater emphasis being placed on the child as an individual and a recognition of the need for a strong experiential base for learning.

The teaching of mathematics in the primary school highlights this change in greater detail. The Swiss psychologist, Jean Piaget had, since the 1930s, been researching into the way children formed concepts (4) and his findings appeared to show that concepts were established slowly, with later learning modifying and being assimilated into earlier patternings of concepts. The approach to the teaching of mathematics described in 'Mathematics in the Primary School' (5) attempted to apply these findings to the primary classroom.
In short, the 1950s and 1960s saw, in the field of primary education, a move away from a teacher-structured curriculum to an encouragement for the child to create its own structures. There was often a gap between the theoretical ideal of this approach to teaching, and its actual implementation.

This growing emphasis on experience-based learning in school, as opposed to traditional formality, could also be seen in the field of secondary education. The Newsom Report, 'Half our Future' advocated this for less able pupils in their last year at school; the Goldsmiths College Curriculum Laboratory fostered a similar freeing of the syllabus with 1st and 2nd year secondary pupils, and provoked national interest in 1966.

On a broader front, the Schools Council was created in 1964 and, by 1968, had established a range of curriculum projects designed to foster an interest in new teaching approaches. Their work was paralleled by the work of the Nuffield Foundation, particularly in Science, French and Resources for Learning.

It should be noted in passing that America, stimulated by Russia's success with the Sputnik, poured huge resources into curriculum improvement in the 1960s and there was inevitably some spin-off from this to the British experience; particularly in realising the potential of media resources and the development of educational technology as a field of study. This was well described by Goodlad in 'The Changing School Curriculum'.

In Higher Education, there was also a growing interest in teaching methods. The Committee on University Teaching Methods reported in 1964 and, to give but one other example, UNESCO held a meeting of experts on Teaching and Learning methods in University institutions at Paris in September, 1968.

The College, then, found itself in the mid-1960s in a complex situation. On the one hand, like other institutions of Higher Education, it was under some pressure to re-examine its teaching and, at the same time, it needed to produce students able to play an active role in developing these new teaching approaches in schools. They were, however, students who had, by and large, been educated along traditional lines in their own secondary education.
(2) All the General Course Teachers Certificate students, therefore, spent their first two terms on an integrated foundation course, whose philosophy is fully described in 'Learning for Teaching' (11).

(3) It would be inappropriate here to discuss the validity of the philosophy of this course, but something of its essence is caught in William James' assertion that learning by discovery, experience or activity is a principle "which ought by logical right to dominate the entire conduct of the teacher in the classroom." (12). The main aim of the First Year Course was to give the students a first-hand experience of child-centred learning, using primary school methods to foster learning at their own level.

(4) The Education Theory Course, which followed on from this course was supposed to be taught "in the spirit of the first year course", but allowing for a greater depth of approach. It was apparent by the end of 1968, however, that the teaching method used, a lecture given to a year group of students, followed by discussion in smaller seminar groups, was probably an inappropriate method of learning for the majority of students. The following were felt to be some of the key factors which needed to be born in mind in designing a course for a whole year group of students:

(1) that the year groups educational qualifications ranged from 5 - 'O' levels (and sometimes even less) to 3 good 'A' levels;
(2) that they were at widely differing levels of conceptual sophistication and maturity with regard to the various disciplines of education;
(3) that they were training to teach all age ranges from infant to secondary;
(4) that they should experience, in the course of their own learning, some of the newer teaching techniques being developed in the schools.

(5) In the light of this kind of analysis, I made an attempt from 1969 onwards to modify the teaching of the theory of education course, the philosophy course being the first to be changed and the administration of education course being the second, a year later.
1.5 THE THEORY OF EDUCATION COURSES

(1) In 1967, the theory of education course in the three-year Certificate of Education course followed the pattern shown below (TABLE 1.1), and this basic pattern continued in each subsequent year.

TABLE 1.1

<table>
<thead>
<tr>
<th>AUTUMN</th>
<th>SPRING</th>
<th>SUMMER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year One</td>
<td>1</td>
<td>First Year Integrated Course</td>
</tr>
<tr>
<td>Year Two</td>
<td>4</td>
<td>Psychology</td>
</tr>
<tr>
<td>Year Three</td>
<td>7</td>
<td>Curriculum Theory</td>
</tr>
</tbody>
</table>

(2) The normal pattern of teaching for the theory of education was for two half-year groups of students to meet in The Hall for a weekly lecture followed by seminar, lasting for two hours in total. Seminar groups usually comprised 12 students and a seminar tutor. A small staff team was responsible for running each term's work, but the seminar tutors were not necessarily qualified in the specialist areas themselves, although, over the years, the tutors built up some expertise.

(3) This basic pattern of teaching applied initially to all of the courses in terms 3, 4, 5, 6, 7 and 8, and continued to apply to the courses in terms 3, 4 and 6, right through until 1977. This study will be concerned with the alternatives to this pattern of teaching which were developed in terms 5 and 8 and an outline of these two courses is given below.

1.5.1 THE SIMULATION EXERCISE (Administration of Education Term 5)

(1) This exercise had its origins in 1970, when one session of a half-term's course in the Administration of Education was devoted to the Economics of education. At the end of a lecture, the students were asked to divide into their seminar groups of 12, and to make a simple decision as to whether an imaginary village school, which was too small, should be closed because it was not economic to continue to keep it open. One member from each group was asked to come to the front of the hall to take part in a mock meeting of the education committee and to reflect the views of their group.
(2) From this small beginning there developed a major innovation in the Administration of Education course. Much of the traditional content of the course was dropped, and three weeks of the 1972 course were given over to the first run of the simulation exercise, which was developed further in 1973 and had a final run in 1974.

(3) The exercise used an actual story line taken from the B B C radio serial, 'The Archers', and was based on a proposal to reorganise primary and secondary education in Ambridge and its surrounding district. The year group of students, divided into village groups, took on the roles of parish, district and county councillors, school managers and governors, parents, members of the Mothers' Union and Women's Institute, members of political and other local pressure groups.

(4) During the exercise, which culminated with a county council meeting held in County Hall, Chichester, they took part in a decision-making cycle of meetings, reacting to these reorganisation proposals.

(5) In order to help their decisions, very detailed back-up materials such as budgets, population trends and other statistics, ordnance survey maps and socio/geographic information were prepared, and they were encouraged to use the economic concepts, introduced in a self-instructional sequence, to aid their decision-making.

1.5.2 THE RESOURCE-BASED COURSE (Philosophy of Education - Term 8)

(1) This course developed from 1969 onwards and grew out of the philosophy of education part of the theory of education course, which occurred in the students' eighth term in College. (See Table 1.1)

(2) Prior to 1969 this had been taught to whole year groups of students, using the mass lecture, followed by seminar groups of twelve students. The course was felt to be unsatisfactory for a number of reasons. Firstly, the mass lecture proved particularly unsuitable for getting across philosophical ideas and, when this was followed by seminars, led by non-expert philosophers, the results were not satisfactory from my point of view, although tutors reported 'interesting discussions'.

(3) From 1969 onwards a resource-based course, providing for open-ended learning in five areas of study, was developed, with students working through a classified list of resources in the form of book extracts, tape recordings, structured study units and slide tape sequences, to arrive at a reasoned position 'with regard to the area of study they had chosen to follow'. 
(4) The resources were available for study at any time on short-term loan and each week a very full programme of open university films, discussions and workshops, involving College staff and visiting speakers, was designed.

(5) The basic pattern of the course remained constant from 1969 to 1977, but there was considerable revision of the detailed resourcing and organisation. Student reaction to the course changed over the years and the course had to be modified to take account of the students' hidden curriculum.

1.6 EVALUATION

(1) Evaluation, of course, started in 1968 but was, in the early years, extremely crude, being mainly a factual investigation using 'yes/no' type questions on the mechanics of the course. Course objectives remained implicit rather than explicit.

(2) In 1971 I was given access to computer facilities at the University of Surrey and, initially, two programs were used, one an item analysis program, used to develop an evaluation test, and the other the SALY program of statistical procedures for the social sciences (Essex University). In 1973 the SPSS (Statistical Package for the Social Sciences) was substituted for SALY, using an on-line link between the University of Surrey and the University of London. In 1974, I was given access to the SPSS program, using the computer facilities of the West Sussex County Council, and this opened up the possibility of a much more intense use of the program and a greater depth of analysis. Finally, in 1974, the Clustan IB cluster analysis program (University of St. Andrews) was purchased for use in conjunction with SPSS.

(3) It is interesting that Bloom, writing in 1970 (15), was able to say that the computer, because of its enormous storage capacity and the ease with which the stored data can be analysed, longitudinally as well as by cross-section, would help evaluators to develop new research approaches (Page 34).

(4) Alongside the use of statistical procedures to analyse evaluation questionnaires, I carried out individual and group interviews with students and staff to give an equally valuable second dimension to the evaluation.
The innovatory courses were for 200 plus students, involved independent and small group work and it was felt essential to place a heavy emphasis on objective data since it was only by this means, that the views and attitudes of the whole year group could be monitored. The problem with interviews and discussions is that they are selective in the total sample of students, who contribute to them, and so it is often not possible to achieve a representative viewpoint; this is not to claim that objective techniques are 100% representative.

The final pattern of evaluation which has emerged has been gradually achieved over the last seven years. It has involved a close monitoring of each year group of students from 1969 to 1975, looking at such variables as sex, age, personal education, parental education, I.Q., personality, main subject, age range of training, success in Final Examinations and passage through to the fourth year B.Ed. Examinations. This has enabled a canvas to be painted, of the College changing from year to year and also of the College, set against other institutions of Higher Education across the country. The innovatory courses have been monitored from year to year within this global institutional framework, setting response to the courses against some of these institutional variables. The aim of the evaluation has not been to compare the effectiveness of these innovatory techniques with other more traditional approaches, but rather to monitor the effectiveness of the courses from one year to another, changing them in the light of feedback and identifying the response of various sub-groupings of students to them.

1.7 MAIN THESIS
(1) As stated previously, the courses were developed, using the systematic model, modified by the illuminative approach to evaluation, suggested by Parlett and Hamilton. These paradigms will be discussed in more detail in the review of the literature (See 4.4).

(2) My central thesis has been arrived at retrospectively, as a result of the development of the two courses, outlined above. The thesis is that the systematic model to curriculum development proved inadequate for the successful development of these courses, since it failed to take sufficient account of the students' own objectives, or of the dynamic context in which the courses were taught. This thesis will be expanded further in the introduction to Part Three (pp 175-178).
REFERENCES TO CHAPTER ONE


PART ONE

AN ILLUMINATIVE PERSPECTIVE
INTRODUCTION TO PART ONE

(1) I will argue in the review of the literature (4.4.2.5(4)* and 4.4.3.4) that any curriculum development needs to be viewed in a total institutional context and this first part of the study attempts to do just this, by looking at the College and its students. The perspective taken is broader than the one strictly needed to look at the two innovatory courses, because I felt it was necessary to obtain this broader view in order to arrive at an informed judgment about these two innovations. Diagram (2.1) summarises the detailed cross references which will be made between the first part and part three, where the two innovatory courses are analysed.

Diagram 2.1

*Throughout this study, references to particular paragraphs will be shown by the use of brackets.
CHAPTER TWO

THE COLLEGE: ACADEMIC
AND CURRICULUM PERSPECTIVES
CHAPTER 2: THE COLLEGE: ACADEMIC AND CURRICULUM PERSPECTIVES

2.1. INTRODUCTION

(1) The purpose of this chapter is to build up as broad a picture of the College as possible, against which to set the development of the innovatory courses. Where possible, the Bishop Otter picture will be compared with that obtained from the literature, in order to set the College against other institutions of higher education.

(2) The chapter will start with a descriptive impression of the College, looking at the campus residential arrangements, and the College's distinctive style. It will then move on to examine student numbers from year to year, in order to gain some measure of the year group sizes taught by the education department. This section will also examine the question of student wastage and its possible hidden influences on the students who remain.

(3) The next section of the chapter will take an extended look at the staffing of the College, firstly looking at staff turnover and its possible effects on the development of the innovatory courses, secondly looking at age and length of service, followed by a look at the quality of staff, as measured by qualifications.

(4) The subject departments, in which students worked, parallel with their course in education, will then be examined, followed by a close scrutiny of final certificate results. This latter analysis was necessary in order to gain some measure of the differing academic and professional pressures on students.

(5) The analysis will then consider briefly the effect of the growth of the B.Ed. degree, and the hidden influence of the selection process for this fourth year degree, on one of the innovatory courses which was run in the third year of the students' course. Finally, the chapter will describe a detailed and slightly discouraging look at the use of the library in general and of one part of the education book stock in particular.

2.2. THE COLLEGE

(1) The general impression of the College which follows might be obtained by any visitor and proved important for the development of the two innovatory courses (see 5.7(2), 6.8.3(2, 3)).
Diagram 2.2

S T U D E N T  N U M B E R S

1873
1877
1883
1889
1895
1901
1907
1913
1919
1925
1931
1937
1943
1949
1955
1961
1967
1973
1977

100 200 300 400 500 600 700

GOVERNMENT CUT

GOVERNMENT CUT

GOVERNMENT EXPANSION
BOGNOR REGIS COLLEGE
OPENED (now part of
the Work-Sauer Institute
of Higher Education)

GOVERNMENT EXPANSION
COLLEGE BECAME RURAL
RE-WRiting COURSE STARTED

GOVERNMENT CUT
"... one of the most unified college of education campuses in the country ... with hostel groupings ... responding with some unity to the courses". (2.2(3,4))
(2) Bishop Otter College was originally founded in 1339 as a men's teacher training College. It was reopened in 1873 as a women's college (Diagram 2.2), and became mixed in 1960.

(3) It is generally felt to be one of the most unified college of education campuses in the country, with the original Victorian gothic buildings blending in with a main campus, built under the guidance of one architect, since the expansion in student numbers began in the late 1950s.

(4) Students are generally resident on the campus in their first and third years and in College lodgings during their second year. The College hostels are mainly in units of 12 study/bedrooms, and third year students tend to go into hostels with a few close friends. The second year students have a large study and social base, giving some unity to a potentially divided year. There was evidence, in this study, that these domestic arrangements were a significant factor in students' attitudes to courses, with hostel groupings of students responding with some unity to the courses (See 6.5.2 (7)).

(5) The College is generally regarded as a 'first choice' college, particularly for women students, enjoying a good professional reputation and virtually every visitor, whether lay or professional, is struck by its friendly atmosphere and air of professional confidence.

(6) The work of the College is very much based in the child-centred tradition, with an emphasis on developing the student as a whole person, rather than just on academic development. In this respect the College differed significantly from many colleges of education, which put greater emphasis on academic development. Staff generally regarded themselves as innovators, although my own feeling was that this was sometimes innovation of intent rather than practice, lacking detailed follow-through of the innovatory ideas.

(7) A picture emerges, therefore, of a close-knit, professionally oriented community, which regarded itself as offering a distinctive style of teacher training and these two innovatory courses must be viewed in this context. The close-knit community influenced student response (see e.g. 5.3.3(1), 5.6(8), 6.2.3(8)) and the child centredness and distinctive style influenced staff response (see e.g. 5.3.4(4), 5.6(9)6.5.1.2 (2,3)) to the two courses.
Diagram 2.3

**CHANGING STUDENT NUMBERS**

- YEAR ONE
- YEAR TWO - CERTIFICATE
- YEAR THREE
- YEAR FOUR - B.Ed.
- F.G.C.E.
- SHORT COURSE (1-2 YEAR)

**OTHER COURSES**

Source
D.E.S. RETURNS 67T
For 1975 and 1976 Certificate and direct entry B.Ed. are combined.
2.3 **STUDENT NUMBERS**

(1) It can be seen from diagram (2.2) that for 80% of its 100 years of history, it was a small college of less than 200 students but that, in common with every other college of education in the country, it expanded beyond all recognition in the 1960s, reaching a peak of 739 students in 1973.

(2) Diagram (2.3) is of interest because it covers the years in which the courses under study were conceived and developed and shows the total range of courses being followed in the College.

(3) The rapidity of the expansion from 1967 to 1971, linked with the growth of the fourth year B.ED. course, led to great unevenness in the yearly intake of students, and government policy, of rapid reduction of teacher training places from 1973 onwards, added to the problem. From 1967 to 1971 intakes remained fairly constant at around 220 students but, as is very clear from the diagram, the period 1972 to 1975 saw enormous variations in the yearly intake, ranging from 264 students in 1973 down to 137 students in the following year, nearly 50% less.

Diagram 2.4
(4) This unevenness in numbers from one year to the next, posed problems for curriculum development, since a course designed for one particular group of students one year, had either to cope with many more students the following year, or far fewer (see 5.7(3), 5.4.1(10), 6.1(4)). The Education Department courses, given as they were to whole year groups of students, were particularly affected by the problem but, as will be seen in this chapter, main subjects also suffered from rapid fluctuations from one year to another (see Diagram 2.11).

(5) Diagram (2.4) shows the College rate of expansion in comparison with the national picture in all colleges of education. It can be seen that the College continued to expand at a time when other colleges had passed their peak and, indeed, from 1973 onwards continued to recruit first choice candidates when others were failing to recruit even their reduced target figures.

2.3.1 STUDENT WASTAGE

(1) As well as looking at the number of students entering the College for a three year course, it is also necessary for the curriculum developer to be aware of the drop-out during the course.

(2) Wastage is partly accounted for by students leaving to get married; partly by students leaving as a result of one or two unsuccessful school practices, and partly by the loss of students lacking in motivation. Whatever the reasons, the size of the wastage figure may have implications for the curriculum for it would be reasonable to suggest that virtually every student friendship group may have had close contact with at least one student withdrawing prematurely from the 3-year course. It is not possible to assess the impact of the withdrawals but it may be a hidden factor affecting the motivation and aspirations of the students remaining in College.

Diagram 2.5
Diagram (2.5) shows that whereas student wastage in universities has remained relatively constant at a figure of about 14% (1,2) since the 1950s, wastage rates in colleges of education have risen from 7% (3) in 1961 to 17% (4) in 1975. These Robbins Committee average figures belie the great variation between institutions and subject areas. The university wastage rates, while remaining at 15% overall, were lower for arts subjects, averaging 12% and ranging from a wastage rate of 3% in one university to 22% in another.

The College wastage rate (Diagram 2.6) was, at 15%, slightly below the national average of 17%. In breakdown, however, it differed significantly from Bell's analysis (5) of five colleges of education between 1967 and 1970 (see diagram 2.5). Bell found that 62% of those withdrawing did so in their first year compared with only 6% in their third year, whereas the respective Bishop Otter figures were 39% and 18%, partly accounted for by the uncommitted first year course (see 1.4(2, 3)).

The important thing for the present analysis is that, with 3 out of every 20 students entering the College leaving before the end of the course, this may well have considerable hidden effects on the students who remain. In particular, it is likely that the simulation exercise, run as it was in term 5 (see Table 1.1), occurred at the peak time for many of the withdrawals. The important point is that it was not just the student leaving who was affected, but those remaining, who were often close friends.

2.4 THE COLLEGE STAFF

(1) A detailed analysis of the staff of the College was carried out for two main reasons. Firstly, in order to obtain a measure of staff mobility, during the years the innovatory courses were conceived and developed, and secondly, in order to look at staff qualifications, both initial and 'in service', comparing the education department staff with main subject department staff.

(2) This analysis was felt to be important because it would first of all help to focus on the problem of institutional development of innovatory teaching, when the membership of the institution and of individual departments within the institution is constantly changing. Secondly, it might help to identify differing academic climates in different subject departments, which might possibly influence student and staff reactions to the courses.
The following analysis is based on the staff list of the College as shown in successive annual prospectuses. This must inevitably lead to some inaccuracy, but a more detailed examination of staff records was clearly inappropriate.

2.4.1 STAFF MOBILITY

Diagram (2.7) summarises this 8-year period succinctly, showing how a staff of 53 in 1967 became a staff of 72 in 1974. The diagram shows, in percentage form, the nature of the change as it affected the Education Department compared with all other main subject departments in the College. Both Main Subject and Education start at their 1967 base line of 100% measured on the left-hand scale, but whereas Main Subjects had increased in size by 25% in 1974, the Education Department was over 60% bigger in size than it was in 1967, as can be seen on the right-hand scale.

Diagram 2.7
2.4.2 STAFF AGE AND LENGTH OF SERVICE

(1) In September 1975 the average length of staff service in the College was 7.8 years and the average age was 43.3 years, with approximately two thirds of the staff aged between 35 and 49, (diagram 2.8). In addition, as the bottom part of the diagram shows, a large proportion of the staff were unlikely to move to other jobs either because of their age or because of their existing length of service in the College.
2.4.3 STAFF QUALIFICATIONS

(1) For each academic year from 1967 to 1974, every member of staff shown in the prospectus was allocated a quantitative qualification score, based on total number of years of study (see diagram 2.9). The possibility of distinguishing between qualifications qualitatively was considered and rejected, because it presents too many ambiguities, and involves value judgments.

(2) Diagram (2.9) shows that, using this qualification measure, the Education Department compared well with all other Main Subject Departments, but additionally points to big differences between subject departments, when they were divided into two sub-groups.

(3) The years 1967 to 1974 showed a general improvement in the level of qualification of College staff, partly accounted for by an influx of graduates and partly by non-graduate staff taking additional 'in-service'
qualifications, such as masters degrees. This improvement in qualifications occurred particularly in the Education Department and is summed up in diagram (2.10). The two squares in this diagram represent all main subject and education staff who belonged to the College between 1967 and 1974, normalised to a common 100% base. The large number of education staff, who joined the College after the start of the development of the two innovatory courses, is very apparent, as is the emphasis on improving on initial qualifications. In connection with this, however, it needs to be noted that while many staff gained promotion, as a result of obtaining their qualification (see 'A'), others ('B') were not successful in gaining promotion, even though they improved their qualifications.

2.4.4 DISCUSSION OF STAFF ANALYSIS

(1) The implications of this analysis for curriculum development are complex and my conclusions must be somewhat tentative. Undoubtedly the rapid expansion in staff, together with associated staff mobility, created problems in maintaining a coherent continuity from year to year as the two innovatory courses were developed (see 5.7(5)). The problem lay in successfully communicating to new colleagues a curriculum rationale which was often implicit rather than explicit.

(2) Secondly, the high average age of staff needs to be seen, particularly in the context of group 'B', the 'old guard' of diagram (2.10). It might be reasonable to suggest that this group, representing 25% of the education department from 1970 onwards, might be seen as partly disillusioned, having improved their qualifications without subsequent promotion. My own judgment would be that, despite the expressed interest in innovation (see 2.2(6)) there was some evidence of conservatism and even antagonism with regard to these two innovatory courses (see 5.7(5) and 6.5.1.2).

(3) Finally, although it is difficult to substantiate it, there clearly were underlying academic differences between staff, despite later 'in-service' qualifications, and these differences partly centred on their own initial non-graduate experience of higher education. For some staff, therefore, the philosophic aims of the resource-based course created problems (see 6.5.1.3 and 6.8.3(2)).
(4) This analysis has, of necessity, been somewhat tentative. Although the specific conclusions may be challenged, the general evidence certainly influenced the development of these two innovatory courses.

Diagram 2.10

**Improvement of Qualifications**

**And Retirement: 1967-1974:**

**Departmental Comparisons**

**Main Subjects**

- N = 77 = 100%
- **A**: 20
- **B**: 20
- **C**: 19

**Education**

- N = 27 = 100%
- **A**: 3
- **B**: 5
- **C**: 8

= Retired

- No Extra Qualification

- Obtained Extra Qualification

A = Staff Who Left
B = The Old Guard (6 yrs plus at College)
C = The New Guard (5 yrs and less)
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2.5 THE MAIN SUBJECT DEPARTMENTS

(1) It was necessary to look at the subject departments of the College, because half of the students' working week was spent in them, and the interaction and conflict between the innovatory courses and main subject work will be a recurring theme in this study. This analysis will look at departmental size and the differences in the academic and professional standards of departments, as measured by success in final examinations.

(2) A six-year analysis of student numbers in main subject departments (Diagram 2.11) revealed considerable variation from year to year due partly to the uneven size in successive year groups (see Diagram 2.3) and partly to the delayed choice of main subject after the initial foundation course (see 1.4(2, 3)). The most important point to note is that students spent half of their working week in departments ranging in size from over 40 to less than 10, a marked contrast to the large year group courses in education. In addition, whereas the staff student ratio in education was 1 to 35 in 1974, it averaged a theoretical 1 to 13 in main subject departments.

(3) In passing, it is worth noting that a parallel investigation of the prospectuses of nineteen other colleges of education revealed ratios in education as extreme as 1 to 60.

(4) The significance of this analysis for curriculum development is in terms of the enormous contrast for students between the teaching styles of their work in education and in main subject and the two innovatory courses must have highlighted this contrast even further for many students.

2.5.1 ACADEMIC AND PROFESSIONAL STANDARDS

(1) I felt it was necessary to look at the final certificate results over a period of time, in order to be able to see more clearly the difference in performance between departments, since this might be a factor influencing student response to the innovatory courses, particularly in terms of assessment procedure.

(2) Diagram (2.12) reveals a slight, but consistent, difference in exam
Diagram 2.11

**Main Subject Departments**

1969 - 1974

- = Number of students
- = Number expressed as % of whole year group

**Art**

**English**

**P.E. Wing**

**History**

**Science**

**Geography**

**Music**

**R.S.**

**Mathematics**

**French**

Number of students
results between main subjects, taken as a whole, and the education department, while Diagram (2.13), which combines results over a three-year period, shows these differences, broken down by departments. Diagram (2.14)
CERTIFICATE EXAMINATION
AVERAGE STUDENT PERFORMANCE
MAIN SUBJECT
FAIL = 0  PASS = 1  MERIT = 2  DISTINCTION = 3

MATHMATICS

P.E.

WING

ART/CRAFT

ENGLISH

HISTORY

GEOGRAPHY

MUSIC

RELIGIOUS

STUDIES

FRENCH

SCIENCE

YEAR 1968 69 70 71 72 73 74 75

Source: B.O.C. Annual University Reports 1968 69 70 71 72 73 74 75
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takes these differences even further by monitoring the departmental results over an eight-year period and again revealing wide variations in some departments.

(3) These results will not be discussed in detail but they do reveal variations in assessment both between departments and within some departments over the years. These differences may be the result of differing academic standards, of differing assessment procedures, or of real differences in student ability. The important point is that they probably reflect some uncertainty about assessment in the eyes of the average student, and this proved to be a significant factor with both of the innovatory courses (see 5.6(7), 5.7(6), 6.8.3.3(1)).

2.6 **THE B.ED. DEGREE**

(1) The B.Ed. degree undoubtedly is an important factor in considering curriculum development in the college, because it clearly affected motivation for particular courses and probably affected reaction to teaching methods. In particular, the selection process for the B.Ed. almost certainly was a hidden factor in terms of the response to the resource-based course, timed, as it was, towards the end of the third year (see Table 1.1).

Diagram 2.15

**PROPORTION OF THIRD YEAR STAYING FOR B.ED.**

- □ Obtained place on fourth year
- □ Failed to obtain minimum entry criteria (not available)
- □ Did not apply or withdrew before finals

Diagram showing the proportion of students staying for B.ED. from 1967 to 1977.
(2) Diagram (2.15) shows the growth of interest in this fourth year over the years, with interest always outstripping success in students obtaining the necessary minimum entry qualifications. This growth of interest was, however, spread unevenly across departments (Diagram 2.16), although by 1975 (see right-hand column) this unevenness levelled out.

Diagram 2.16

---

The B.Ed. Degree (1968-1976)
Departmental Differences

<table>
<thead>
<tr>
<th></th>
<th>1969</th>
<th>1975-76</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Students</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>P.E.</td>
<td>243</td>
<td>37</td>
</tr>
<tr>
<td>Mathematics</td>
<td>78</td>
<td>38</td>
</tr>
<tr>
<td>Art/Craft</td>
<td>363</td>
<td>50</td>
</tr>
<tr>
<td>English</td>
<td>276</td>
<td>33</td>
</tr>
<tr>
<td>French</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Geography</td>
<td>156</td>
<td>33</td>
</tr>
<tr>
<td>History</td>
<td>80</td>
<td>21</td>
</tr>
<tr>
<td>R.S.</td>
<td>77</td>
<td>37</td>
</tr>
<tr>
<td>Music</td>
<td>61</td>
<td>33</td>
</tr>
<tr>
<td>Science</td>
<td>81</td>
<td>25</td>
</tr>
</tbody>
</table>

(3) Looking at the growth of the B.Ed. (Diagram 2.17), (which is based on the percentage of 3rd years staying for the 4th year), the sex difference in recruitment to the B.Ed. is very apparent in the early years, with fewer women than men. The D.E.S. projection in 1968 (6) was for 40% of all of the men entering the colleges to be actually taking the fourth year by 1977. Both sexes, according to this diagram, were ahead of the national average for recruitment to the B.Ed. A detailed analysis of the years 1972-1974, however, showed that 36% of the women eligible to apply for a B.Ed. failed to do so compared with only 7% of the men.
(4) The selection process for the fourth year took place at the same time as the resource-based course in term eight of the students' course and clearly had a significant influence on response to this course.

(5) As the numbers involved in the B.Ed. increased, the College paid greater attention to the problem of advising students as to their likely chances of taking a fourth year. The problem was to advise students accurately in the February preceding finals, as to the likely grades they would achieve in the following July.
Diagram 2.18 shows the total picture of the success of this advice over a 4-year period. Of the 625 students eligible to be considered for the B.Ed. in this period, 30% withdrew their application.
for the fourth year at the earliest opportunity, without even asking for College advice on their likely chances, but 20% of these, in fact, achieved the necessary qualifications for entry to a fourth year. Of those recommended as being likely to achieve the necessary grades in finals, nearly 20%, in fact, failed to obtain them. Predictably about half of those who were told there was an element of doubt, in fact, failed to obtain the necessary minimum entry qualifications. Almost all of the 10% of students who were not recommended, when they asked for advice, withdrew and virtually none, in fact, obtained the minimum entrance requirement. Of the 11% of the year who withdrew their application, having been told it was doubtful if they would meet the necessary minimum entrance requirement, 20% in fact could have had a fourth year.

2.6.1 THE B.ED. DEGREE AND THE INNOVATORY COURSES

(1) The growth of student interest in staying on for the fourth year degree course paralleled the development of both of the innovatory courses and had a marked effect on response to both of them (see 6.8.3.1 and 5.7(7)). Initially the effect was more noticeable in the men but gradually it influenced most of the year group.

(2) Although only a proportion of the year actually stayed on for the extra year, virtually all of them had to make conscious decisions about applying for this year and 70% sought College advice as to their chances during term eight of their course. Diagram (2.18) has shown that this advice tended to be cautious or discouraging for 69% of those seeking it.

(3) The resource-based course took place, therefore, in a climate of uncertainty or disillusionment for many students and clearly the effects were enormous. For some, there was a lack of motivation; for others there was very high motivation; for others, there was a conflict between great interest, but the need to give priority elsewhere, in terms of assessment.

(4) A final thought-provoking point comes from Diagram (2.19), which shows relatively few students being awarded 3rd class or Pass degrees in the fourth year. It may be that more students could have been allowed through into the fourth year with some profit.
2.7 THE USE OF THE LIBRARY

(1) A different facet of the College's academic work was revealed by
the analysis of student and staff use of the library. This analysis was
carried out because it proved difficult to make informed judgments about
the quality of the study carried out on the innovatory courses. It was
necessary, in other words, to make some judgment about the norms of the
College, as revealed in the use of the library, against which to set the
reading done on the innovatory courses (see 6.6.2(11)). Daily issues,
long vacation issues, inter-library loans and a detailed issue analysis
of one major section of the library were all considered in this analysis.

2.7.1 DAILY BOOK ISSUES

(1) The library daily record of issues was analysed for the academic
years 1973-4 and 1974-5. This record lists the total number of book
issues per day as shown by a count of readers' tickets at the end of the
day. It does not include periodicals, short-term loans or issue of
school practice books.
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(2) Clearly not every member of the College used the library, but Diagram (2.20) summarises the issue analysis, by averaging the issues to all potential borrowers, both staff and student for each week. There was some evidence to suggest a more intensive use of the library by the 1974-75 year group, but this was only apparent in the first two terms.

Diagram 2.20

The general pattern of issues, with peaks at each end of every term and a half term trough, was the same for both years, with some evidence of a lower usage in the hot summer term. Weekly borrowings averaged 1.16 books for each student in the 1973-1974 academic year, and 1.33 in the following year.
(3) The weekly lending pattern (Diagram 2.21), even allowing for the fact that the library was only open for part of Saturday, reflected the five day week which will also be highlighted in later sections of this study (see 3.12.2(1), 5.7(9), 6.5.2.1(3)).

2.7.2 LONG VACATION ISSUES

(1) The analysis above, although it tells something of overall lending patterns, tells nothing of the use made of the library by individual members of the College. In order to monitor this, a spot check was made in the middle of the 1975 long vacation of all books on loan to staff and students, as shown by names on borrowers' library tickets.

(2) Diagram (2.22) summarises this, revealing considerable variation between the various sub-groups. These differences were more marked when Diagram 2.22
it is realised that at last 25% of staff and of the second year students, and 50% of the first year students borrowed no books at all during the long vacation and a relatively small proportion borrowed six or more. It should also be noted that the staff figure is rather inflated, as a measure of vacation issues, because 14% of the 230 books were, in fact, taken out during the first half of the summer term.

(3) It is necessary now to set this analysis in a broader context. In 1973, a Department of Education and Science-sponsored project (7) reported on a 1971 analysis of the libraries of a number of colleges of education and universities. This report showed (pp. 33 and 34) a similar yearly borrowing pattern to that shown in Diagram 2.20 with a similar fall-off in the summer term.

(4) On page 30 it listed an annual average global issue figure for four colleges of education of 56 or more books per student and on page 266 provided an average issue figure of 50.8 for seventeen colleges. This is a cruder average than the weekly one used in Diagram (2.20), but the comparable 'crude' Bishop Otter average was 31.3 and 36.9 in the two years 1973-4 and 1974-5 respectively. Accepting that there was probably some inaccuracy or lack of comparability in the way the data was collected in the different colleges, a somewhat depressing picture of library usage at Bishop Otter emerged, and this was to be reflected in both innovatory courses (see 5.7(8), 6.6.2.(11)).

2.7.3 INTER-LIBRARY LOANS

(1) So far the analysis has concentrated on the number of library issues and has indicated the consequent implications for the innovatory courses. The argument now attempts a quality judgment about the usage of the library.

(2) The Department of Education and Science survey, just referred to, attempted to gain some measure of the breadth of use of the total book stock by dividing annual total issues by the total book stock. It arrived at issue figures of 1.0 to 1.9 per book in stock in each of the four colleges, while the equivalent Bishop Otter figure ranged from 0.6 to 0.8 issues per book.

(3) This indicated some lack of breadth in use of the total book stock and this was explored further by analysing inter-library loans over a two-year period and also by carrying out a more detailed analysis of one section of the library.
Diagram 2.23 shows that only 30% of the staff and an average of 15% of the students made any use of the service, although it was much more heavily used in 1974-5, and, of these, only a small proportion used the service intensively.

(5) It might be reasonable to suggest that this two-year analysis revealed some lack of breadth in reading, particularly on the part of the staff. It is true that, in a college of education, not all subject areas are equally academic and it is equally true that library provision was often good, but it is likely that staff in most subject areas, exploring the developing limits of their discipline, would be likely to need the inter-loan service at least once or twice during a two-year period.

(6) This limited breadth of use may have contributed to some of the problems associated with the use of seminar tutors on the resource-based course (see 6.5.1.4).
(1) A lack of breadth was identified in student reading on the resource-based course (see 6.6.2(8, 9)), and this was paralleled in the results of a sample survey made of the use of one major section of the education book stock.

(2) The survey monitored the total number of times books had been issued between October 1972 and the 14th November, 1975. Books added after October 1972 were excluded from the analysis, which was in three parts. Firstly 562 books, classified between Dewey classifications 370 and 370.193, which were on the shelves on November 14th, were examined and secondly a one in three analysis was made of the books classified between 370.1931 and 375, giving a further 823 books. Finally, an additional 196 books, similarly classified between 370 and 375, which were out on loan on November 14th, were analysed as they were returned to the library during the subsequent weeks.

Diagram 2.24
Since a preliminary analysis revealed the first two analyses to be broadly similar in pattern with the sole exception of slightly less nil issues in the sample survey, the two sets of data were combined. Diagram (2.24) shows that 59% of all of the books on the shelf had either not been issued at all in the three years or had only been issued once or twice, while only 25% had been issued more than six times. The diagram shows, however, that the books returned after November 14th predictably had a higher rate of issues.

Finally, one more fact needs to be noted. Although the above analysis excluded books added to the book stock after October 1972, in fact, 40% of the books returned during the period November 14th to December 12th from this section of the library were, in fact, 'new' in this sense.

It would appear, therefore, that in this major section of the library, up to 60% of the books had hardly been issued at all in the three-year period and nearly half of the borrowing was limited to books only two or three years old. At a more subjective level, it was apparent that there was a very strong preference for the very practical books, with only limited use for the more theoretical books, and very limited use of the 'wider' kind of reading one hoped would take place.

Summing up this library analysis, a picture emerged of a library which appeared to be under-used by a significant number of staff and students and which appeared to compare badly with some other colleges of education. The analysis took no note, however, of the use of the short term loan system or of the use by students within the library, of books for reference purposes, and there was strong evidence to suggest that these were both significant.

2.8 GENERAL CONCLUSIONS

Bishop Otter College is generally judged to be a highly successful college, with a very unified and beautiful campus, a good atmosphere which immediately strikes all visitors, a distinctive teaching style and a concern with students as individuals. In short, a happy and close-knit community.

A picture emerged in this analysis of a college responding to the pressure to increase rapidly in size in the 1960s and to contract equally quickly in the mid-1970s.
(3) From the curriculum development point of view this rapidity of expansion had two main effects. Student numbers fluctuated dramatically from one year to the next, thereby affecting course design, and the rapid expansion in all colleges nationally, led to staff mobility and the problem of maintaining a coherent pedagogic dialogue within the College, in developing new teaching approaches. In more precise terms, the innovatory courses were originally conceived in 1969 and, by 1975, many of the original staff had left and many new staff had joined.

(4) The analysis of staffing suggested some conflict for staff who viewed themselves as innovators but who, at the same time, appeared antagonistic to curriculum change. It also highlighted the problem of differing academic and professional values stemming from the very varied previous experience of the staff concerned with these innovatory courses.

(5) Average numbers of students in main subject departments varied greatly from one year to the next due partly to the total variations in year entry size, but also due to the effect of delayed choice of main subject. From the point of view of designing education courses for whole year groups of students, the main conclusion to be drawn from the analysis was the effect on students, used to being taught in very small groups in main subjects, of the large size and lack of face to face contact with tutors of the innovatory courses in education.

(6) Analysis of final examination results revealed some unevenness in marking standards between departments and it was not possible to say whether this reflected basic differences in the calibre of students recruited to different departments, different assessment procedures in departments, differing levels of motivation, or real differences in academic standards between departments. It certainly made students uncertain about their assessment position and this influenced their reaction to the third year courses.

(7) The review of the growth of the B.Ed. provided a valuable insight into the hidden pressures on any third year course, caused by the admission procedure for the fourth year. The important thing which emerged was that for some students it was a time of anxiety and for others a time of disillusionment if they had received discouraging advice, and this again affected the resource-based course.

(8) The final part of the chapter focussed on the use of the library. A slightly depressing picture emerged of relatively low use by many students and staff. The more reliable two-year analysis of inter-library
loans again showed low use by both groups with a very small group making intense use of the facility. Finally, the detailed shelf analysis of one major education section showed extremely limited borrowing from the total book stock, with only a small number of books being used at all intensively.

(9) This perspective of the College has been very wide ranging, but I have tried to link it very carefully with the innovatory courses, which will be studied in Part Three of this study. These courses need to be seen set in this broader perspective, if any informed judgment is to be made about their development.
REFERENCES TO CHAPTER TWO


(3) Committee on Higher Education (1963), op.cit. Ref. 1, p. 157, para. 77.


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CHAPTER 3: THE STUDENTS

3.1 INTRODUCTION

(1) The previous chapter described the College from a number of differing perspectives and, where possible, set the description in a broader context of higher education. Each institution, however, is so very different from the others that real comparisons are, in fact, difficult to obtain.

(2) This present chapter will concentrate on the students themselves, and this may provide a firmer comparison base with other higher education students. One point should be noted, however, which will be developed at greater length in the review of the literature and that is that there is a lack of comparability between so many studies in the literature, and this limits the effectiveness of the comparisons.

(3) An attempt will be made to draw a picture of the general characteristics of the students coming to the College, based on data drawn from a number of years.

3.2 GEOGRAPHIC RECRUITMENT OF STUDENTS

(1) Diagram (3.1) compares the geographic recruitment of half the students entering the College in 1954 and 1955 with all of the students entering the College between 1973 and 1975. Despite a trebling in student numbers, the recruitment pattern was broadly similar, apart from a fall-off in the numbers coming from the London area.

(2) From the point of view of the innovatory courses, 76% of the students came from within an eighty mile radius of the College and 46% came from within a 40 mile radius. It would be reasonable to suggest that many of these students were able to maintain close contacts with their homes and this may have resulted in many students going home at weekends. This appeared to be a factor which influenced the small group work of these innovatory courses (see 5.7(9) and 6.5.2.1(3)).

3.3 SEX DISTRIBUTION

(1) It was reasonable to assume that the sex balance of the year group might well prove to be a factor influencing student response to these innovatory courses, and so the variable was examined carefully. The
Diagram 3.1

**College Recruitment 1954 - 1975**

<table>
<thead>
<tr>
<th>Area</th>
<th>1954/5</th>
<th>1973/4/5</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>A SUSSEX, SURREY, HANTS</td>
<td>55</td>
<td>243</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B WALES AND SOUTH WEST</td>
<td>9</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C HOME COUNTIES</td>
<td>73</td>
<td>164</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D MIDLANDS AND EAST ANGLIA</td>
<td>11</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E NORTH AND SCOTLAND</td>
<td>5</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- = 1954/1955
- = 1973 - 1975
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
previous chapter has already shown (2.6(3)) the greater interest of
the men compared with the women in staying on for the fourth year B.Ed.
degree and the analysis of the resource based course (6.8.3.1) will
show how the selection processes for this degree course affected student
response and, in particular, the response of the men. There also
appeared to be a difference in the response of the two sexes to the
simulation exercise (see 5.7(9)).

(2) It has already been noted that the College became mixed in 1960
and the plan was for it to have eventually a balance of 40% men and
60% women (1). In 1967 and 1968, 33% of its intake were men and, as
Diagram (3.2) shows, this was again the case in 1969, but from 1970 to
1971 the proportion of men was deliberately lowered to 18%, whereas the
national average of men in colleges of education remained at about 28%.
In order to maintain a balance of one third men in the late 1960s, the
College had recruited some who were poorly motivated for teaching, as
evined by the 1968 wastage figures (see Diagram 2.6), and this had
equally meant keeping out well-qualified and possibly better motivated
women, and so the decision was taken to recruit less men.

Diagram 3.2

(3) This change in the sex balance of the year cohorts certainly had
some influences on the course developments under review, for they were
conceived at a time when 33% of the students in a year group were male,
but were implemented when the proportion had dropped to 18%. 
3.4 AGE DISTRIBUTION

(1) Diagram (3.3) shows that in recent years the College has tended to recruit slightly more younger students than colleges of education as a whole. This is not surprising, for colleges with larger numbers of older students will probably be situated in the larger conurbations.

Diagram 3.3

(2) The more formal education probably experienced by the older students would lead one to expect a more conservative response to innovatory teaching approaches, but this did not happen and, indeed, in the case of the simulation, the older students were at an advantage (see 5.3.4(2), and 5.7(10)). Smallness of numbers, however, prevented any more generalisable results from being deduced.

3.5 SCHOOLING

(1) The next three sections on schooling, parental education and social background will draw on a body of literature, which has been
critically summarised in Appendix (Y). I felt it necessary to consider this question of schooling because comprehensive education and reorganisation of education formed part of the content of both of the innovatory courses (see 5.4.1(10), 6.3).

(2) Diagram (3.4) provides an overall summary of the schools previously attended by students joining the College between 1969 and 1975, although the data for 1969 and 1972 may contain some inaccuracy owing to lack of detail about the classification of schools for some students. The direct grant schools were particularly difficult to categorise, but they were felt to be better placed alongside the independent schools, because of their greater degree of selectivity, both academically and socially.

Diagram 3.4

(3) On average, nearly 45% of each year group of students had a grammar school background with an additional 17% coming from the independent sector. Setting this in the broader context of the literature (Diagram 3.5), but accepting the problem of differences in categorisation between studies, the College did not recruit as many
students from the independent sector as some universities, but appeared to have maintained the 1961 position compared with the other colleges of education (asterisked). The 1961 Robbins Committee survey of

Diagram 3.5

**SCHOOLING**

<table>
<thead>
<tr>
<th>STUDY REFEREE</th>
<th>N</th>
<th>INSTITUTION</th>
<th>MAINTAINED</th>
<th>DIRECT GRANT</th>
<th>INDEPENDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>L (1961)</td>
<td>608</td>
<td>OXBRIDGE</td>
<td>10%</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>L</td>
<td>633</td>
<td>LONDON</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>L</td>
<td>186</td>
<td>LARGE</td>
<td>60%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>L</td>
<td>380</td>
<td>SMALL</td>
<td>90%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>250</td>
<td>WALES</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>659</td>
<td>SCOTLAND</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>1,085</td>
<td>ROBBINS</td>
<td></td>
<td></td>
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<tr>
<td>E (1954)</td>
<td>776</td>
<td>HULL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E (1953)</td>
<td>784</td>
<td>BISHOP OTTER</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>J (1964)</td>
<td>898</td>
<td>HULL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>562</td>
<td>HULL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A (1966)</td>
<td>264</td>
<td>ESSEX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>217</td>
<td>SUSSEX</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>H (1957)</td>
<td>1,589</td>
<td>MANCHESTER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* See Appendix (4)

universities and colleges (Study L) needs to be particularly noted because it was relatively large scale and used identical criteria for both universities and colleges of education.

(4) Previous schooling had an influence on the innovatory courses, affecting both of them, in terms of the small numbers of students who had experience of comprehensive education (5.7(11)). At a more general level, the fact that nearly 20% of the students had been to secondary modern schools may well have been a contributory factor influencing the achievement of independence of learning and critical attack (6.7.1(2)).

3.6 PARENTAL EDUCATION

(1) There was very clear evidence that in recent years just over 60% of the students, coming to the College, were first generation higher education, in the sense that neither parent had continued full-time education after the sixth form (see Diagram 3.6). A broad definition of
higher education was used to include any full-time course of training including, for example, nursing, but if an academically narrower definition had been used, the proportion of first generation students might well have been even higher.

Diagram 3.6

(2) Diagram (3.7) attempts to set this in the broader context of some of the literature but immediately raises the problem of the lack of comparability between studies, with some results presented separately for either father or mother and other results presented combining both parents. The Bishop Otter data is presented separately, but the corresponding combined data for the right hand column of Diagram (3.7) would be 67% (see Diagram(3.6), 1971 year group). Although diagram (3.7) reveals big differences in the proportion of first generation higher education students between some universities, it shows relatively little difference between Bishop Otter and the majority of the other universities and colleges of education (the colleges are again asterisked).

(3) A picture emerges, therefore, of a College, with the majority of students coming from homes with no previous traditions of full-time higher education and with less than 20% of the students having parents who were themselves graduates. The curriculum development implications of this analysis will be discussed at the end of the next section.
3.7 SOCIAL CLASS

(1) I attempted to gain a more detailed impression of student background by analysing parental occupations, as given on the student's application form for a College place. In cases where this information was imprecise, I chose the lower status alternative.*

Diagram 3.8

(2) Diagram (3.8) presents this analysis in a broader context, comparing the 1971 data with that for 1955 and also for the period 1873-1883 (based on the 1883 annual report). In broad terms, the College no longer recruited a large proportion of its students from a traditional middle class background of the professions, the Church, the army, but otherwise there was little difference between the 1955 and 1977 analyses, except that more students came from homes with a commercial or industrial background.

* e.g. the definition 'civil servant' would be treated as III (Non Manual) on the Registrar General's classification, rather than II.
Based on Table 4 of the Statistical Supplements to the Vocational Report.

<table>
<thead>
<tr>
<th>INDUSTRY</th>
<th>TECHNICAL PROFESSIONAL</th>
<th>TECHNICAL MANAGERS</th>
<th>ARMY OFFICERS</th>
<th>ARMY PRIVATE</th>
<th>NAVY OFFICERS</th>
<th>NAVY PRIVATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIVERSITY</td>
<td>47%</td>
<td>41%</td>
<td>53%</td>
<td>48%</td>
<td>43%</td>
<td>48%</td>
</tr>
<tr>
<td>BISHOP OFFER 1877-83</td>
<td>27%</td>
<td>32%</td>
<td>31%</td>
<td>34%</td>
<td>33%</td>
<td>34%</td>
</tr>
<tr>
<td>1971 ACTIVE MALES</td>
<td>16%</td>
<td>17%</td>
<td>18%</td>
<td>19%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>OCCUPATION GROUP</td>
<td>10%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
<td>14%</td>
<td>15%</td>
</tr>
<tr>
<td>REGISTER GROWTH</td>
<td>10%</td>
<td>11%</td>
<td>12%</td>
<td>13%</td>
<td>14%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Parental Occupation
ENTRY QUALIFICATIONS - "... the very wide range of academic qualifications ... ranging from three good 'A' levels to five 'O' levels and this breadth of qualification was one of my main reasons for adopting these innovatory teaching methods..."

(3.8.1(1))
56

(3) This analysis is summed up succinctly and broadened even further in Diagram (3.9), where it can be seen that Bishop Otter was broadly in line with all the universities taking part in the national clearing house scheme, in terms of the types of occupations followed by their fathers.

(4) Diagram (3.10), however, reveals some differences, when these occupations are categorised in social class terms, for then the College appears to have more students bunched in the middle of the social class categories compared with some other higher education institutions. By way of comment, however, it should be born in mind that these classifications are somewhat arbitrary, with Robertson (14) providing a useful critique of the various social class scales. Their arbitrariness can be seen, in that Bishop Otter appeared to have 35% of its students in the working class category, when identical criteria to studies 'E' and 'F', were used, compared with only 23% in this category, when Furneaux's criteria (15), for avoiding too much bunching in the Class III classification, were used.

(5) To sum up this extended analysis of student background showed that many clearly came to the College lacking the traditions of higher education and only a proportion of the students came from middle class homes. The differences between the College students and the other students categorised in the literature were not consistent enough for any firm conclusions to be arrived at.

(6) There appeared to be some evidence from both of the innovatory courses (see 5.3.4(2), 5.7(12), 6.5.2(6) and 6.7.1(2)) that home background might have been one of the factors influencing response to the course. Certainly, as Abbot argues (16) we need to monitor carefully the response of working class students to their courses.

3.8 ENTRY QUALIFICATIONS

(1) This section will attempt to analyse the qualifications of students entering the College and to relate these to the national scene as far as possible. In order to provide a more informed picture, the analysis has been spread over at least a six-year time span so that trends can more clearly be identified. The data was obtained from a number of sources and these are discussed in more detail in Appendix (Z).
**Diagram 5.10**

<table>
<thead>
<tr>
<th>Class</th>
<th>Lower Middle</th>
<th>Upper Middle</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I</strong></td>
<td>38%</td>
<td>42%</td>
<td>39%</td>
</tr>
<tr>
<td><strong>II</strong></td>
<td>25%</td>
<td>29%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>III</strong></td>
<td>27%</td>
<td>24%</td>
<td>26%</td>
</tr>
</tbody>
</table>

**Social Class Comparisons**

- **I** and **II** or **I**
- **III**

**Institution Reference**

- **Bristol**
- **Cambridge**
- **Oxford**
- **London**
- **Hull**
- **Exeter**
- **Warwick**
- **Manchester**
- **Birmingham**
- **Sheffield**
- **Liverpool**
- **Nottingham**
- **Leeds**
- **York**
- **Reading**
- **Belfast**
- **Open University**
- **Durham**
- **Northampton**
- **Southampton**
- **Edinburgh**
- **Aberdeen**
- **Newcastle**

**See Appendix (Y)**
(2) The Principal of the College was able to write in the 1919-20 Annual Report:

"The admission for September 1920 contains a good proportion of students who have passed matriculation or its equivalent. In this way I hope that the standard of studentship in the College may be raised". (p. 5).

Diagram 3.11

(3) Student qualifications have improved nationally since then and (Diagram 3.11) Bishop Otter continued to recruit above the national average for all colleges, in terms of its women students, but was less successful with its men students.
Diagram 3.12

Diagram (3.12) sets these results in the broader context of higher education, using the scores given in Table (3.1) below:

Table (3.1)

<table>
<thead>
<tr>
<th>QUALIFICATION</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 + 'A' levels</td>
<td>5</td>
</tr>
<tr>
<td>2 'A' levels</td>
<td>4</td>
</tr>
<tr>
<td>1 'A' level</td>
<td>3</td>
</tr>
<tr>
<td>'O' levels only</td>
<td>2</td>
</tr>
<tr>
<td>Other qualifications</td>
<td>1</td>
</tr>
</tbody>
</table>
(5) Accepting that these scores may give undue emphasis to students with higher qualifications, clear differences emerge between university, C.N.A.A, and college of education students, partly accounted for by the fact that 25% of college students possessed no 'A' levels at all.

(6) So far, the analysis and comparisons have been in terms of quantitative differences in qualifications, but I also attempted to look at qualitative differences. The Bishop Otter students' 'A' level grades were compared with those obtained by Entwistle (17), recoding Entwistle's data so as to discount 'O' level passes at 'A' level (see Diagram 3.13). Grades on individual 'A' levels were added to give a total score, shown on the bottom axis of the Diagram.

Diagram 3.13

---

**Comparison of 'A' Level Grades**

- Sources
  - D.E.S. Record Card
  - Rowntree Research Unit (Lancaster)
  - Prediction of Academic Performance, Vol. One

---

**Legend**
- The 'Rowntree' Colleges
- The 'Rowntree' Universities
- Bishop Otter 1969
- Bishop Otter 1974

**Means**
- 4.5
- 9.4
- 3.7
- 4.5

*Rowntree data recoded A = 5  \(D = 2\)
B = 4  \(E = 1\)
C = 3

(See Text)
(7) Over 60% of the college students scored 4 or less compared with only 5% of the university students and less than 10% scored 10 or more compared with 30% of the university students. Accepting that college students averaged nearer two 'A' levels and university students nearer three 'A' levels each, this means that the average college student had two 'A' level passes at about grade 'D' whereas the average university student had three passes at about grade 'C'.

3.8.1 SUMMING UP THE QUALIFICATIONS

(1) This was probably one of the most important analyses in this illuminative perspective, because it homed in on the very wide range of academic qualifications of the students, ranging from three good 'A' levels to five 'O' levels and this breadth of qualification was one of my main reasons for adopting these innovatory teaching methods (see 1.4(4)). The fact, however, that a large number of students held no 'A' levels, or had obtained very poor grades at 'A' level, was probably a significant influence on the development of both of the courses (see 5.7(12), 6.7.1(2), 6.8.3.1(1)).

Diagram 3.14

**POPULARITY OF SELECTED 'A' LEVELS**

(AVERAGE 1969-1974)

<table>
<thead>
<tr>
<th>Subject</th>
<th>ALL COLLEGES (N=40661)</th>
<th>BISHOP (N=255)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGLISH</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>HISTORY</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>GEOGRAPHY</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>ART</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>FRENCH</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>MATHS</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>R.S.</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>BIOLOGY</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>DOM. SC.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ECONOMICS</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>BRIT. CONST.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CHEMISTRY</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>NEEDLEWORK.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>PHYSICS</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>MUSIC</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BOTANY</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>CRAFT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.9 'A' LEVEL QUALIFICATIONS AND CHOICE OF COLLEGE MAIN SUBJECT

(1) The right hand column of Diagram (3.14) shows the average number of 'A' levels obtained each year over a six-year period for each subject, and also represents this as a percentage of the average of 255 'A' level passes obtained by students each year. This heavy bunching of 'A' levels in a few subjects was not nearly so apparent in the proportion of the year choosing to follow each main subject (see Diagram (2.11)) and revealed some evidence of students choosing a main subject at the end of their second term (see 2.5(2)), for which they held no 'A' level qualification. In passing, it is worth noting that an analysis of the prospectus's of 53 colleges of education showed only 8% allowing for this kind of delayed choice, although a further 11% allowed for change during the initial weeks of the first term.

Diagram 3.15
(2) Diagram (3.15) examines this process in greater detail for two year groups combined, showing that of the 123 students who held an 'A' level in English, 26% took it as a main subject and a further 37% chose to follow one of their other 'A' level subjects, but a further 37% chose a main subject for which they held no equivalent 'A' level.

(3) The diagram needs to be interpreted with some caution because, by focussing on each 'A' level separately, students holding more than one 'A' level will appear against each 'A' level they hold. Nevertheless, accepting these limitations, there would appear to be some evidence that a significant number of students followed a main subject for which they held no 'A' level. When we add to this the 25% of each year group who possessed no 'A' levels at all, a picture emerges of a large proportion of each year group, who might feel compelled to give additional time to their main subject work at the expense of their work in education, simply in order to hold their own against better qualified peers, and this probably affected the innovatory courses (see 5.7(6), 6.8.3.3(1)).

3.10 STUDENT PERSONALITY

(1) Common sense would suggest that personality might prove to be a significant factor to explore, in looking at the response to innovatory teaching methods, and this section will attempt to look at the personality of the College students. An attempt will be made to set the findings in the broader context of the literature of higher education, but it will again come up against the lack of comparability between results.

(2). Form 'A' of the Eysenck Personality Inventory was given to all students as part of the normal College interview routine and a seven year analysis revealed an average mean score of 12.5 on the Extroversion Scale and of 9.1 on the Neuroticism Scale, with very little variation between year groups. Table (3.2) shows four of these years submitted to a more detailed analysis and sets them in the slightly broader context of the literature.

(3) It proved difficult, however, to make meaningful comparisons, because, although the two versions of this inventory, forms 'A' and 'B', are claimed to be equivalent, having both been given to the same two groups of original testees, the scores differ between the two versions and in addition, the small size of the sub-groups, used to establish the norms, makes them rather suspect.
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EYSENCK PERSONALITY

Standard Deviations are not shown, because on all
studies they were no greater than 5-0 and rarely
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On the extroversion scale, while college of education students were slightly more extroverted than the norms (18) for the population as a whole, university students were, predictably, slightly more introverted, but the differences are slight, showing some lack of sensitivity in the scales. More importantly, though, the 125 women P.E. students at the College had a significantly higher mean score of 15.4, revealing greater extroversion, a finding paralleled by Hendry and Whiting (23).

There were more differences on the scale measuring neuroticism, and Bishop Otter appeared, on average, to be recruiting more stable students, as measured by this test, than any other higher education institution shown. The quoted norms for both the college of education and the university students on form 'B' of the test would appear to be on the low side. The most important thing to note is the consistently higher degree of stability, as measured by the test, of the men compared with the women, although in the case of the Bishop Otter students, the difference was only of significance at the .05 level. This difference between the sexes was noted as early as 1959 by Lynn (24).

To sum up, the personality inventory, if lacking sensitivity, is relatively stable from one year to another. The Bishop Otter students, in common with other college of education students, were more extroverted than university students in general, and the College P.E. students were particularly so. Men students were generally more stable than women students and the Bishop Otter students were more stable than most. The two forms of this Inventory, combined with the less than satisfactory norms made it difficult to make satisfactory comparisons.

In terms of the response to the innovatory courses, the stability and extroversion of many of the students probably contributed to the response to the simulation exercise (5.3.4(2), 5.7(13)). Conversely, the lack of introversion and instability may have made it more difficult to achieve some of the philosophic objectives of the resource-based course (6.7.1(2)). There was no indication, however, that personality was a significant factor in the formation of sub-groups of students (6.5.2(6)).

3.11 INTELLIGENCE AND ACADEMIC APTITUDE

It proved difficult to make informed comparisons between the College students and other students in higher education, because the only intelligence test, routinely administered by the College to students
Diagram 3.16

**AH6 Comparisons**

- □ = University
- □ = Colleges of Education
- □ = Bishop Otter

**Verbal**

Lowest 10% | Next 20% | Middle 40% | Next 20% | Top 10%

**Numerical**

Lowest 10% | Next 20% | Middle 40% | Next 20% | Top 10%

**Scores**

Lowest 10% | Next 20% | Middle 40% | Next 20% | Top 10%

**Means**

- Universities (693)
- Colleges of Education (691)
- Bishop Otter (221) 1971 yr. group
at interview, was a non-verbal test of reasoning (25), which had no national norms.

(2) An attempt was made with the 1971-1974 year group to obtain a more informed judgment and this year group was given, on entry, the A.H.6. test of High Level Intelligence (26), the Watson Glaser Critical Thinking Appraisal (27) and half of the year took a trial version of the Committee of Vice Chancellors Test of Academic Aptitude (28).

(3) The results of these tests indicated that the Bishop Otter students scored below the quoted norm on the first two tests. Diagram (3.16), which shows the good ability of A.H.6. to discriminate, reveals that the main difference occurred on the verbal section of that test.

(4) The mean score of 69.2 on the Watson Glaser Appraisal was again on the low side compared with the British norms (29)*, which ranged from 66.5 to 81.32, although many of these norms were for older graduates and commercial trainees.

(5) In their third year, a self-selecting sample of 59% of this year group took a trial test of academic aptitude** designed for 18 year old university applicants. They compared favourably with the national sample on the verbal part, scoring a mean of 35.1 compared with the sample mean of 30.7, but were much lower on the mathematical side, scoring 8.8 compared with 21.6. The final report (30) notes, however, (pp. 32-41) that there was evidence of improvement with age, and this probably accounts for the good verbal score, while the mathematical score reflects the national problem of numeracy.

(6) To sum up, there was limited evidence, based on one year group only, that the College students performed slightly below the national norms on tests designed to measure intelligence and high level thought; but this difference in verbal reasoning powers was not obvious on a broader based test of verbal attainment. The evidence is not strong enough to attempt any firm judgments, but the analysis did have implications for the resource based course, in terms of the lack of critical attack of many students (6.7.1(2)) and in the response to the far from satisfactory objective test (6.8.2.1), given at the end of the course.

* The Bishop Otter data was, in fact, used to provide the college of education norms for this British supplement to the manual.

** This was made available to the College by courtesy of the Committee of Vice-Chancellors.
"... this reflected a similar five day working week to that identified in the library analysis".

(3.12.2(1))
3.12 STUDENT STUDY HABITS (See Appendices G, questions 7-9; M, questions 2-4)

(1) An interest in study habits can be traced back in the literature as far as the 1930s and an outline of some of it will be found in Appendix (AA) focusing on: factual studies, attitudinal and predictive studies, factor analytic studies and finally, investigations concerned with the mechanics of study.

(2) This present analysis will focus on three facets of student study habits, their use of the long vacation, their daily study pattern and finally, their attitudes to study.

3.12.1 THE USE OF THE LONG VACATION

(1) Although not directly relevant to the innovatory courses, this analysis is necessary in order to obtain some idea of the breadth of reading pursued outside of the formal course structure.

Diagram 3.17

(2) The 1971-74 and 1972-75 year groups were both asked how they had used the long vacation at the end of their second year. The pattern was very similar for both years and so the data was combined (Diagram 3.17). Clearly, although the actual pattern was rarely as linear as this, the majority of the students spent about half of the vacation working, with less than 20% of them having more than four weeks of pure holiday. In addition, they spent just 2.5 weeks studying with only 20% of them spending more time than this.
(3) Setting this in a broader context, whereas Thoday (61), in 1951, found that a sample of 177 Birmingham students averaged 3.2 weeks paid employment, the Hale Committee (62), in 1963, found that a sample of 1,861 students averaged 6.3 weeks, making it identical with the Bishop Otter total. It is worth noting that both this Committee and Newfield (63), in his very large scale study, found that paid employment had little effect on the amount of study done, except where it was excessive.

(4) This analysis reinforces the somewhat pessimistic analysis of library usage discussed in the previous chapter (see 2.7.2) with its implications for the innovatory course.

3.12.2 DAILY STUDY PATTERN

Diagram 3.18

The 1971-74 and 1972-75 year groups were asked, following identical work done by Entwistle (64) to fill in a diary giving details of hours of independent study. It can be seen (Diagram 3.18) that this reflected a similar five day working week to that identified in the library analysis (see Diagram 2.21). This five day week was to prove a significant factor in both of the innovatory courses (see 5.7(9) and 6.5.2.1(3)).
In order to set this in the broader context of the literature (Table 3.3), it was necessary to alter some data in the literature from weekly totals to daily totals (see footnote to table). The College daily average of 4.3 hours, based on a six day working week, shows it to compare favourably with other institutions of higher education.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>AUTHOR(S)</th>
<th>REF.</th>
<th>UNIVERSITY OR COLLEGE</th>
<th>N</th>
<th>STUDENT SAMPLE</th>
<th>DAILY INDEPENDENT STUDY*</th>
<th>DAILY TIMETABLE STUDY**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>D. Thoday</td>
<td>35</td>
<td>Birmingham</td>
<td>503</td>
<td>All</td>
<td>2.75</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>D. Rich</td>
<td>36</td>
<td>Birmingham</td>
<td></td>
<td>English &amp; History</td>
<td>4.95</td>
<td>1.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>General Arts</td>
<td>4.15</td>
<td>2.52</td>
</tr>
<tr>
<td>1962</td>
<td>Robbins</td>
<td>40</td>
<td>University Sample</td>
<td>1244</td>
<td>Humanities</td>
<td>4.4</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Social Studies</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3691</td>
<td>All</td>
<td>3.8</td>
<td>2.96</td>
</tr>
<tr>
<td>1963</td>
<td>P. Marris</td>
<td>41</td>
<td>Cambridge</td>
<td>63</td>
<td>Non-Scientist</td>
<td>2.9</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
<td></td>
<td>4.3</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>39</td>
<td></td>
<td>4.7</td>
<td>-</td>
</tr>
<tr>
<td>1966</td>
<td>M. Oxtoby</td>
<td>42</td>
<td>Southampton</td>
<td>119</td>
<td>Year One</td>
<td>4.3</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>Year Two</td>
<td>3.2</td>
<td>-</td>
</tr>
<tr>
<td>1970</td>
<td>N.J. Entwistle</td>
<td>43</td>
<td>University</td>
<td>139</td>
<td></td>
<td>4.75</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>118</td>
<td></td>
<td>3.2</td>
<td>-</td>
</tr>
<tr>
<td>1971</td>
<td></td>
<td>44</td>
<td>University</td>
<td>898</td>
<td></td>
<td>3.8</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>562</td>
<td></td>
<td>2.8</td>
<td>-</td>
</tr>
</tbody>
</table>

*Where a weekly total was quoted, this was divided by SIX to arrive at a daily average figure.

**Where a weekly total was quoted, this was divided by FIVE to arrive at a daily average figure.
Diagram 3.19

(3) Diagram (3.19) is of interest because it shows in its centre two lines, the gradual build-up, from day to day, of the average amount of independent study of the year groups as a whole and the way different sub-groups diverged from this average. Whereas the year group as a whole averaged a cumulative total of 11.4 hours of independent study by the end of Tuesday, Art students averaged 14.4 hours and P.E. students only 9.4
hours. Although other groups of students clearly diverged from the average, these departmental differences were particularly significant, reinforcing the analysis of main subject departments (2.5) and influencing the simulation exercise in particular (5.7(6)).

3.12.3 STUDY HABITS

(1) Parallel with looking at their daily study routine, these same two year groups were given an adapted version of Cooper and Foy's study habits questionnaire (see Appendix AA(ii), Ref.(38)). A factor analysis of the replies of one year group to this questionnaire (see Appendix BB), found that three of the six factors extracted explained 77% of the total variance and appeared to be essentially concerned with three types of confidence and/or competence, namely, academic, personal and examination, respectively. The questionnaire, therefore, appeared to be exploring three relatively discrete aspects of students' study habits.

(2) Turning now to the results* of this questionnaire, one or two well-defined characteristics emerged. On average (Diagram 3.20) students appeared to be conscientious note-takers (15, 34) who felt they kept their notes in a well-ordered manner (33, 37) and almost always handed set work in on time (2). They had great difficulty with exams, however, seldom feeling confident (20), frequently having difficulty getting ideas down on the paper in the time limits of the examination (19, 21, 22), possibly through lack of preparation (18). We should note, however, that 73% of the questions failed to produce significant replies.

(3) It was the concern with exams which probably influenced the development of the innovatory courses the most, only affecting the second year simulation exercise slightly (see 5.7(6)), but having a more marked effect on the resource-based course (see 6.2.1.2(1); Diagram 6.29(6); Table 6.2(4)).

(4) Summing up this analysis of study habits, although I felt that the poor study habits of many students probably influenced response to this resource-based course, I was not convinced that this study habits questionnaire explored it to any length.

* Although there were some differences between the two year groups, they were relatively slight and so the data was combined for this analysis.
Diagram 3.20

Study Habits and Attitudes
1974 - 1975

1. Reading Meaningless
2. Work Punctually in Visitors
3. Prevent Study
4. Can Study Undisturbed
5. Read Widely on Course
6. Concentration Difficult
7. Personal Prevent
8. Problems Study
9. Tiredness Prevents Study
10. Daydream While Studying
11. A questioner in Lectures
12. Weak Orally
13. Weak Written Work
14. Follow up References
15. Amplify Lecture Notes
16. Weak Lecture Concentrate
17. Weak Seminar Concentrate
18. Revise all the Year
19. Slow in Exams
20. Confident in Exams
21. Exam Writing Difficult
22. Exam Timing Difficult
23. Spot Exam Questions
24. Prefer Directed Study
25. Aim to understand rather thanrote learn
26. Education Study Boring
27. Prefer Study Routine
28. Study priority over Social
29. Education Lectures Stimulate Study Priority
30. Personal Achievement
31. Professional Relevance
32. Favourite Subject
33. Systematic Note Taker
34. Note Taking Successful
35. Have Study Routine
36. Exam Review at Last
37. File Notes Systematically

Always
Sometimes
Seldom
Never
3.13 GENERAL CONCLUSIONS

(1) This chapter has shown that the students were recruited mainly from the south of England with 45% coming from Sussex and its two neighbouring counties, Surrey and Hampshire. The sex balance was increasingly heavily weighted in favour of women, and over 80% of the students came to the College straight from school. Over 60% of the students had attended either a grammar school or an independent school, and there was some indication that the College recruited more students from the independent sector than most colleges of education.

(2) At least 60% of the students were first generation higher education, but two-thirds of them would be called middle class. There was, however, some indication that the College did not recruit quite the same proportion of students from professional homes as it did in its early years. Students were slightly better qualified in terms of 'A' levels, than the students from many other colleges of education but, although some held good grades at 'A' level, the average grade was low compared with university students and many had no 'A' levels at all.

(3) The students appeared to perform slightly below the test norms on an intelligence test and on a test of critical thinking, while on a test of personality they appeared more stable than higher education students generally and more extroverted than students in other colleges of education. The norms, however, for all of these tests were felt to be unsatisfactory due to the small numbers used to establish them.

(4) An analysis of study habits showed the students to be broadly in line with university students in terms of their use of vacations and independent study time, and to differ significantly, in terms of the latter, from their more heavily time-tabled contemporaries in other colleges of education.

(5) A pen portrait of a typical student might show that she came from a lower middle class home in the south of England and was possibly the first member of her family to attempt higher education. Basically stable and possibly slightly extroverted, she had probably experienced only moderate success at her grammar school, seeing many of her contemporaries go on to university. She probably had at least one 'A' level but had experienced some difficulty obtaining it, resulting in a lack of confidence in the exam room.

(6) It is possible to draw some tentative conclusions from the above analysis in terms of implications for any designer of innovatory courses and detailed cross references in the earlier sections of this chapter explored this further.
(7) Probably the most significant factor is the relative lack of academic success, as measured by 'A' levels of so many students. Behind this known fact, it may be possible to deduce a chequered academic career at school, feelings of academic weakness and a lack of personal self-confidence. Many saw in the College a second chance, and one of the College's strengths was that it gave back to such students their self-respect. Despite this, many of these same students remained academically insecure, sometimes intellectually and culturally inadequate. Although it is difficult to quantify, it was always possible to identify significant groups of students, who compensated for previous academic weakness by either attaching over-importance to 'things intellectual' or by rejecting such things totally, attaching undue importance to 'things professional'. These very generalised attitudes undoubtedly needed to be borne in mind in developing any new course.

(8) A second important factor was the high proportion of first generation higher education students. Many of these students had poor study habits and were ill-prepared for the mature patterns of study they were asked to follow, and the library analysis in the previous chapter helped focus on some of their problems, emphasising, as it did, limited reading, lacking in breadth.

(9) Again, it is only possible to surmise on the response of such students to innovatory teaching methods. Would such students attach undue importance to the traditional pattern of lecturing or would they be attracted to alternative teaching approaches? Of more importance, if initially attracted, would such students have the necessary confidence and maturity to exploit to the full such innovatory approaches?

(10) The uneven sex balance, with its preponderance of women, together with the youthfulness of the students, might well be seen to be of importance to the course designer. Such factors might well produce differing responses to any teaching innovations, in terms of motivation, maturity of response and attitudes to the methods used, depending on sex or age.

(11) The general balance of stability and extroversion in the students again might produce a distinctive response to the innovatory courses. The more stable students might be expected to take the innovatory teaching approaches in their stride, while the extroversion factor might lead to a lack of academic penetration in the response to courses.

(12) Finally, the relative closeness to home, possibly reflected in the tendency for independent study not to take place at weekends, may have influenced both of the innovatory courses, because they demanded individual and small group work outside of lecture hours.
REFERENCES TO CHAPTER THREE

* = Reference to Appendix (Y)
** = Reference to Appendix (AA)
*** = Reference to Main Text and Appendix (AA).


(6)* K.D. Klingender, "Students in a Changing World", Parts 1 & 2, Yorkshire Bulletin of Economic and Social Research, (a) 1954, vol. 6-1, pp. 3-33, (b) 1954, vol. 6-2, pp. 91-127.


(8)* N.E. McIntosh, Students of the Open University - Their Background and Progress, Paper prepared for the Open University's Advisory Committee on Adult and Higher Education, May 1972.


(20) D. Child (1969), op. cit. Ref. 10.


(22) N.J. Entwistle (circa 1970-71), op. cit. Ref. 11, Table 7.9.


(28) Committee of Vice Chancellors, Experimental Test of Academic Antitude. (Investigation into Supplementary Predictive Information for University Admission) 1970, version F.


(34) F.D. Klingender (1954), op. cit. Ref. 6(a).


(40) Committee on Higher Education (1963), op. cit. Ref. 13, Appendix Two (B), Annex Tables S.7 and S.8.

(41) P. Harris (1964), op. cit. Ref. 5, p. 67.


(64) N. J. and D. Entwistle (1970) op. cit. Ref. 43, p. 135.
PART TWO

REVIEW OF THE LITERATURE
INTRODUCTION TO PART TWO

(1) The introduction to this study (1.3) noted two key factors which influenced the development of the innovatory courses, which are being studied, namely, the growth of interest in curriculum development during the 1960s, sometimes linked with a closer matching of psychological principles to teaching and learning methods.

(2) In this country, these developments particularly influenced primary schools and, to a lesser extent, secondary schools. Working in a college of education, I was particularly interested in examining the implications for higher education, and this chapter summarises my search through the literature. Its significance will be discussed in the final section (4.5).
CHAPTER FOUR

REVIEW OF THE LITERATURE
CHAPTER 4: REVIEW OF THE LITERATURE

4.1 INTRODUCTION

(1) The introduction to this study indicated the rapid growth of interest in curriculum development in the 1960s and this review will be concerned with identifying some of the factors which have influenced this growth.

(2) Key factors were undoubtedly a growing recognition in academic circles of the work of psychologists and social psychologists in the field of individual difference; a recognition, in particular, of the work in behavioural psychology and its application in programmed learning; a broadening of society's expectations of higher education, associated with the enormous expansion in student numbers in higher education internationally; and finally, rapid innovations in the hardware of education, associated with the development of a technology of education.

(3) Three main themes will run through the chapter, the first being the nature of learning in higher education; the second, the developments which have taken place in teaching methods, and the third, a critical appraisal of educational technology. First, an introduction to each of these themes:

4.1.1 LEARNING IN HIGHER EDUCATION

(1) It is significant that although one main area of interest in psychology has always been the nature of learning, the direct relevance of much of this work to teachers has often been tenuous, except in one or two fields. Ausubel (1) in 1968, attributed this to the history of educational psychology over the preceding fifty years. Early studies, often carried out by amateur researchers, contained 'glaring deficiencies' in conceptualisation and design and resulted in studies of school learning falling into disrepute. He concluded that it was understandable that professional psychologists should retreat from the classroom into the laboratory to study simpler learning tasks under 'rigorously controlled conditions'.

(2) This has meant that there is no commonly accepted psychological foundation to teaching at any age level. Of two recent books, under the title 'Teaching and Learning in Higher Education', by Beard (2) and Heim (3), it is noteworthy that the latter pays no attention to the psychological foundations, and the former, although indicating a range of relevant psychological work, understandably fails to produce a relevant synthesis. Equally, Curzon (4), in a book on 'Teaching in Further Education' with a strong behavioural emphasis, again fails to synthesise the reported findings. Two other books are, however, worthy of note. The first a set of conference proceedings, edited by Frey and Lang (5), which focused on cognitive processes and science instruction and the second, edited by Entwistle and Hounsell (6), which
assembled a number of key extracts from a wide range of psychological and pedagogical sources. This latter is by far the most significant work in this area to date and provides thought provoking new material. It still, however, leaves a gap between theory and practice and this has yet to be filled.

(3) Finally, the proceedings of the 1972 conference of the Society for Research into Higher Education (7) need to be noted because of its theme 'Motivation'. A useful set of papers was presented at this Conference revealing the breadth of the problem, rather than depth of analysis.

(4) Looking in more general terms at this section, it will examine in some detail what philosophers and psychologists have had to say about the nature of the learning process. It will be noted that, despite the vast amount of writing, relatively little is really known about the learning process and certainly not enough is known to have practical implications for the practising teacher. Skinner's work remains very much the exception, and a much criticised exception at that.

4.1.2 TEACHING METHODS

(1) The 1960s saw, internationally, an extremely rapid growth in all types of higher education, caused partly by a demand for highly qualified manpower and partly by the post-war 'bulge' of children born in the period 1946 to 1948, who were then reaching higher education. It was not unnatural that this expansion should bring about a growth of interest in teaching methods.

(2) In this country, the University Grants Committee set up a committee under the Chairmanship of Sir Edmund Hale to look at University teaching methods and this group reported (8) in 1964. In Australia a similar committee reported a year earlier (9) which, while recognising the need to 'teach for independence', also recognised the realistic limitations of time and money.

(3) The titles of the annual conferences of the University of London Teaching Methods Unit in 1967, 'Teaching for Efficient Learning' (10) and in 1968, 'Innovations and Experiments in University Teaching Methods' (11) reflected something of the growing interest, particularly in medicine, the biological sciences and in engineering, in developing alternative teaching strategies and also of encouraging good evaluation.

(4) The U N E S C O meeting of experts on teaching and learning held in Paris in 1968 (12) was briefly referred to in the introduction to the study. This group concluded that there was a need to develop more active ways of learning, with some emphasis on problem solving. They recognised this would involve the design of new types of learning spaces and the development of careful programmes of research.
(5) Again in 1968 U N E S C.O sponsored a meeting of experts (13) on
general education, in Moscow, which recognised the need to disseminate, as
widely as possible, the growing expertise in curriculum development, and this
led to an international seminar for advanced training, held in Sweden in 1971
(14), concentrating on the problems of developing, evaluating and
disseminating learning materials and instructional procedures.

(6) In 1968, the Research and Policy Committee of the Committee for
Economic Development published a national policy statement on curriculum
innovation in American schools, which (pp. 16 and 17) recognised the growing
interest in curriculum development and encouraged "... institutions, engaged
in the preparation of teachers, to design their curricula to include adequate
instruction in the values of research and the uses of advanced educational
media". (15).

(7) The 26th Annual Report of the Nuffield Foundation (16) indicated
(pp. 44-48) a shift in emphasis in the Foundation's work from the schools
to higher education, reflecting a growing interest in teaching and learning
in higher education, as did special issues of the Cambridge Journal (17) and
the Higher Education Bulletin (18).

(8) By 1971, this growing expertise in the theory and practice of curriculum
development was internationally recognised as a technology of education and
the Carnegie Commission on Higher Education (19) and the O E C D (20) had
both produced reports on its likely development. The Carnegie Commission
highlighted the gap (pp. 2 and 39) between the initial introduction of new
technologies and their general widespread use, seeing some of the newer
techniques not being in general use in higher education, until the turn of the
century.

(9) It is one thing to highlight the growth of interest in new approaches
to teaching in higher education, it is another thing to explain why it
happened. Undoubtedly one factor was a general societal one. H.S. Broudy,
in looking at historic exemplars of teaching method (21) such as those found
in Comenius, Froebel and Herbert, tried to illuminate the way distinctive
teaching styles developed in the context of differing social conditions. It
could be said that the Nuffield group for Research and Innovation caught this
same interaction in their preliminary report:

"The patterns of change cited here — towards student independence,
sharing of experiences in group interchange and a more complex overall
appraisal of achievement — each reflect broad-scale movements through­
out society. The loosening of established forms of practice, the over­
hauling of institutions, the increasing complexity of knowledge, the
elaboration of decision making criteria of various kinds, are all
phenomena not confined to institutions of higher education" (22).
Similarly Fragnière (23), in the 1976 final report of the European Cultural Foundation's project 'Plan Europe 2000' was able to say:

"The educational system cannot be isolated from the social system and it must evolve with the crises and transformations experienced by society as a whole ...." (p. 28)

Whatever the reasons for the change, and these will be explored further in a later section, it can be said of many of the new approaches, that they differ from conventional teaching in the relationship of the learner to the source of instruction. (24). Elton (25) amplified this as a concern with student activity and independence, linked with attitude change. Fragnière (26) takes this even further and says:

"For many people education is caught between two approaches, one out of date and the other still to be tested" (p.11).

and again:

".... it (education) will aim less at passing on knowledge than at extending existing knowledge rooted in experience - not at training in the strict sense but rather at developing individual responsibility in learning" (p.61).

and finally:

".... this one-way teaching relationship will give way to more spontaneous, above all, more autonomous behaviour on the part of the pupil ...." (p.66).

Summing up, the 1960s and early 1970s saw a build-up of interest in developing a range of teaching methods in higher education, epitomised at the college of education level by the work of the C E L P project (27), and at university and polytechnic level, by the three year progress of the Nuffield Group for Research and Innovation (28).

4.1.3 EDUCATIONAL TECHNOLOGY

It is not surprising that, as a result of the growth of interest in curriculum development in the 1960s and of the parallel growth of full-time workers in this activity, attempts should be made to professionalise the whole activity. This was exemplified initially by an emphasis on specifying objectives and testing if they had been achieved, but latterly by the growth of a technology of education, which applied 'systems' thinking to the curriculum development process.

There is some evidence, however, that this is beginning to be challenged and so Eraut et.al. (29) and Kallos and Lundgren (30), writing in 1975, challenged the traditional paradigms of educational technology and psychology. Eraut's challenge was based on a three year study of the growth of an economics course at the University of Sussex, and concluded by asking if, in preserving students from poor teaching, the paradigm institutionalised the
mediocre. Kallos's challenge was, however, more fundamental, because it discussed (p. 114) the relativity of any research methodology and its dynamic conservatism 'disregarding other aspects of the territory'. This, of course, is no new point and was discussed in great depth by Kuhn (31).

(3) Stemming from this professionalisation of curriculum development, there has been a growth of interest in the evaluation of teaching methods and I will argue that this has not been successful.

(4) There has been an understandable temptation for all of the social sciences to model themselves too closely on the scientific method and this is very apparent in the field of the evaluation literature. Careful attention to samples, the use of experimental and control groups, testing of hypotheses, talk of replication, reviews of the literature, are all marks of research in the established sciences.

(5) The problem is that these approaches are only really appropriate to a mature field of study, where all the initial ground-clearing has taken place. If the study of the human body is taken as an example, the first steps were to dissect the body and examine and classify all of its separate parts. This was followed by the identification of sub-systems within the body, such as the circulation, and these sub-systems were then studied in turn. The mechanics of each part of the sub-systems were examined; the inter-relationships between the parts were studied, and finally doctors tried to find out what made the system tick. It was at this stage in the growth of the understanding of the human body that the detailed research method, described above, came fully into its own: namely, the formulation of hypotheses and of alternative hypotheses; the setting up of carefully controlled experiments; the replication of experiments in the literature.

(6) The social sciences, and evaluation studies of teaching methods in particular, have tended to plunge in at this final stage, without going through the earlier descriptive and classification stages. Too little attention has been given to describing the institutional context within which the teaching process takes place; to describing sub-systems within that institutional context, such as course patterns, student sub-cultures and norms. Too much attention has been given to describing individual courses often totally divorced from any social context at all.

(7) I would argue, therefore, that there is a need for some retrenchment; of a going back to the earlier stages of description and classification.
The above paragraphs should not be taken as arguing that this growth in any field of study should be strictly linear, and that no attempt should be made to formulate and test hypotheses, before the total system is fully understood. Naturally there must always be some pushing forward of the frontiers but paralleled by a filling-in of the main body of knowledge. What is argued here is that the main emphasis of research in the evaluation literature has been misplaced, with too little emphasis on the initial ground-clearing.

These, then are the main themes of this review, the foundation of learning and teaching, current developments in teaching, and educational technology. These themes will be developed partly by means of an extended argument supported from the literature, and partly by the more normal review of findings in the field, while their implications will be discussed later.

4.2 LEARNING IN HIGHER EDUCATION

4.2.1 INTRODUCTION

The argument to be advanced here cannot claim to be a comprehensive distillation of all the literature in the field, rather it represents a personal synthesis of reading in the fields of philosophy and the social sciences, related to the nature of learning and individual difference.

First of all, the relativity of all the explanations will be considered, with some discussion of methodology. The argument will then consider the growth of intellectual development, from initial concept formation to high order thought and problem solving, followed by a brief examination of the psychology of individual difference and will conclude by examining the teaching implications of the analysis.

4.2.2 THE RELATIVITY OF THE EXPLANATION

Given that we are all involved in the whole gamut of the learning process from birth through to adulthood, we know remarkably little about how it works and even less about effectively marrying pedagogy with the learning process. The basic facts are clear and need neither a psychological nor a philosophical explanation. Initially, simple ideas are formed in young children, which gradually build up into the complex framework of ideas of the adult. At first, the ideas are concrete and very dependent on sense data, but gradually abstract ideas are formed and abstract ways of thinking emerge, which are not closely linked with the
world of immediate experience.

(2) It would be tempting to conclude from the long history and large volume of writings, that a clear explanation of the process of human learning now existed, but this is far from being the case. The problem is, as Gagné stated (32):

"Since (the psychologist) is unable to make direct observation on the process of learning, he must make inferences about this process. These inferences are abstractions from the raw observations .... and are often called learning principles" (pp 8-9)

(3) The resulting explanation, therefore, can only be a relative one and this has important implications for their credence.

(4) It is significant that one of the earliest philosophers, Plato, resorted to an allegory (33) to explain something of this process. He described human beings as prisoners in a cave, with their backs turned to the highest knowledge, the 'forms' and only able to observe shadows:

"For in the first place do you think that such men would have seen anything of themselves or of each other except the shadows thrown by the fire on the wall of the cave opposite to them?" (515).

and again in the previous chapter when talking of geometry:

"The actual things which they model and draw, which again have their shadows and images in the water, these they now use as images in their turn, seeking to see these very realities which cannot be seen except by the understanding". (510-511)

(5) This type of explanation was not limited to Greece in 400 B.C. but can also be found after the 16th century in Europe. Ryle (34), in commenting on epistemological studies from Descartes onwards, says that philosophers have resorted to the use of a partial metaphor, in attempting to identify a mental life, as distinct from actual life.

(6) Coming closer to the present day, this metaphorical type of explanation has continued but under the heading of models. A model can be defined as:

"A simplified or idealised description or conception of a particular system, situation or process". (Oxford English Dictionary, 1976 Supplement).

Gagné (35), for example, makes use of something approaching a computer analogy to describe the learning process. Lindsay and Norman (36), in developing their information processing model of the human memory, again make some analogy to the computer, seeing it as having two parts,
a data base and an interpretive process. Their requirements of the model are that it should:

".... use a conceptual structure to interpret the information it receives that can compare the incoming messages with what it knows, and that can evaluate the plausibility of something in terms of its past experience". (p. 385)

Behavioural psychology, clearly outlined by Rachlin (37) at a technical level and by Skinner (38) at a more descriptive level, again uses a model but this time a model which has strong physical affinities, stressing causal connections and processes of reinforcement and extinction.

(7) All of the above explanations are relative to a greater or lesser extent and certainly none meet all of the rigorous criteria outlined by Spada (39), in enabling predictions to be made about learning; in being generalisable; in enabling curricula to be developed and evaluated. The analysis which follows must therefore be seen as tentative.

4.2.3 METHODOLOGY

(1) The nature of learning has been looked at in a number of ways. Plato's speculative approach has already been noted. The seventeenth century rationalist philosophers, for example, used an a priori deductive approach (40); the eighteenth century empiricists (41) used an embryonic scientific method; twentieth century British philosophers have used conceptual analysis (42).

(2) Bartlett (43) describes how the associationist psychologists tackled it by an 'analytical description of completed (mental) structure', but went on to show that later psychologists adopted a scientific approach, attempting explanation rather than description, and Gagne (44) described this use of the scientific method by psychologists in even greater detail.

(3) Pask's method is particularly interesting, because he attempts to develop a fresh theory of cognition (45), using computer terminology (46), in reacting against earlier work on concept formation and memory (pp 24-25). Having elaborated the theory (47), he developed the computer based Course Assembly System and Tutorial Environment, in order to observe and control human learning. This may prove to be a significant breakthrough in methodology, although it runs the danger of any closed system of not being generalisable.
This range of methods, used to look at human learning, possibly reflects the complexity of the task. It is certainly not possible to see any one as being more effective than another. In overall terms, we still have a very long way to go before we can claim any certainty in our understanding of the mechanisms of human learning.

4.2.4 CONCEPT FORMATION

This table by Gagné (48) enables us to see concept formation in perspective.

Table (4.1)

<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>Rules</th>
<th>Concepts</th>
<th>Discriminations</th>
<th>Either</th>
</tr>
</thead>
<tbody>
<tr>
<td>requires as prerequisite</td>
<td>require as prerequisite</td>
<td>require as prerequisite</td>
<td>require as prerequisite</td>
<td>or</td>
</tr>
<tr>
<td>or other Chains</td>
<td>Verbal Associations</td>
<td>Stimulus - response connections</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Gagné's classification concentrates on the development of intellectual skills, but it provides a useful way in to the psychological and philosophical explanation of the nature of learning, showing the origin of learning in simple stimuli and the gradual build up to the sophisticated intellectual strategies of problem solving.

The simplest knowledge we have is, to use Locke's terminology, the idea of single pieces of sense data. These are put together to give us knowledge of particular and individual objects, such as that bird in the garden, or this chair on which I am sitting. In this case, it is a limited form of knowledge, linked to one particular object in time or space (49).

From very early on in life, however, we learn to collate and classify these simple ideas to produce slightly more complex ideas of collections of objects. We realise that one particular chair has similar properties to the other chairs around the table, and similar, if not identical properties, to the arm chair by the fire and the rocking chair in the hall.
(4) It is only a relatively short move from this to even more comprehensive classifications, in establishing the more complex idea of 'furniture', which includes, as well as the various kinds of chairs, the table by the window, the book case by the telephone and the welsh dresser in the dining room.

(5) Locke clearly describes the two main elements of this process of concept formation, 'sensation' and 'reflection' (50), with the former definition anticipating the behavioural psychologist's use of the term 'stimulus'. Locke defines 'reflection' as the mind 'reflecting on its own operations'.

(6) In short, the broad outline of human learning was defined fairly well by the seventeenth century, and twentieth century psychologists and philosophers have begun to fill in a certain amount of the detail.

(7) Bruner (51) describes how the mind categorises sensory inputs, using a number of either open or closed processing strategies. He discusses, in some detail (52), how each sensory input or 'contingency' requires an 'act of decision on the part of the problem solver', as to whether the given contingency supports the classification hypothesis or not and applies this in some detail to the concept of 'redness'.

(8) It is worth noting that in 1929, the philosopher C.D. Broad (53), looking at the growth of an empirical concept such as 'redness', said that a true concept of redness can only be developed after experience of particular red objects. Equally, Saussure (54) parallels Bruner's discussion of the negative instance (55), by showing that a true understanding of any colour involves seeing it in relation to other colours.

(9) It is one thing to identify a range of concepts as above from the simple and very concrete to the complex and highly abstract, but this does not answer the question as to how such concepts were formed. A concrete concept is said to have been mastered (56), when a learner is able to identify a whole class of things, by naming one or two examples of the class.

(10) It is tempting to adopt a linear approach to this process, seeing the more abstract concepts gradually emerging from the simple ones, but logically this does not necessarily follow. Undoubtedly there is a gradual build up of cognitive structure, as Ausubel somewhat ponderously indicates (57):
The means to this organised end, however, is rarely linear. Ausubel distinguishes between knowing the meaning of a concept word, Saussure's arbitrary and culture-bound sign, and understanding the underlying state which the concept word symbolises. He sees that it is possible to know either the word (symbol) or the state or both. Again Lindsay and Norman point to the evolutionary nature of concept learning, with some concepts only being 'partially defined' and 'not ... well integrated'. The teaching implications of this unevenness in concept formation will be discussed later (see 4.2.7).

Drawing together the argument so far, the origin of concepts in raw sense data was discussed, as was the process of organising these original stimuli into a meaningful cognitive structure. A distinction was made between the original sensations and the mind's own reflections. Finally, the unevenness of the build up in concept formation was briefly discussed.

4.2.4.1 Abstract Ideas

It is necessary to spend some time looking at the question of abstract ideas, in order to see how they fit into what has just been outlined above.

Going back to Plato's allegory, these abstract ideas were called 'forms'. For Plato, knowledge was only an approximation of the ultimate 'forms', whereas for Locke, the process of abstraction was one:

"... whereby ideas taken from particular beings become general representatives of all the same kind."

It is relatively easy to follow Locke in agreeing that abstract concepts such as 'red', 'large', 'soluble', 'heavy', 'old', have their abstraction firmly rooted in the concrete and are formed after experience of a series of particular experience-based examples of the concept.

It is not so easy, however, to fit even more abstract concepts such as 'natural selection' or 'relativity' into this pattern of argument. It can be argued, though, that even these concepts have their origins in the concrete. They are attempts to explain natural phenomena; they depend for verification on these same phenomena, and they can only be explained meaningfully by reference to actual examples taken from the
sane phenomena. The thing that needs to be remembered is that, as a result of our sophisticated ability to use language, we are able to generalise away from the specific to the point when the original empirical origins of the concepts are all but lost.

(5) Although he may be overstating, this quotation from R. Gagne (63) may be relevant:

"The great value of concepts as a means of thinking and communicating is the fact that they have a concrete reference. The importance of this characteristic cannot be over-emphasised. But since concepts are learned by the human being via language, there is often a danger of losing sight of this very concreteness. Learning can become over-verbalised, which means that the concepts learned are highly inadequate in their reference to actual situations." (p.138)

(6) So far, then, we have discussed various levels of abstraction, but always abstraction based ultimately on empirical data. If we consider the case of mathematics however, it becomes more difficult to justify the underlying argument, which has been that all ideas, even abstract ones, have their origins in basic sense data.

(7) It must be noted that, although the language is 'closed', most people, certainly in the early stages of working mathematically, need to have reference to the world of actual concrete reality. It is significant that much of the so-called modern mathematics in primary schools recognises this (64), and gives children a first introduction to the essentially abstract number concepts, by means of concrete experience, a point to be developed later in this chapter (see 4.2.7).

(8) Phenix (65) argues that mathematics is a complete abstraction and not linked to actuality. Like Saussure, he reasons that the symbolic systems of ordinary language evolve and are often ambiguous, whereas the symbolic systems of mathematics are precise and deliberately created.

(9) The line joining two points has, theoretically, no thickness and therefore cannot be visualised; the point has only a theoretical three-dimensional location; the basic unit of the enumeration scale is essentially meaningful within the language of mathematics, without any reference to actual reality. They are all members of a closed language, which has meaning within itself without reference beyond, and can only be verified by reference to the rules of the closed language.

(10) How then, do we fit this type of abstract thought into what has been said earlier about concept formation? It takes a philosopher to provide a useful clue.
(11) A.J. Ayer (66), in 'Language and Truth and Logic' looked at the end result of this inductive process more closely. He said that, as a result of organising the basic sense data, the mind formed different levels of 'logical constructions' in mental life:

"So that when we distinguish a mental object from a given physical object, or a mental object from another mental object, or a physical object from another physical object, we are in every case distinguishing between different logical constructions, whose elements cannot themselves be said to be either mental or physical". (p. 123).

4.2.5 HIGH ORDER THOUGHT

(1) Thus far, we have considered the way the concepts are formed, but we now need to consider the thought processes themselves.

(2) The work of Jean Piaget, working in Switzerland, is relevant here, for in his investigations he suggests a sequential development in concept formation, from pre-conceptual thinking in the first years of life, to formal operational thinking only attained in early adolescence (67).

(3) On his analysis, children appear to be mentally unable to grasp certain concepts, involving sophisticated mental operations or reasoning, before a certain point in their mental development has been reached (68), a point made incidentally, centuries earlier by Locke (69).

(4) Piaget's work is not limited to young children, but follows this developmental process into adolescence, to the development of what he terms the formal level of mental operations. Formal operational thinking appears to imply the ability to reason at an abstract level; to see implications; to form and to test hypotheses as a result of observations. These abilities appear to build up gradually in early adolescence (70).

(5) Piaget's work has generally been regarded as significant, but has been challenged on philosophical and psychological grounds. Lunzer (71), looking at the psychological problems (p. 242) shows that Piaget's analysis is not so watertight, when looked at in practice, because his developmental stages do not appear to be so clear-cut. He actually went on to suggest that Piaget may have been wrong in attributing formal level operations to chronological age and suggests that they may be more a mark of intelligence (p. 242). In overall terms he claimed (pp. 212-213) that Piaget's attempt to establish a psychology of cognition, by essentially logical as opposed to psychological analysis, was probably wrong.
(6) Again looked at psychologically, Piaget's work has been questioned by Seiler (72), working in Germany. He criticised Piaget because his theory of formal thinking contains no principle to anticipate a 'limitation of generality'. Again, as with Lunzer, he is saying that it is always possible to find exceptions to Piaget's generalisations about cognitive development.

(7) Despite these reservations, Piaget remains a significant figure in what we know about cognitive development. The significance of his work for teachers in higher education is his analysis of formal level operational thought and this will be returned to later.

(8) Philosophically, Piaget's work has been challenged by Gagné and Briggs (73) because of its determinism (p.48) in emphasising chronological age as the determinant of cognitive development. They argue that it is possible to develop cognitive strategies by suitable training and that, to a certain extent, the maturing process can be by-passed. These cognitive strategies are "internally organised skills ... by means of which the learner manages his own behaviour" (p.48). They determine the qualities of creativity, fluency and critical appraisal achieved by students. Bartlett (74) called this process of high order thought 'constructive thinking' and saw it as involving synthesis and original speculation. Bruner was, years later, to call this same process, "going beyond the information given" (75), while Ausubel called them 'pedagogic techniques' (76).

(9) In passing, it can be argued that work in the field of Information Processing has also contributed to our understanding of high order thought. Lindsay and Norman (77) described memory as a 'looping, questioning activity' and tried to provide a model of the way the mind processes information, retrieves it and defines new problems. Broadbent's thinking was influenced by studies in Information Processing and he argues (78) that we need to develop:

"... strategies of encoding the outside world, of organising memory and of proceeding from one step in an operation to the next ..." (p.175).

(10) The above analysis of high order thinking has implications for teaching at all age levels and these will be discussed later.

4.2.5.1 Quality of Understanding

(1) F. Nietzsche has said that:

"The whole apparatus of knowledge is an abstracting and simplifying apparatus ... The object is not 'to know' but to schematise - to impose as much regularity and form upon chaos, as our practical needs require" (79)."
I have already argued that this process was not achieved in one single linear way; sometimes it was achieved by the individual doing his own classifying, at other times it was by the individual taking over a ready-made set of classifications.

Whichever way the knowledge is achieved, the quality of the resulting knowledge has to be examined.

Although originally worked out as a way of classifying examination questions, Bloom's 'Taxonomy of Educational Objectives' provides a useful way into this problem.

The Taxonomy identified a hierarchy of levels of thinking, starting with knowledge of specific facts. Knowledge was clearly distinguished from comprehension or understanding, and the processes of application, analysis, synthesis and evaluation were equally separated out. To paraphrase this, the Taxonomy saw a clear difference between knowing something and understanding it. It also recognised that it required an even deeper understanding, if the knowledge understood was to be applied. Finally, it showed that deep understanding was only shown, when the knowledge was incorporated into a total framework of thought; when ideas were seen to be inter-related and interdependent.

The previous paragraph talked of a hierarchy of levels of thinking. In one sense this is true of the Taxonomy, in that synthesis is clearly a more advanced mode of thinking than comprehension, but it is not a simple hierarchy. The levels appear to be dependent on each other, and do not necessarily follow one another in simple sequence, although it should be noted that Ormell produced a stimulating philosophically oriented critique of the Taxonomy, noting the limitations of its behavioural base and preferring to see the Hierarchy broken down into six parallel categories.

The work of Kropp and Stoker in the Cooperative Research Project No. 2117 is pertinent here, because they worked with large groups of students in high schools, giving them a series of passages to read and then testing them by means of objective type questions designed to measure Bloom's categories of knowledge, comprehension, application, synthesis and evaluation.

They basically agreed with the hierarchy, although questioned the linear positioning of 'evaluation', finding that it often came between 'knowledge' and 'comprehension'. A more important overall finding was probably that process and content appeared to be closely
inter-related, and it was not possible to isolate the one from the other. In other words, the quality of understanding was often dependent on what was being understood, a finding closely paralleled by Marton (83), working with small numbers of students, examining in depth the way they processed the information in a substantial passage of prose.

(9) It is important to recognise that the consideration of the work of Bloom has introduced a new dimension into the argument. It is not just a question of identifying how ideas are formed, but also of examining the way in which they are absorbed and used.

(10) Ausubel (84) put it succinctly by distinguishing between meaningful learning and rote learning, seeing the former as involving assimilation of new ideas into an existing conceptual framework, and the latter as involving no assimilation. Marton (85) paralleled this by distinguishing between surface-level and deep-level processing of ideas.

(11) Ernst Mach (86), writing last century, said:

"If we keep well in mind the fact that conceptual thought is a reaction activity which must be thoroughly practised, we shall understand the well known fact that no one can familiarise himself with mathematics or physics or with any natural science by mere reading, without practical exercise. Understanding here depends entirely on action, in fact, it is impossible in any province to grasp the higher abstractions without a practical working knowledge of its details. Facts, then, are extended and enriched, and ultimately again simplified by conceptual handling."

(Chapter 14, Section 9)

(12) There is not an absolute parallel between Bloom's analysis and Mach's, but the general point is the same.

(13) Understanding depends on action and is clearly different from knowledge. G. Ryle (87) for example, in his book 'The Concept of Mind' says:

"It should be noted that the boy is not said to know how to play if all he can do is to recite the rules accurately. He must be able to make the required moves". (p.41)

(14) Although in one sense a trivial example, it parallels Piaget's work (88) on seriation, where he distinguishes between the child who is able to count from one to ten with no understanding, and the child who, in addition to being able to count, understands the sequence and the relationship between the numbers in the series.
We could, however, take a more serious example. It is one thing to know about Kant's Categorical Imperative (89), but entirely another thing to apply the 'Imperative' to actual moral problems in the real world.

Ryle and Mach are tackling the activity question from slightly differing standpoints, with Mach talking about the way real understanding is formed, while Ryle establishes a criterion for judging if real understanding has been formed. To link this back to Bloom, both Ryle and Mach are talking about Bloom's higher levels of analysis, application and synthesis. The important thing with all three, is that they recognise that knowledge is not a single concept, but made up of many.

4.2.6 INDIVIDUAL DIFFERENCE

So far the argument has concentrated on how learning takes place, and the depth achieved. It now moves on to a different area, the individual differences at work affecting the individual in the learning situation.

No attempt will be made to give too much detail, but rather to stand back and obtain an overview of the problem, with particular reference to the work of psychologists, sociologists and social psychologists, who have identified a number of factors affecting individual difference and it may be worth briefly indicating a few of them at this point.

4.2.6.1 Learning Styles

First of all, student learning styles differ, some learning better in an ordered sequential way, others preferring a less structured approach; some prefer to stick to the syllabus, whereas others prefer to be wide ranging in their study. Liam Hudson (90) was a key figure in identifying some of these differences, distinguishing 'syllabus bound' students from 'syllabus free' students and convergent students from divergent ones. It is worth noting, though, that Entwistle (91), working with university and college of education students, did not find the syllabus bound category nearly so well established as Hudson claimed and Coop and Brown (92), working in a rather artificially structured experiment with 170 students, found no significant interaction between cognitive style and teaching method. Hudson, of course, was developing on earlier work such as the seminal work of Guilford on the structure of the intellect (93). Hudson's importance is that he transferred the issue from the theoretical into the practical, exploring the reaction of students in school and university to convergent/divergent teaching approaches.
Ausubel (94) alludes to other facets of cognitive style, such as: intolerance of ambiguity or of 'unrealistic experience', constriction or flexibility in problem-solving; preference for cognitive complexity or simplicity, integration versus compartmentalisation and openness versus closure. Unfortunately he provides no detailed referencing to follow up these differences.

Bruner (95) distinguished between three modes of learning, the 'enactive' (including physical activities), the 'iconic', characterised by immediacy and the 'symbolic', which is mainly abstract, recognising that students may not be adept in all three.

Marton's distinction (96) between deep and surface level processors has already been referred to and this parallels Pask and Scott's distinction (97) between holist (global) and serialist (step by step) learners. Their work is interesting because, although carried out with a very small sample of 16 carefully selected students, it produces, using a very different methodology, a very similar dichotomy to Hudson's convergent/divergent one.

Pace of learning varies, with some students reading fast and others working much more slowly and painstakingly. A fact known to every teacher.

4.2.6.2. Motivation

Anxiety and motivation are also key factors in any learning situation and interact with each other to affect the student's perception of the relevance and difficulty of the work offered. Psychologists have commonly identified needs, drives, interests and incentives as being facets of motivation but as de Cecco says (98):

"Although educational psychologists recognise motivation as a key aspect of all learning situations, it has been difficult to translate the results of laboratory experiments into working hypotheses for classroom research." (p.83).

There is certainly a gap in the literature of evaluation, between the recognition of motivation as a significant theoretical factor and actual identification of motivation at work in the learning milieu. As Parlett (99) said at the 1972 conference of the Society for Research into Higher Education, which took motivation as its main theme:

"We really know so very little about how students respond to their instruction and to their working environment and how students set about learning and thinking in real life settings".
(2) In a second paper, at this same conference, Elton (100) talked very practically about the difference between intrinsic and extrinsic motivation, comparing motivation through real interest in a subject with motivation because of examination pressure. He felt that the former was difficult to achieve, because it demanded a high degree of initial motivation, while the latter was difficult because, although successful in short term objectives, it failed to achieve high level cognitive aims.

4.2.6.3 Attitudes

(1) Although there is some overlap with what has been said previously, attitudes can be another key factor. Attitudes to the content studied, to the teaching methods used and to the teacher. This is partly a question of personality and temperament, but also a question of personal values and cultural background. Elizabeth Richardson (101) opens this up in terms of the dynamic between teacher and pupil; Basil Bernstein (102), in terms of cultural background and linguistic code. It is, however, a large subject and cannot be further opened up here.

(2) Drawing together the strands of the argument about individual differences, Klausmeier (103), de Cecco (104) and Olson (105) have all written well about this complex area. The key point which emerges is that any learning situation is extremely complex and the implications are that no single teaching approach can possibly satisfy this complexity.

4.2.7 IMPLICATIONS FOR TEACHING

(1) This review of the literature of human learning and individual difference has been essentially a personal search to establish a philosophy for my own teaching in higher education. Looked at, as a whole, one cannot but be struck by the lack of real progress over the centuries in our understanding of how we learn. Most of the writing is speculative, although matching what we know of human learning as we experience it.

(2) Three main facets of learning were discussed: the build-up of simple concepts into complex cognitive structures; the evolution of abstract concepts from simple sense data and the developmental and pedagogic dimensions of cognitive strategies. Finally, the psychology of individual difference was explored.
It is only in recent years that higher education teachers have started to focus on the learner, which Nisbet (106) did in a short paper given at Liverpool as part of a course on university teaching methods. Undoubtedly this had not received enough attention in the past for, as the Grimond Report on Birmingham University said (107):

"An undue emphasis on the mastering of fact is undesirable".

or, as Gentile more extremely puts it (108):

"Instruction then, which is not education, is not even instruction. It is a denuded abstraction, violently thrust, like other abstractions, into the life of the spirit ..." (p.164).

Bloom probably put this in a more balanced way (109):

"If the sole object of education is the development of knowledge, the learning experience required is little more than a relatively passive listening or reading on the part of the student. As a greater variety of objectives become of importance, teachers need help in providing appropriate learning experiences". (p.12)

Bearing in mind the reservations about the relativity of any explanation of human learning, discussed earlier on, it is worth while attempting some assessment of the practical implications of much of this theory.

Undoubtedly Piaget's work has been a marked influence on some teachers, particularly in developing the distinction between concrete and formal mental operations. Although Piaget found that children have the potential to operate at a formal level by the time they are in early to mid-adolescence, we find many examples of children not operating at this level.

Significantly Lovell has said (110):

"If one teaches science to third year and older pupils in a British selective secondary school, one rarely meets pupils at the stage of concrete operational thought. On the other hand if one teaches science to average classes in a British Comprehensive School, then up to and including the fourth year, one is unlikely to meet pupils with thinking skills higher than that of concrete operations." (p.290)

Karplus and Peterson (111), working experimentally with a group of 727 nine to eighteen year olds, placed the onset of formal operations even later than this, while McKinnon and Renner, in a small scale study (112) with 131 college freshmen, found that 25% had not fully achieved the measures of formal thought.
The important thing to notice is that, although all adults are potentially able to operate at the formal level of mental operations, and indeed often do so, they do not necessarily operate at the formal level of operations all the time.

Piaget's work has been felt to be significant by some teachers and the Schools Council Curriculum Bulletin for primary school mathematics made use of it for its theoretical base. Equally, the American Association of Physics Teachers ran a workshop in 1975, which explored the relevance of Piaget's work for teachers of physics. Significantly, they used an experiential teaching mode to introduce students to the theoretical work of the workshop, thereby asserting their confidence in the Piagetian message.

It is of interest to note that Roueche arrived at similar conclusions to the previous two references, but from a non-Piagetian perspective. Referring to Bruner's symbolic mode, discussed earlier in this chapter, he recognised that many students failed to operate in this mode. He therefore advocated raising the students' level of abstraction in order to achieve this, and to do this, by using a variety of media to provide the concrete input.

Summing up the relevance of Piaget's work, it has undoubtedly been valuable in making us aware of the variability in levels of mental processing at work in any classroom, at all levels of education, and it points to a need to raise the level of abstraction in many students. It certainly influenced my own teaching.

Greater understanding of the nature of concept formation, with its grounding in sense data, undoubtedly influenced the 'modern mathematics' movement in primary schools and, to a lesser extent, the Nuffield Science Schemes. The unevenness of concept formation was of interest to primary school teachers and is exemplified in the idea of the 'Integrated Day'. It also influenced secondary school thinking, particularly with regard to the education of less able pupils. These developments implied some quite explicit rejection of traditional teaching methods.

Ausubel reacts strongly to some of the more extreme critics of traditional instruction, who have argued for discovery-based learning. He says they have based their case on 'its worst abuses'. His emphasis on instruction does not mean he totally excludes experiential learning. He recognises that mature students may tend to function at a concrete level, when faced with new subject matter, but:
"Since abstract cognitive functioning in this new area is rapidly achieved ... concrete-empirical props ... should be employed ... only during the early stages of instruction\".

(14) American curriculum development appears to have paid less attention to Piagetian findings and more to cognitive structure and strategies. Bruner's emphasis on structure has already been referred to, but equally Ausubel emphasised it (123), and stressed (p.101) the structure of disciplines and the need for teaching approaches to take note of this structure. He advocates the use of 'organisers' to provide 'ideational scaffolding' around which the students understanding of the discipline can be built.

(15) This obviously makes use of some of the theoretical work on concept formation described earlier in this chapter. Theoretically it makes sense and it is possible to see that it might work in the case of tightly organised scientific disciplines, but it is difficult to see it working successfully in the less structured disciplines.

(16) So far in this analysis of the teaching implications, we have concentrated on the uneven achievement of formal level mental operations, and the need to raise the abstraction level in students, by providing suitable concrete-empirical learning experiences. Secondly, we have looked at cognitive structure and the need to take much closer note of the underlying structure of disciplines, in order to help students to build up their own theoretical map.

(17) We need to note that a third line of attack has been to concentrate on developing cognitive strategies and intellectual skills, in order to enable students to assimilate fresh material into their existing framework of thought. Gagné (124) centres part of his thinking on this and describes (p.23) how an adult has a greater number of previously acquired intellectual skills which he can call on, compared with a child. Exploring the implications of this for the teacher he says:

"One therefore takes care to arrange the situation so that these intellectual skills are recalled and ... by ... spaced reviews, that the new ones he learns will be readily available in the future."

Broadbent (125) recognises that there is a danger in this approach of teaching becoming very mechanical, but feels that this can, with care, be avoided.

(18) Finally, although the work of behavioural psychology has not been discussed in detail, we need to note that its basic operations of conditioning and reinforcement have been directly applied to teaching in the form of programmed learning (see 4.3.4).
(19) The psychology of individual difference does not lend itself to direct application to the classroom, but a growing awareness among teachers of its broad findings have led to developments in teaching such as will be discussed in the next section.

(20) Summing up, I have argued philosophically and psychologically that learning is essentially an active process and that individuals differ from each other in the way they learn. The practical implications are summed up in this quotation from a recent World Health Report:

"An overall improvement in learning efficiency and effectiveness is achieved by the design of learning units that enable the individual student to work at his own pace, according to his educational background, interests and study habits." (126).

(21) I have not attempted to give a comprehensive coverage of all facets of psychology. Rather I have focussed on those facets which were felt to be significant to the innovatory courses under study, and these form the first major theme of this chapter, namely to establish a psychological/philosophical foundation to teaching and learning in higher education.

4.3 TEACHING METHODS

(1) The second major theme of this chapter is to examine the developments in teaching methods, which have taken place recently. This section will start by looking at the traditional methods of lecturing and small group work, followed by a consideration of the growth of interest in individualised learning, looking in some detail at programmed learning, Keller plan and P S I , individualised courses using a range of teaching media, and finally simulations and games. An attempt will then be made to draw out some general conclusions from the survey.

(2) This is a somewhat arbitrary grouping of the various teaching methods, and differs somewhat from Bligh's useful distinction between presentation methods, discussions, and practicals (127). Close examination of Bligh's grouping show it, however, to be equally arbitrary, and so, for example, he lists 'practicals' under one heading and the audio-tutorial laboratory under a different one.
4.3.1 THE LECTURE

4.3.1.1 Introduction

(1) "The reverse was true of my first year of college study. We were required to listen and accept ... The course seemed less concerned with thought and independent judgment than with amassing facts, receiving opinion and studying mechanically". (128)

"Large undergraduate lecture classes ... are now the rule ... As a result, many students are forced into a passive role in the classroom" (129) - CANADA

Hundreds of students in a lecture, 50 students in a tutorial! (130) - AUSTRALIA.

(2) The lecture has come in for a great deal of criticism across the world and often for good reason but this section will attempt to survey what has been written about the lecture, and then to consider some of the research evidence.

4.3.1.2 The Aim of the Lecture

(1) C.R. Moyer (131), in an excellent criticism of the over-simplified reaction against lectures in favour of discussions, argues that they both have strengths and weaknesses and that neither will be successful unless students develop autonomy. This point is made equally well by Milner (132):

"The lecture does ... make possible an extended and developed argument ... though there is always a danger ... of the uncritical acceptance and subsequent regurgitation of received doctrine". (p.71)

(2) It may well be helpful to clarify the term 'lecture', which has a range of meanings. The Oxford English Dictionary places the origin of the word in 'the action of reading'. Tracing the word back as far as 1536, the lecture is defined as 'a discourse given before an audience upon a given subject, usually for the purposes of instruction'. As far as the dictionary is concerned, the term lecture is very basic, with none of the subtle overtones which will now be discussed.

(3) Bligh (133), in a set of helpful definitions defines the lecture as a 'period of uninterrupted talk (not necessarily a complete lesson) and this may be a useful limitation to the concept. Bligh accepts that other activities can take place in a lecture, such as discussion or quizzing, but he limits the term lecture to the lecturer's set piece contribution.
The Hale Committee (134) saw the lecture as having six possible functions: inspirational, descriptive, surveys, informative, argumentative, philosophical. Sidgwick (135), writing last century, also added demonstrative (scientific), though this could be included in the Hale Committee's 'informative' classification.

Criticisms of the lecture appear to centre on whether some of these functions can be more successfully performed, using alternative teaching strategies. Certainly there are alternative strategies available for each of these functions, but each strategy will probably enable a different facet of the function to be achieved.

Table (4.2) below may help to indicate my thoughts about this:

<table>
<thead>
<tr>
<th>THE POTENTIAL OF ALTERNATIVE TEACHING STRATEGIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE HALE AND SIDGWICK CATEGORIES</td>
</tr>
<tr>
<td>Alternative Strategies</td>
</tr>
<tr>
<td>Inspirational</td>
</tr>
<tr>
<td>Descriptive</td>
</tr>
<tr>
<td>Survey</td>
</tr>
<tr>
<td>Informative</td>
</tr>
<tr>
<td>Argumentative</td>
</tr>
<tr>
<td>Philosophical</td>
</tr>
<tr>
<td>Demonstration</td>
</tr>
<tr>
<td>Lecture</td>
</tr>
<tr>
<td>Discussion</td>
</tr>
<tr>
<td>Prescribed reading</td>
</tr>
<tr>
<td>Practical work</td>
</tr>
<tr>
<td>Slide tape sequence</td>
</tr>
<tr>
<td>Tape recording</td>
</tr>
<tr>
<td>Television/Film</td>
</tr>
<tr>
<td>Programmed text</td>
</tr>
<tr>
<td>(1) When highly structured</td>
</tr>
</tbody>
</table>

(7) To take the philosophical function as an example, the table shows that this can be achieved by lecture, discussion, prescribed reading or tape recording. Reading would enable much more complex arguments to be introduced than could possibly be considered in a lecture, whereas discussion might ensure that the students themselves were philosophising but not, possibly, to the depth they might be in a lecture. The philosophising activity might, however, be more meaningful to them at a personal level in the discussion.
If the above is correct, this seriously questions the value of some of the research comparisons comparing the lecture with alternative teaching strategies, for they are comparing conceptually different things. Put another way, the lecture is able, in each of the functions identified by the Hale Committee, to achieve certain objectives. The objectives which can be achieved by alternative teaching strategies are likely to be related but different, and in comparing the strategies, all that can really be claimed is that students liked one strategy more than the other. Certainly it is not possible to make the stronger claim that one strategy was better than another, because they are conceptually different from each other.

In addition to these separate functions of the lecture, several authors have drawn attention to the more generalised value of the lecture in stimulating critical thought. The Hale Report itself discussed this, although Bligh (136) qualifies it by emphasising the limitations of the lecture as a stimulus. While it may 'awaken' critical skills, it is certainly not possible to see it developing them and, as will be seen in a later section (see 4.3.2.5(6), it can be argued that the discussion group may be the more effective strategy for this purpose. Collier (137) appears to believe that the lecture can achieve this training in critical skills, but Gotesky (138), in an article explicitly devoted to this topic, appears to accept that the lecture itself can only act as a stimulus and will have to be linked with more active teaching strategies if it is to achieve a real training in such critical skills.

Drawing together these various strands, one can say that the lecture certainly has a place as a teaching strategy alongside many others and is particularly well suited for the survey of the field. There would appear to be no strong reason why it should have greater predominance than any other strategy except for non-educational reasons, such as the fact that it is highly economical in staff demands; that it is the traditional strategy and that most universities have physical plant designed for lecturing, rather than for the alternative strategies.

Finally, a consideration of a criticism of too heavy an emphasis on the lecture, which is of a different order from the preceding ones, and which is basically a psychological one. Pototskii (139), writing on the pedagogy of the new teaching methods, highlights the problem that a student always has to assimilate presented knowledge into his
own framework of knowledge, and that there is not always a close fit between the lecturer's framework and that of the student, a point also made by Bligh (140). This, of course, reinforces the arguments presented in the first theme of this chapter (see 4.2.4).

(12) To sum up, the lecture on its own is a one way process and has limited but valid strengths, but although there is strong evidence (141) of student demand for alternatives to the lecture, there is no clear evidence for abandoning the method completely. Refinements on straight lecturing have been tried out, such as Elton's (142) use of duplicated lecture notes and self-tests; Webb's (143) students, who prepared tape-recorded lectures for other students, using lecturer-suggested readings as source material. Filmed lectures have been tried (144), which enabled students to listen to the lecture, at the point in time when they were ready for it, and Bligh (145) and Gregory (146) have many suggestions for varying the teaching strategy within the basic lecture format. Gregory's article can by no means be called a 'new look' because many of his 1975 points were made years earlier by Faraday and Bragg (147), as a result of lecturing at the Royal Institution and elsewhere. As Bligh says:

"The important point here is that the essence of learning to think involves practice, and that lectures do not normally provide opportunity for this, still less do they provide opportunity for the active expression of thoughts". (Page 16).

Bligh's psychological insights are crude but he is probably correct in identifying the need for activity.

4.3.1.3 Research Evidence about the Lecture

(1) Moving now to a consideration of the research evidence, the Robbins Committee (148) suggested that the average student's working week in the early 1960s, included 8.7 hours spent in lectures, compared with 1.9 hours in seminars. This balance has probably changed slightly in favour of discussion, but there is still a heavy emphasis on lecturing.

(2) An interesting investigation, reported by Miller and Dale (149), gave a semantic differential to university students fresh from school. In general, these students saw the university as more active than the classroom. This may be the idealistic starting point with most students, but the reality of the lecture theatre appears to produce some disillusionment.
(3) Lloyd (150) in 1967 and McLeish (151) in 1968 produced the following typical lecturer and student performance during a lecture (Diagram 4.1). Lecturer and student are only both at optimal performance for the second ten minutes of the lecture, after that there is a rapid fall-off in performance for both.

Diagram 4.1

(4) McLeish backed this up by presenting research evidence, illustrating fall-off in recall of a broadcast talk, a fall-off so severe that only 20% of the total content was recalled, and only 15% of the content of the last 15 minutes of the 45-minute talk. Considering the possible importance of these findings, there has been little evidence of replication, although Johnstone and Percival (152) found a similar patterning, when analysing attention breaks in Chemistry lectures, with attention starting to wander after 18 to 20 minutes. Certainly most lecturers would find something intuitively appealing in these findings.

(5) Bligh quotes an interesting little experiment, which again would repay greater development (153). The heart rates of 4 students were monitored during a lecture, which made use of a 'buzz' group for discussion at one point, and the pulse showed an increase at that point in time. The interest in this experiment is its general methodology, for it is unlikely that the heart beat would increase in the lecture and this was possibly the wrong mechanism to monitor. It may be, however, that investigations into brain activity during lectures might well prove to be profitable.

(6) In 1933 an extremely interesting investigation was written up by Bloom (154), although again it appears to suffer from a lack of replication. Five lectures and 29 discussions were tape-recorded and key extracts were played back to the students involved within 48 hours of the original, and they were asked to recall their thoughts at that moment in the original session. Bloom's analysis may be said to be slightly biased against the lecture, because some of the criteria he uses,
such as 'thoughts about the student speaking', are only appropriate to the discussion, but Bloom includes them to produce a highly significant difference between lectures and discussions, in terms of 'all thoughts about other persons'. His analysis did show evidence of mind-wandering in lectures, compared with closer student attention and more synthesis in discussions.

(7) None of the three investigations, discussed above, into what happens during lectures, can be said to be highly significant, because they appear to lack replication. They may, however, point to ways in which understanding of the lecturing process could be deepened.

(8) A limited amount of work appears to have been done on the reaction of sub-grouping of students to the lecture.

(9) The table below illustrates the findings of three studies:

**TABLE 4.5**

<table>
<thead>
<tr>
<th>STUDY</th>
<th>N</th>
<th>INSTITUTION</th>
<th>HIGH ABILITY</th>
<th>LOW ABILITY</th>
<th>OLDER STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>McLeish (155)</td>
<td>158</td>
<td>College and University</td>
<td>*</td>
<td>**</td>
<td>*</td>
</tr>
<tr>
<td>McManaway (156)</td>
<td>98</td>
<td>College</td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>McLeish (157)</td>
<td>1238</td>
<td>College</td>
<td></td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

* Not in favour of lectures
** Favoured lectures.

(10) It would be presumptuous at this stage to attach overmuch importance to these findings, but they do point to the fact that ability and age may prove to be significant variables, in reaction to teaching method. In passing, it is of interest to note that Smithers (158) found, working with 431 students, that personality, as measured by the Eysenck Personality Inventory, did not appear to be a significant factor in attitude to lectures.

(11) Taking a few examples of studies comparing the lecture against other methods, and bearing in mind the reservations expressed earlier (4.3.1.2, 7, 8), Flood-Page's work (159), which showed a distinct reaction against the lecture in favour of other teaching strategies, may reveal one key problem with such evaluations, in that the grass always looks greener on the other side. These students had had more experience of the lectures compared with other methods: the other methods, therefore, seemed more attractive. Miller and Dale's work
with university freshmen has already been quoted (see Ref. 149) and again shows dissatisfaction with the method most experienced (in this case the class) and favourable response to an alternative strategy (the lecture). It may, therefore, be necessary to treat research results of this kind with extra caution.

(12) Bligh (160), summarising findings from over 80 research studies, concluded that whilst there was only limited evidence from this global survey that lectures are effective at transmitting information, there was stronger evidence that they were ineffective at stimulating thought. Bligh's survey of so many disparate studies must inevitably be treated with some caution, for it is notoriously difficult to carry out such comparisons in any objective way, but he is probably on stronger ground in his latter claim, than in his former claim, because of larger numbers of studies. Costin (161), in another wide-ranging view of research, highlights the problem of comparison between studies, but concluded that there was no consistent evidence that the lecture was more or less effective than any other method. In conclusion, it is worth noting that Hills (162) quotes several studies which show students positively supporting lectures, even when provided with alternative sources of the same information in the form of lecture notes or tape recordings.

4.3.1.4 Summary

(1) This section has tried to clarify the various objectives, which can be achieved by lecturing. It has shown that, while there is still a clear place for the lecture, many traditional objectives of higher education, such as the development of critical thought, might be better achieved by other teaching methods. Certainly the research evidence, with all its limitations, would appear to show that the traditional pattern of hour long lectures, is not in accord with what we now know of typical learning patterns within lectures. Half-an-hour, and probably less, would appear to be nearer to the ideal pattern, and such a curtailment, would mean that a fundamental change would have to take place in the objectives of each lecture. It must, however, be stressed that the research evidence is unsatisfactory and lacking in replication.

(2) Having explored the lecture, as one of the main ways of teaching in higher education, it is now necessary to consider the second main pivot of teaching, the small group.
4.3.2 DISCUSSIONS AND GROUPS

4.3.2.1 Introduction

(1) There is much overlap between these two and so they will be handled together. This section will start by looking at a number of examples of the use of discussion, in order to open up the scale of experiment with this teaching method. Research on the effectiveness of these approaches will then be briefly considered, followed by a more theoretical discussion of the objectives of discussion as a teaching method.

(2) The argument will then move on to advance the idea, that the development of discussion methods has been carried out without a sufficient underlying theoretical base, and finally a brief attempt will be made to open up this theoretical foundation.

4.3.2.2 Definitions

(1) The Nuffield Foundation Group for Research and Development in Higher Education (163) recently provided a useful short review of small group teaching and learning, gleaned from their series of visits across the country.

(2) There is no single definition of the seminar and they range from the Germanic definition (164) of an advanced tutorial, where independent work is done under a professor by a seminar member, to the traditional English definition, given by Bligh (165), namely, group discussion introduced by the presentation of an essay, or other work. The seminar can, at times, be little more than an unstructured discussion group or, at the other extreme, a mini-lecture.

(3) Having defined a group as 'a number of people who can interact with all the others face to face', Bligh goes on to distinguish buzz groups, where the class is divided into sub-groups of 2-6 to discuss a problem briefly within a lesson or lecture; brainstorming groups where, in an intensive discussion situation, spontaneous solutions to a problem are taken without criticism; problem-centred groups; case discussion groups; syndicate groups, where 6 students work at the same problem area with limited tutor contact, writing a joint report for appraisal by the whole class; tutor-controlled discussion groups; step by step discussion, free group discussion and the T-group.
4.3.2.3 Attempts at Small Group Teaching

(1) This section can do no more than give some indication of the rich variety of patterns of small group teaching to be found in the literature.

(2) Epstein (166), in a polemical work, described the use of research articles with small groups of non-scientists, to get at the spirit and methods of enquiry of the scientist. He talks of evaluation of this approach but it is very weak evaluation.

(3) Lewis (167), working with groups of twenty students on the sociology of education, divided them into sub-groups of four, with each sub-group taking a session in turn. His method is of interest; his research design is too artificial.

(4) Erskine's (168) well-evaluated study of medical teaching, describes the replacement, in a complex teaching programme, of nine lectures, by two short discussions of set design and sequence. Apart from this one change, the course remained identical with previous years and it was possible to compare results between years. The one criticism is the usual one, when examinations are used as the criterion of success. The examination results may not reflect the teaching methods, but rather student learning outside of the formal course.

(5) Abercrombie's work will be discussed in more detail later, but, writing under her maiden name, she describes an interesting approach (169). Students worked individually for half-an-hour on an exercise, and then met together in groups of 12, for a further 1½ hours, to discuss it further. The exercises focused on the difficulty of observation, on accurate use of language and on the evaluation of evidence.

(6) A most interesting experiment in teaching chemistry is described by Tyrrell (170), in which consortia, of up to four pairs of students, worked together for a whole term. In a six hour laboratory period, each pair worked on a facet of a common project, but the results of each pair's work were essential for a full consortia understanding of the project as a whole, and this forced rigorous full group discussion at the end.

(7) The Nuffield Group describe the inter-university cooperation between Chelsea College, London, and University College, Cardiff (171), in the teaching of reaction kinetics to first year chemistry students, with a traditional lecture/laboratory course being replaced by demonstrations, video-tapes of research experiments, cooperative
exercises in graph plotting and problem-solving and small group discussions.

(8) Collier (172), working with students in America and at Bede College, Durham, is often quoted as the major exponent of the syndicate method, briefly described earlier in this section. It is difficult to account for the fact that his work is so often quoted, because it is no more radical or ambitious than many of the above approaches, although it is possibly a forerunner to many later innovations, and therefore can be said to have acted as a catalyst. Certainly, his later article (173), although its title talks of 'further evidence', makes no attempt to evaluate the method, but in this article he does claim as the strengths of the method, that it is flexible; that it allows for an interdisciplinary approach; that it allows students to clarify their thoughts by interaction with their peers. In passing, it is worth noting that evaluation is now taking place (174) of an inter-collegiate scheme, using syndicate methods, in the sociology of education.

(9) It is hoped that the above examples give some useful indication of the variety of small group teaching approaches, described in the literature.

4.3.2.4 Research Evidence

(1) It was said, in the section on the lecture, that the Robbins Committee (175) estimated that college of education students, in the early 1960s, spent 1.9 hours a week on average in seminars, and that this might have increased slightly since then.

(2) It is very difficult to make a judgment about the quality of the research into small group work. Evans (176) and McGrath and Altman (177) both published in 1966, but, whereas the former said that "... there is remarkably little research on the relative effectiveness of group methods", the latter looked at hundreds of studies, although on a much broader front, and found little replication or established conclusions, a fact also commented on by Cox (178).

(3) The problem with so many research studies, as has already been discussed, is that they are small-scale, tend to use a caricature of the scientific method, with experimental and control groups and, more importantly, take no note of what happens during the remaining hours of the working week. In addition, by failing to get reasonably homogeneous groups, the results are usually inconclusive.
(4) Canter and Gallatin (179), comparing lectures with discussions, as related to personality; Fletcher and Knott (180), working with seminar papers instead of lectures, in teaching the history of education, at Worcester College of Education; Clement (181), looking at learning and retention in student-led discussions of 30 students; can all be regarded as recent examples of this type of very unsatisfactory research.

(5) McManaway (182), while not being open to the criticism of 'short term', for his work extended over several years, provided only a low-level evaluation of a sociology course, in which lectures were replaced by a combination of lecture scripts, prescribed textual reading and group assignments leading to class discussion.

(6) Flood Page's findings have already been noted (183), because his students rated the group discussions very highly for efficiency and enjoyment, but they had only had limited experience of it, having had most experience of lecture and class teaching. Again, it has been noted that McLeish's (184) 238 students preferred the seminar to the lecture.

(7) Costin (185), in a wide-ranging review of the research, noted that there was some evidence to suggest that discussion was effective in promoting interpretation of data and problem-solving, but he again found a total lack of common ground in the research evidence.

(8) Summing up the research evidence, it can be said that many would agree it to be unsatisfactory. Evaluations of particular courses tend to be either short term, artificially structured and one off, or longer term, extremely partisan and lacking in detachment or rigour.

4.3.2.5 The Aims of Small Group Teaching

(1) It is obvious from the teaching strategies described that many have been dissatisfied with traditional lecture courses and have turned to small group work as an alternative, and it may be helpful, now, to clarify what can be achieved in such work.

(2) Cardinal Newman (186) wrote:

"When a multitude of young persons, keen, open-hearted, sympathetic, and observant, as young persons are, come together and freely mix with each other, they are sure to learn from one another, even if there be no-one to teach them; the conversation of all is a series of lectures to each and they gain for themselves new ideas and views, fresh, matter of thought and distinct principles for judging and acting ..." (pp 138-139).
(3) Although talking about university life as a whole, this has much relevance for any thoughts about discussions. Written last century, it encapsulates much of present-day thinking about small group discussion.

(4) The range of group work strategies makes it difficult to treat group work as a homogeneous concept, and it highlights the problems of making any valid judgment about the effectiveness of group work.

(5) Rudduck (187)* set out possible objectives for group work and Stones (188), some years earlier, also indicated possible objectives for seminars.

(6) The list below is basically Rudduck's, indicated by an 'R', with Stones' objectives indicated with an 'S', where they coincide.

**TABLE 4.4**

<table>
<thead>
<tr>
<th></th>
<th>Group Work Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i)</td>
<td>R &amp; S To help students communicate as physicists (substitute other disciplines). This aim has to do with language, standards and structure of knowledge.</td>
</tr>
<tr>
<td>(ii)</td>
<td>R To provide practice in the application of principles.</td>
</tr>
<tr>
<td>(iii)</td>
<td>R &amp; S To encourage the development of appropriate critical standards and a questioning attitude to evidence.</td>
</tr>
<tr>
<td>(iv)</td>
<td>R &amp; S To extend the range of ideas available to an individual.</td>
</tr>
<tr>
<td>(v)</td>
<td>R &amp; S To provide an opportunity for students to clarify their thinking, through talking (with the group acting as a critical sounding board).</td>
</tr>
</tbody>
</table>

By way of comment on this list, it could be said that 'v' is probably the only one which could only be achieved through the seminar, with 'iv' a close contender. Although the other three objectives could be achieved by discussion, it is possible to argue that, on some occasions, they might more appropriately be achieved by other methods, such as written tasks or well designed practical problems.

(7) Abercrombie (189) has done as much as anyone to influence current thinking about small group work, using leaderless small groups to encourage the achievement of the above objectives. A useful summary by Abercrombie of her own work is to be found in Butcher (190).

(8) Possibly this quotation from Stenhouse (191), who has made a significant contribution to the development of small group teaching, first with the Schools Council Humanities Curriculum Project, and then...”

* See footnote to reference
with the Centre for Applied Research in Education, at the University of East Anglia, sums up something of its essence:

"Participatory small group teaching is thus effective as a critical exchange, in which significant relationships are suggested and explored in order to promote an understanding of the structure and logic of knowledge, or a grasp of the problems of applying knowledge or skills in various situations". (p.22)

4.3.2.6 Criticisms of Small Group Teaching

(1) Reservations have been expressed about small group teaching. Moyer (192), for example, in an excellent criticism of some of the more naive reactions against the lecture in favour of discussion, argues that discussions can often be as authoritarian as lectures, not encouraging free thought, but passing on the views or intentions of the tutor. Macrae (193), in 1954, produced a low-level criticism of the college of education type of seminar, arguing that it fell half way between the lecture and the individual tutorial, having none of the advantages of either, and all of the disadvantages. Goldschmid (194) however, identifies some real problems in small group work when he says:

"... discussions and conferences are fraught with considerable problems of their own ... students come to discussions unprepared ... instructors are not sufficiently trained ... students cling to their conditioned role of passive observer ... moreover in a 'good' discussion ... no more than half a dozen assertive and/or well-informed students, talk, the rest remain silent ...".

(2) Koc (195), in reporting initial results of observations of 200 small groups in seven universities, observed that one strong factor common to most groups, was their lack of homogeneity. There was little exchange between members of the group, with most exchanges being between the tutor and individual members of the group. Accepting that this was an early finding of the study, and noting that the presence of the observer may have made the groups more dependent on the tutor than usual, if there is truth in these findings, it may mean that some of the objectives of small group work, discussed in the first half of this section, are not being fully achieved. These are important criticisms and need careful investigation, because they hit at the essence of the Stenhouse, Rudduck and Abercrombie arguments.

(3) These reservations about small group work, and about discussions in particular, open up the fact that there may have been a tendency to move, rather uncritically, from lecture to small group work, seeing it as a panacea for all the problems of traditional lecture courses.
(4) Abercrombie and Ruddock rightly see that one key thing which can be achieved in small group work, is the interaction between peers and the clarification of ideas, when set against those of others in the group, but this is only one part of what is involved in being a member of a group.

4.3.2.7 The Chemistry of Small Groups

(1) To advocate small group work, without some understanding of what can happen in small groups to help or hinder the learning process, is somewhat naive and this will be seen in practice in a later chapter (see 6.5.2.1).

(2) Size of group, for example, can be a significant factor, although the research evidence is unsatisfactory. Three examples of research studies into the effect of group size, on teaching and learning in small groups will be examined, although it needs to be noted that they all suffer, in different ways, from problems of research design. Hoover, Baumann and Shafer (196) divided a group of 320 students into two halves, working one half in three teaching groups of 50 and the other half in large lectures, followed by seminar groups of 15 students; Schellenberg (197) worked a group of students, in groups varied in size from 4 to 10, and found some consistent evidence of students preferring the smaller sized groups; Cottrell (198) worked chemistry students, in groups of 3, 12 and 24 and found no significant differences between achievement in an exam.

(3) Without analysing each study in detail, it is sufficient to note that between them, they suffer from a number of generalisable faults, such as artificial structuring of groups, in order to achieve a pseudo-scientific research design; an unproven assumption, that examinations provide a satisfactory criteria against which to assess teaching method; unsatisfactory control of variables.

(4) On this subject of group size, however, it is worth noting that Stones (199), in a survey of some 1,052 final year college of education students, found a strong preference for teaching groups of from 5 to 15 in size.

(5) Leaving research findings aside, group size is felt to be a significant variable, because it is directly related to the nature of the interaction process within the group. The smaller the group, the more chance of every group member participating until the group becomes so small, that inhibitions of a different order rise to prevent contributions.
(6) Group leadership is a second important factor, and can be broadened into the question of the nature of authority in the group. The leader can be seen as the most mature member of the group, able to make a unique contribution to its life, or he can be seen as a background figure (200), enabling the group to be involved in free group discussion. Clearly small groups can either have a tutor present or absent and this presence or absence will almost certainly affect the way the group operates. Equally clearly, the tutor can play a number of very different roles in the group (201): counsellor, devil's advocate, teacher, to name but three. He can structure the group (202) to operate in particular ways, but there is always the danger of over-dominance by the tutor (203). A school of thinking based on the work of the Tavistock Clinic (204, 205, 206) has played a central role in the study of group dynamics, seeing the group constantly changing, as leadership moves from one member to another; seeing hidden dynamics interacting with the explicit behaviour of the group; seeing tension build up so as to prevent the group achieving any solution at all.

(7) In this connection, a recent book, by McLeish et al (207), is of interest, for it considers the group from the point of view of behavioural psychology and interaction theory. They discuss (p.196) some of the problems of intervention by the leader in group discussion, and show this to need great sensitivity.

(8) In passing, it is worth noting that Bridges (208) listed several reasons why so many students are silent in discussions. They feel threatened by the lecturer's position of authority, often interpreting open-ended questions as tests of their knowledge; they feel threatened by their peers or the lecturer's greater sophistication in oral debate.

(9) We know relatively little about how to lead groups effectively and the work of Jean Ruddock at the University of East Anglia needs to be noted. She used video tape, of small group discussions, to help lecturers improve their seminar technique (209). Similarly Powell's (210) method of investigating group interactions needs also to be noted. Discussion groups were tape recorded and each member of the group was given a code letter. On replaying the tape, a typewriter key, corresponding to the code letter of the person speaking, was struck at one second intervals, leaving a blank for silence, in order to build up a picture of group participation by each member. This would appear to be a powerful tool for investigating group interaction, but it is time consuming, makes major assumptions about the ability to identify every speaker by voice, and discounts the effect of the presence of the tape recorder on both leader and led.
Another aspect of small group work, which needs to be noted, is that of group norms, or the unstated assumptions of the group which may, or may not, be in accord with the leader's, or the institution's norms. This is essentially a topic of interest to the social psychologist, and I do not intend to discuss it in detail, but rather to open up its existence.

In essence, it stems around the existence of sub-cultures in any institution and, with specific reference to curriculum development, around the existence of attitudes and the problem of changing them (see e.g. 6.5.1.2).

Hargreaves (211) gives a very thorough analysis of the existence of sub-cultures in a secondary school, identifying, in particular, the less academic group left behind by the streaming process. This group had attitudes and expectations at variance with the main values of the school. The Schools Council, in a major research study (212), identified conflicting attitudes to a range of academic objectives held by pupils, staff and head teachers.

This is well summed up by Boocock writing about the sociology of learning (213) at the school level:

"... some of the best designed and most conclusive studies make it quite clear that many young people will not apply their best efforts to learning tasks unless this is consistent with the norms of their informal clique and friendship groups".

At the higher education level, Allen (214) supported an argument for the development of small group work, by reference to work done in social psychology on attitude change and group norms.

In order to highlight the undoubted influence of group norms on the individual members of the group, the following experiment will be described in some detail (215). A small group of students were gathered to take part in an "experiment" in visual judgment. The experimenter showed them two large white cards, one containing a single vertical black line, the other three vertical black lines of varying lengths. The subjects were asked to select from the three, the line which was the same length, as the one on the other card. One of the three lines was the same length, the other two were either considerably shorter or longer.

Different pairs of cards were examined in succession, and each time, the group made a judgment. Initially the whole group agreed in identifying the matching lines, but suddenly one member of the group,
found himself out on a limb, because he wished to disagree with the rest of the group, on a number of different occasions, about their judgments. Some students resolved this conflict by sticking to their independent judgment; others resolved it by suppressing their own judgment, and going along with that of the majority.

(17) In fact, the group, except for the dissenter, had been briefed, prior to the 'experiment', to choose, unanimously, the wrong line, after a number of correct choices, in order for the dissenter's reaction to the hidden pressure to be examined.

(18) This experiment has been quoted at length because it illustrates the subtle influence of group norms, and highlights this often neglected aspect of any small group work.

(19) On a more psychological level, Cureton (216) working with a year group of students from Bishop Otter College in 1968, found large numbers of students in small group work, who expressed feelings of ignorance, inferiority and inadequacy.

4.3.2.8 Summary

(1) In short, group size, the communication patterns within the group, including the nature of the leadership and the personality of the members, as well as the norms of the groups, are all factors which need to be borne in mind but, in the end, it is probably the practical know-how of the seminar leader, which makes groups tick (217).

(2) Summing up this whole section, it has been shown that many attempts have been made in higher education to move from lecture-based courses to courses involving varying kinds of small group work, structured to a greater or lesser extent. Much of the research evaluation, however, was felt to be unsatisfactory, because of smallness of numbers, some lack of objectivity and, certainly because of lack of replication.

(3) Abercrombie, Rudduck and Stenhouse were shown to have helped in analysing just what could be achieved in small group discussions, but it was noted that, in practice, group discussion was not always smooth and easy, largely because many of the advocates of small group discussion had failed to pay enough attention to the detailed research, carried out on a number of factors which can affect small group work, and this was discussed at length in the last section.

(4) A final judgment might be that there is a wealth of energy, very unsatisfactory research evidence, but probably growing expertise and awareness of the problems of mounting small group teaching.
4.3.3 INDIVIDUALISED LEARNING

4.3.3.1 Introduction

(1) The lecture and small group work have been the traditional methods, used in higher education, and the strengths and weaknesses of each have been discussed. An interest in individualised learning is no new thing, however, evinced for example, by Ruth Beard's interesting account of the introduction of the Dalton Plan into her own grammar school in 1922 (218).

(2) There has, however, been an increasing wish to explore alternative approaches, and these will now be opened up.

(3) Undoubtedly many attempts to provide 'innovatory' courses in higher education have been influenced, at least implicitly, by the psychology of individual difference and the nature of learning. In most cases, the influence is implicit, and often the reasons, for attempting change in teaching methods, have nothing to do with psychological theories, but rather with a teacher being concerned with the practical response of classes of students to a particular course. In arriving at this judgment, it must be recognised that relatively few teachers, in higher education, have undergone a professional training, which would confront them, in any depth, with the psychological issues.

(4) McClellan (219) usefully distinguishes two different senses in which individualisation of learning is used. The first, and more common use, is a response to prevent the individual differences in the learning group from interfering with the teaching as a whole; the second is a response to enable each student in the group to achieve his full potential. Most of the attempts at individualisation are concerned with the former, but are occasionally overlaid with something of the latter.

(5) Undoubtedly individualisation of learning has been bedevilled by uncritical cliche-ridden advocates, who make polemic claims for the method (see, for example, Beach (220)), but useful reviews of literature will be found in Jason (221) (medical education), Hatch and Richards (222), and, more recently, B. and M.L. Goldschmid (223). Parallel with these reviews, Gibbon's rather verbose book on individualised instruction (224), needs to be noted, because it describes the process of individualisation, on a broader scale, in schools, ranging, historically, from the Dalton Plan, through Summerhill to Countesthorpe College in Leicestershire, and the Knowplace. Finally,
a very comprehensive and practical set of papers was presented at the
tenth annual conference of the Association for Programmed Learning and
Educational Technology (225), which revealed the range of activity in
1976, but they showed that very little serious evaluation was taking
place.

(6) The official mark of approval of the move to individualise the
curriculum, might be said to be seen in a recent O E C D report on the
training of teachers (226):

"In addition, the student teacher's training will increasingly
depend on the plans he personally has decided on for his work
and activities. This implies that individual work will be
very important and that the supervision, provided for the small
groups, will allow a check to be kept on their progress, advice
to be given, and group work and reflection to be encouraged".
(p.394).

This is a good example of the second type of use of 'individualisation',
as defined above.

(7) Several of the later sections of this chapter will deal with
teaching approaches, which facilitate individualised learning, but
what follows here is a description of some of the approaches, not
accommodated in those later sections.

4.3.3.2 Attempts at Individualisation of Learning

(1) Three types of approach will be described and will serve only as
examples of individualised strategies. An instance of the first type
of approach can be found in two articles by Creager and Murray(227)
and by van Hemert(228) in which they describe attempts
at individualisation, obtained by giving flexibility of option choice in
a course. This is not considered to be a significant attempt at real
individualisation, but it needs to be noted.

(2) Secondly, two examples will be given in which the source of
instruction is not the teacher, but some other medium. A very simple
teaching approach, with a somewhat naive evaluation was described by
McKeachie (229) at the University of Michigan, in which 360 students
followed a course in elementary psychology, which used as its main
teaching vehicle, work sheets containing short answer questions, which
were problem-oriented.

(3) A more questionable attempt at individualisation is described by
van der Klauw (230) in a rather weak review of the literature. A
mathematics course is described (p.237), based on a text book, in which
the students looked at 34 T.V. mini-lectures, available for individual viewing, attended discussions and weekly consulting sessions. The future development of the course included computerisation of the diagnostic tests, producing feedback to the students in the form of standardised sentences from the computer. While producing the possibility of individualisation, it is possible this approach might produce student alienation.

Finally an example of a different form of individualisation, in which the student's own response to the course is open-ended. Parlett and King (231) describe three case studies, involving what they term 'concentrated study', in which the students followed a block timetabled course in one subject, for $2^{1/2}$ to 4 weeks, enabling them to develop individual lines of enquiry.

Summing these approaches up, it can be said that they provide examples of three responses to the problems of individualisation. The first meets the problem of student motivation, by providing alternative choices of content area; the second ignores the problem, but does allow for differences in speed of learning; while the third concentrates on flexibility of student response.

The point is they can all be called individualised courses, but their similarity ceases at that point, illustrating the diffuse nature of this concept.

4.3.3.3 Computer-Assisted and Computer-Managed Learning

No discussion of individualisation would be complete, without a consideration of the impact in the last few years of the computer. National Conferences, on computer-assisted learning, were held at Keele University in 1971, at Lancaster in 1974 (232), and at Oxford in 1975 (233), the latter being attended by 250 delegates. In 1973, the Council for Educational Technology set up a five year development programme, with a budget of £2,000,000, which sponsored 25 projects (234), including 3 design studies, 10 feasibility studies and 7 development projects. These projects covered the fields of statistics, engineering, physics, clinical medicine, chemistry, mathematics, teacher education and remedial reading. Some more detailed idea of the range of approaches used can be gained from Johnson (235), in 1971, and Hooper and Toye (236), in 1975.
By 1971, there had been sufficient experiment for Johnson to attempt an assessment (pp.102-104) of the potential and limitations of computer-assisted instruction, recognising that its effectiveness was by no means proven, and for Annett (237) to recognise that:

"Only a minute proportion of the problems of education can be solved by using currently viable technology. ... One of the reasons is that it involves intensely difficult questions to do with the nature of cognition ..." (p.12).

It is necessary to be quite clear that the computer can be used either to teach or to monitor learning. As a teacher, the computer has proved particularly useful for model building, enabling, as Hebenstreit says (238):

"... each new concept (to acquire) a new dimension through the model which integrates, clarifies and explains ..." (p.306).

However, Hooper rightly indicates (239), that probably the greatest challenge for the computer, will be as a manager of individualised instruction (p.368), and Hawkridge describes some particular problems, in implementing computer-managed instruction (240).

Sharp (241) considered that growth in the use of the computer had been hindered by 'ill-defined' user requirements, the conservativeness of established techniques and an over-emphasis on programming, resulting in too much 'micro' and too little 'macro' understanding of the computer and its potential.

It is too early to make any assessment of the place of the computer in helping to individualise learning. Clearly the potential is there but development is only in its infancy.

Problems of Individualisation

It needs to be noted that individualisation of the curriculum raises many problems. Firstly students are often unable to participate meaningfully in the independent learning, either because of lack of training, or because the learning strategies of their total course are at variance with the independent course (242) (243). Secondly, as Wallace notes (244), individualisation poses major problems of organisation and monitoring of student progress, which may be alleviated by the analytic potential of the computer.

Finally Hawkridge (245) raises the fundamental question of 'successful diagnosis of learning difficulties. He recognises that it is relatively easy to produce realistic diagnostic tests in mathematics, but not quite so easy in the less structured disciplines and this would appear to be a significant problem.
(3) Having looked at some general strategies of individualised learning, it is now necessary to examine some more specific ones. Programmed learning will be looked at, followed by a second behavioural strategy, the Keller plan. This will then be followed by an examination of a number of modular courses, which make use of a range of teaching media, to achieve an individualised approach, and finally there will be a consideration of simulation and gaming.

4.3.4 PROGRAMMED LEARNING

4.3.4.1 The Foundations

(1) In 1954, B.F. Skinner published his influential paper, 'The Science of Learning and the Art of Teaching' (246), in which he described the process of behaviour shaping with animals, using rewards, contingent on the desired response, followed by reinforcement of correct responses. He discussed in detail the implications of this laboratory-based study of learning, for the classroom, making a case for programmed learning in mathematics. In a paper in 1961 (247), he argued the case again, indicating some growing sophistication in the teaching machines. This second paper, however, revealed singularly little growth in the theoretical insight in the seven years since the original paper, and reveals little deeper insight into the complexity of human learning. As Skemp argued in 1962 (248):

"... we cannot continue to be satisfied with implications for education, from the results of experiments with simple mental processes with animals ..." (p.133);

or, as McKeachie says (249):

"It may be that they also have application to other restricted situations, but meaningful educational learning is both more robust and more complex" (p.49).

Anglin, in assessing Bruner's work, makes a similar point (250):

"The stimulus - response bond ... provided neither the malleability nor the explanatory power to account for the complex behaviour of individuals engaged in ... problem solving" (p.127).

More fundamental reservations about the initial methodology of behavioural psychology have, however, been expressed, and are summarised by Hills (251), referring to Russell (252) and Rosenthal (253), whose critical attach has a broader reference than just to behavioural psychology.

(2) Compared with Skinner, Leith, one of the main exponents of programmed learning in this country, revealed a growth in insight over the years. In 1963 (254), he saw the potential of programmed learning, and indicated that little was known of the emotional response of students to it. By 1970 (255) however, he was able to write:
"It is clear, therefore, that in analysing instruction, there must not only be a breakdown of subject matter, but also of learning processes required for the achievement of instructional objectives" (p. 118).

and again:

"The consequence is that we are beginning to be able to provide instruction which not only matches objectives, but which also caters for individual differences in strategies of learning" (p. 126).

4.3.4.2 Research Evidence

(1) In 1963 (256), Leith was very critical of the state of research into programmed learning, mainly because of its failure to control variables sufficiently. The kind of research he was critical of was still taking place in 1969 (257), when McCrea and Swanson described the replacement of a course of lectures by programmed instruction in a laboratory. They retained only five lectures and claimed that the course was completed in half of the time, with students obtaining similar achievement results to the traditional course, at the end. Leith's point would be that there are so many other factors, which might have influenced this result, that it is impossible to attribute the result just to programmed instruction.

(2) In order to give some idea of the range of the literature, a few examples will be quoted. Working with a small sample of 66 students, Elley (258) looked into the extent to which student response errors interfere with efficient learning in programmed instruction. He found that, while errors produced a 'pall effect', in programmes which basically involved rote learning, this was not the case in more demanding programmes, requiring problem-solving of the students.

(3) Leavitt and Mueller (259), in a highly structured laboratory type experiment, looked into the question of the importance of feedback to students. They found that, of the ten groups of students and teachers with whom they worked, the groups receiving feedback from the task, performed better on it, were more confident about it, but took longer to perform it, than the groups who received no feedback and these differences were shown to be statistically significant at the 1% level.

(4) Amaria et al (260) and Holroyd et al (261) both investigated the differences between individual and small group programmed learning. Group learning, in both cases, was found to be as effective as the more traditional pattern of individual learning but, in the case of the latter study, there was some dislike of group learning as a way of tackling programmed instruction.
Suchett-Kaye (262) reviewed a large number of studies, in looking at the place of I.Q. and anxiety, as they affected programmed learning. The main point identified was that there was little to connect I.Q. with performance in programmed learning, although it must be pointed out that his discussion of the problem is somewhat inconclusive.

In a slightly off-beat piece of research, in which he used programmed learning to attempt to foster creativity, Razik (263), working with three treatment groups, each of 62, found that his experimental groups gained in terms of 'flexibility' and 'elaboration'. His results need to be treated with some caution; it is his attempt to programme creativity which is noteworthy.

Leith (264) investigated the effects of personality on achievement in programmed learning over a number of years and, in 1973, attempted to draw together the results of the separate investigations. He suggested that much of the evidence points to a greater tolerance of ambiguity in extroverts, whereas introverts prefer the more structured learning situation.

Summarising this brief review of the research evidence about programmed learning, one can say that there has been uneven progress. The problems of setting up realistic research designs, of obtaining adequate sized samples and comparability between studies are again evident, and one suspects that relatively little is really known about student reaction to this method of learning.

At a more practical level, Jackson suggests (265) that few programmes have been developed at higher education level, because of their development costs in terms of time and money, and because there is a suspicion that they may be uncongenial to students, and may not encourage the kind of original response desirable in degree level work.

4.3.5 P.S.I. AND KELLER PLAN

4.3.5.1 Definitions

Programmed learning is a loosely defined term and often overlaps with P.S.I. (Personalised System of Instruction) and Keller Plan Teaching. Leith (266) indicated that the common 'image' of programmed learning was of a fixed and validated sequence of instruction, but that it had now (1969) developed into "the spontaneous and adaptive, as well as the fixed and validated" (p.80).
(2) Attempting to clarify the difference, programmed learning, despite Leith's reservations above, is probably best limited to the fixed (or branching) validated sequence of instruction, advancing the instruction by one frame at a time. P.S.I. and Keller involve units of study rather than single frames.

(3) Two terms in the literature now need to be clarified and distinguished, mastery learning and contingency management.

(4) Mastery learning is best described by Block (267), as a development of individualised instruction, in which the learning is divided into a series of small work units, which are criterion tested on completion. Students take differing lengths of time to complete each unit, but over 75% of them achieve high grades at the end. Since students are unable to move on to the next work unit until they have mastered the previous unit, it can be said that this high result needs to be treated with caution, because it follows of necessity from this method. The origin of the idea was traced back to the University of Chicago Laboratory School in 1926, under Professor H.C. Morrison (Block Chap. 4).

(5) Contingency Management (268,269) attempts to apply the behaviourist theory that there are reinforcement responses, which are contingent on earlier behaviour, to the practical world, and suggests that it is possible to build learning sequences using this approach.

"By contingency management, I mean simply managing things so that rewards or reinforcements are contingent upon, or dependent upon, the execution of certain behaviour." (270)

4.3.5.2 Criticisms of Mastery Learning

(1) It should be noted that this basic philosophy was challenged by Easley and Witz (271), who maintained that Piaget's work questioned the possibility of designing behaviourally-based activity packages, tailored to meet individual needs, because of our current lack of knowledge of the 'structures children bring to bear on situations'. This does not appear to be a valid criticism, because contingency management makes quite explicit its behavioural base and, providing it does not claim to be the only way of learning, it can only be challenged within the terms of its behavioural assumptions.

(2) Beard, however, offers a more fundamental criticism (272), in that associationist theory is based on investigations into the simpler kinds of animal learning, limiting its relevance to human learning. Amplifying this, the processes of conditioning, explored by Skinner and his school, take little note of motivation, previous experience, the
process of concept formation, to name but three. The fact that Homme and others appear to have taken over the basic behaviourist theory, without recognising the greater complexity of human learning, must therefore make us cautious.

4.3.5.3 Keller Plan and P S I

(1) In 1968, Keller (273) published an extremely influential article, describing a course, whose five distinguishing marks were: individual pacing, mastery learning, lecture/demonstrations limited to stimulus only, written work units and tests, and peer group teaching. This would appear to be an applied version of Homme's contingency management. One of its distinctive features is, as Beard points out (274), that it provides individualised teaching.

(2) A whole issue of 'Programmed Learning and Educational Technology' (275) was recently devoted to individualisation in higher education, and it concentrated on the Keller Plan. The introduction to this issue stated that the Keller Plan was the first system of individualisation to be widely adopted in higher education, and pointed to its underlying theoretical base of learning principles.

(3) In passing, it is worth noting that B. and M.L. Goldschmid provided (276) a very useful comparison (pp 19-20) of this type of course, which they defined as modular with conventional teaching. Theirs is a biased comparison, in favour of the modular course, but it is nonetheless thought-provoking.

(4) Useful reviews of P S I will be found in Boud et al (277), and Dychtenberg et al (278), although neither of them attempts to review the method analytically. The former conclude that the term P S I is a 'generic term used by teachers, some of whom only accept a little of the plan put forward by Keller ...' This is a valid comment about P S I but probably assumes too great a generic importance to Keller for, as this present chapter is trying to show, P S I has its roots in a number of different schools of thought and not just in contingency management.

(5) Kulik (279) also produced a most thorough, if slightly uncritical, review of the literature, arguing that P S I was more effective than conventional teaching methods, in terms of end of course performance, retention, transfer, as well as in students' attitudes. Another review by Traveggia (280), summarising fourteen separate studies, concluded that P S I was superior to other methods, when looked at from the point of average student performance on course examinations.
(6) Koen(281), Born and Herbert(282), Elton and Boud(283) and the Nuffield Group(284) describe the use of Keller plan teaching in science, engineering and psychology courses and Koen stated that the plan's clear cut objectives made it particularly suitable for engineering courses.

(7) In a well written article, clearly favouring Keller, Davies argued (285) that the method was particularly suitable for the more closely structured science disciplines. He failed, however, to provide a closely argued case favouring the method, relying more on assertions of faith, which could be challenged by those favouring alternative methods.

(8) One distinctive feature of the Keller plan is the use of 'proctors' to provide peer group teaching. On the face of it this appears to be largely a question of economics and rationalising the use of staff time, but it is worth noting that B. and M.L. Goldschmid (286), while recognising that it is not a 'panacea' (p.29) for all instructional problems, argue, following Bruner (287), that there is value in the 'multi-mode engagement with the subject matter', produced by the twin roles of student and teacher. They appear to recognise, however, that its greatest value is probably in terms of participation, cooperation and social interaction (p.29).

(9) The Keller plan is not without its critics and Young (288) criticised it for its behavioural base claiming it to be lecture-oriented, even if the lectures are in the form of text books. He described the plan as a somewhat pre-planned, cut and dried, mechanistic course; which failed to make sufficient allowance for the student's own learning.

4.3.5.4 Research Evidence

(1) The Keller plan has not been in use for long enough to provide a large volume of evaluative studies. One key problem would appear to be student drop out, particularly from the testing procedures. Oosthoek (289), for example, in describing three Keller type courses, noted that in courses with voluntary testing procedures, students with a large number of errors tended to drop out of subsequent tests and suggested that mastery learning, in which the tests are integral to progress, may be the answer.

(2) McMichael et al (290), worked with 800 students on a Keller-type course, using three control groups, each of 200, and one experimental group, and claimed that the Keller students achieved a significantly
higher result than those following the traditional course. This research design, however, leaves too many uncontrolled variables unaccounted for. Again, Fachnie and Schillace (291), working with students on a Keller-type statistics course, claimed that it produced more positive attitudes.

(3) It should be registered, however, that Ruskin (292) in a 1974 research report, commented on the limitations of many research designs into Keller-type courses, limitations similar to those already indicated, in discussing the findings about programmed learning.

4.3.5.5 Summary of the Behavioural Teaching Methods

(1) Clear evidence has been presented that a number of attempts at individualising teaching have made explicit use of behavioural theory. Skinner and Homme were both shown to have been influential, the former in developing programmed instruction and the latter in applying similar concepts to the management of whole courses of study.

(2) Both approaches are of interest, in that they directly apply findings from the field of pure psychology, to the human learning process, but in both cases, the approaches appear to be most appropriately used as part of courses in the more structured fields of knowledge, in which explicit objectives are more easily defined.

(3) The research evidence was felt to be unsatisfactory for both approaches, understandably in the case of the Keller plan because of its relative youth, but possibly indicating some lack of basic potential, in the case of the more mature programmed learning approach.

(4) It may be that the longer term judgment of the Keller plan will not focus on its behavioural base, but rather on its freeing of the student teaching process and its encouragement of independence in learning. This provides a natural point at which to turn to examine other approaches to independent learning and, of the impact of educational technology on these developments.

4.3.6 Modular, Multi-Media Courses

(1) In 1969, the National Union of Students noted, in a report (293), based on the replies of 1408 students (a 72% return rate), that universities and polytechnics made very little use of teaching aids such as slide tape sequences, but that colleges of education made slightly more use of them. The period 1968 onwards was a time of rapid
development in the hardware of sound and vision and this began to be reflected in course design from about 1969 onwards. These developments were noted by Collier in 1971 (294) and gave rise to a memorandum on their implications for teacher training (295), written by the National Council for Educational Technology and sent to all area training organisations.

(2) The scale of the developments is best appreciated by a study of the newsletters of the Nuffield Group for Research and Innovation in Higher Education (296), as a result of their visits to universities in 1973 and 1974.

(3) The following examples are drawn from other sources and are intended to give a flavour of the kind of courses being developed at this time. Jepson (297) used 8mm film loops to illustrate experimental techniques in bio-chemistry, claiming they produced technical improvement. It should be noted, however, that Pearson and Jepson (298) who also used loops found that, although the loops were clearer, students still valued the live demonstration.

(4) Van Hemart (299), in a very brief literature review, described the development of a number of courses using tape and slides, but he cited no critical evaluation of such courses. Whitaker's descriptive article (300) is particularly interesting, because it gives some idea of the potential of the new media in the teaching of university classics courses.

(5) Tape recordings have been commonly used, with Linacre (301) describing an imaginative use of tape, as a back up to written lecture notes, and Stuck and Manatt (302), describing an even more imaginative use, in which students worked at an in-tray basket exercise on school law, in an audio-visual booth, and were interrupted by practical problems posed orally on headphones.

(6) It is but a short step from experiments such as these, to more ambitious innovations, using the whole range of audio-visual facilities and programmed texts. One of the earliest, and best known, is Postlethwaite's audio-tutorial laboratory (303) which established a laboratory, consisting of individual multi-media study places, equipped with the necessary biological equipment and materials. The course involved independent study sessions, general assemblies, small group assemblies and quiz sessions. The similarity with the Keller Plan type,
of course, is apparent, but without the underlying assumptions of contingency management.

(7) Brewer (304) (305), working in Australia, made a particularly noteworthy contribution to the literature, by taking up Postlethwait's approach and monitoring the development of her course over a four-year period. She modified the course from one year to the next, made no exaggerated claims for it, but appeared to produce evidence as to its effectiveness.

(8) Finally, a polytechnic course in chemistry described by Pusey (306), needs to be briefly noted, because in addition to audio-visual resources, it made use of both small group and individual games.

(9) Clearly, developments of this kind ideally need a rather different kind of room from traditional university lecture theatres. Articles by Taylor (307, 308), Cannon and Kapelis (309) reflect, at higher education level, the kind of architectural thinking, which was developed at school level a few years earlier, epitomised in the Department of Education and Science series of 'Building Bulletins'.

(10) This section has attempted to indicate the impact of the new media on teaching methods in higher education, an impact, well described in the context of school education, by Trowbridge (310) in 1974, and practised, without preaching, by the Open University since its inception.

(11) Implicit in these approaches is a claim that the teacher now has a greater range of media from which to select, in designing learning strategies. This section has briefly indicated the great interest being shown in the potential of these approaches, but, as yet, our understanding of the appropriateness of our media selections is in its infancy, although Allan (311) and Hawkridge (312) both have useful things to say on this subject. Allan made a stimulating attempt (pp 49-50) objectively to compare different media, while Hawkridge, having noted the lack of success internationally in this area, analyses in detail the contribution of Briggs (313). By way of comment, while Briggs' procedure for media selection is sound, it would appear to be as subjective as the intuitive approach used by most teachers.

4.3.7 GAMES AND SIMULATIONS

(1) "Let this first instruction be in the form of play".

Quintillian (314)

* It is worth noting that Heidt, in a recent book, notes the inappropriateness of oversimplified classifications, which ignore psychology. E.U. Heidt, Instructional Media and the Individual Learner. London: Kogan
"... the fundamental fallacy in methods of instruction lies in supposing that experience on the part of pupils may be assumed. What is here insisted upon is the necessity of an actual empirical situation, as the initiating phase of thought".

Dewey (315).

(2) There has been a growing interest in the use of games and simulations and this has led to many optimistic claims for the method. The technique has been claimed to be powerful (316); 'the most promising ... single innovation ... we have today' (317); capable of producing 'overwhelming excitement and involvement' (318). More specifically, Boocock saw its main impact as a 'group phenomenon' (319), and Beard (320) took this further, by seeing that its main advantage lay in the fact that students learned from each other.

4.3.7.1 Definitions

(1) The terms 'games' and 'simulations' present the usual problem of lack of precision in definition. Bligh (321) defines simulation as "teaching, in which a real situation is duplicated in its essential features, perhaps in the form of a game ..." which does not exactly help in distinguishing between the terms. Taylor (322) quotes a definition of simulation as 'the development and use of models for the study of the dynamics of existing or hypothesised systems', but he goes on to recognise that simulations vary in their level of abstraction from the real life system. Finally, Gibbs (323) distinguishes between the two, by defining games as an activity of competing decision makers, who achieve objectives 'within a framework of rules' and simulation as a 'dynamic representation which uses substitute ... relationships to replace their real or hypothetical counterparts'.

(2) Although they differ, there is obviously common ground between these definitions and it would appear that games can be said to be a specific type of the more general concept of simulation, whose distinguishing feature is a set of rules. All of the definitions of simulation appear to see it as an acting out of the real problem at one remove, and at varying levels of abstraction. It should, however, be noted that Bloomer (324), because of the wider reference of the term 'game', felt that the term 'simulation game' should be adopted.

4.3.7.2 A Critique of the Literature

(1) Taylor (325) provided a well classified bibliography to the social science literature on simulations and gaming, although it proved to be weighted towards business rather than educational games, as is his edited monograph, produced in collaboration with Armstrong (326). This
lack of balance was corrected by them in a publication a year later (327), to which Tansey contributed a chapter (chap. 17) on simulation techniques in teacher training, although its main emphasis was American. Tansey and Unwin (328) probably produced the key stimulus to the potential of simulation and gaming for education, in an introductory text published in 1969, and by 1971, Tansey (329) was able to edit a collection of articles, which deepened the knowledge of the applications of simulation to gaming, but revealed extremely little research into its effectiveness, and little development of a genuine rationale for using simulation.

The problems with much of the literature is that it is either partisan and uncritical, or suffers from unsatisfactory methodology. There is certainly no clear evidence from the literature as to the effectiveness of simulations, a fact noted both by Boardman (330), in a slightly uncritical review, and by Taylor (331).

Stopp (332), after a common sense look at simulations attempts a cautious assessment of their value, limiting it to the affective rather than the cognitive area. Classical experimental designs, using experimental and control groups, are not possible (333), because of the complexity of simulations and because of the problem of defining satisfactory objectives; a fact noted by Cowan (334), although he seemed to feel it was at least theoretically possible to define them. Adams, indeed, goes further (335) and attempts (pp. 11 and 100-101) to list three groups of objectives, which might be achieved by simulation, although his first group of objectives may be seen as inappropriate to the method. The three main groups are:

(i) an understanding of the Structure of Knowledge;
(ii) connecting cognitive and affective learning;
(iii) an appreciation of group dynamics.

Finally, we need to note that Jones (336) rejects any idea of objective assessment, limiting it to the subjective.

Summary

Clearly, simulation and gaming is only in its early phase of development, and therefore it would be premature to attempt early judgments. The literature describes many attempts at the methods and clearly shows that students and teachers are attracted to them. Theoretically, at least, these methods may help to achieve high order objectives, which could not be achieved by any other means, but this potential is as yet unproven. Clearly the complexity of many simulations
will mean that it will take time to establish appropriate research strategies, yet alone to arrive at informed judgments, as to their effectiveness.

(2) This infancy stage of development is reflected in the fact that a special 1976 issue of 'Programmed Learning and Educational Technology' (Vol. 13-3), devoted entirely to simulation, contained a wealth of sometimes uncritical description and very little detailed evaluation.

4.3.8 GENERAL CONCLUSIONS

(1) Drawing together the strands of this second main theme, a great deal of evidence was uncovered about the lecture and small group work, and a clear place was established for the continuation of the lecture method, although with a more restricted range of teaching objectives and of shorter duration. Small group work was shown to have potential, and to be able to achieve objectives, which could only be achieved by this method. It was noted, however, that there were many practical problems associated with small group teaching and that not enough was known about the chemistry of small groups, of size, leadership, dynamics and norms. The development of a number of teaching approaches, based on behavioural psychology, was then discussed, and their potential, particularly in the more structured fields of knowledge, was noted. Following this, courses of individualised study, which made use of the growing sophistication in technological hardware were identified, followed by a brief look at simulation and gaming.

(2) Only the lecture and small group work could claim to have a reasonable body of research behind them, while the other methods have yet to build this up. There are enormous problems of evaluation and these will be discussed in the final theme of this chapter.

(3) Viewed as a whole, the exponential growth of interest in teaching methods cannot fail but to impress. The fact that it has been concentrated into the last 10 years or so is an important point, and means that any critical appraisal of the state of the art must uncover inadequacies.

(4) Clearly there have been serious practitioners and the work of Abercrombie and Stenhouse, in the field of small group work; of Skinner, Homme and Keller, in behavioural based methods, has been particularly significant, because they have tried to establish a theoretical base for their teaching.
(5) It is not possible to achieve any final judgment about this second theme and the third theme of this chapter will indicate why.

4.4 EDUCATIONAL TECHNOLOGY

4.4.1 INTRODUCTION

(1) The third theme of this chapter will consider the literature of educational technology under two main headings, the systems approach and evaluation. The discipline of educational technology is still emerging and so any assessment must be tentative.

4.4.2 THE SYSTEMATIC MODEL

(1) The terms educational technology, the systems or systematic approach, and the objectives model, are commonly used in the literature, but there is no clear-cut distinction between them. I want to suggest that some common features were identified by Kerr (337), namely, the specification of objectives, selection of content and learning experiences, and finally evaluation. This lack of precision in these terms is undoubtedly due to their complex origins in behavioural psychology, audio-visual aids and in systems thinking.

4.4.2.1 The Behavioural Influence

(1) The underlying influence of behavioural psychology on curriculum development and evaluation can be traced in the works of Bloom (338), Tyler (339) and Popham (340) and the behavioural base is often made quite explicit:

"... the real purpose of education is ... to bring about significant changes in the students' pattern of behaviour ..."

(Tyler p. 44)

Evaluation should be 'objective', 'reliable', 'valid'

(Tyler p. 119)

(2) In terms of educational practice, this line of thought strongly influenced American curriculum development and some of the Nuffield Foundation and Schools Council curriculum development projects, and a growing number of specialists in curriculum development emerged from these projects, often seeking to professionalise their skills even further.
This was certainly one formative influence on the concept of educational technology, but parallel with it there was the growth of interest in programmed learning, again based in behavioural psychology, which was described in more detail earlier in this chapter (see 4.3.4). Many exponents of programmed learning (see 4.3.5.1, para.1) moved away from simple programmed learning systems to broader based systems, incorporating a range of teaching approaches, and, as such, were a second formative influence on educational technology (341).

4.4.2.2. The Audio-Visual Influence

(1) Parallel with this behavioural influence, there was a second influence stemming from audio-visual aids. Saettler (342) traced the growth of interest in such aids during this century (pp. 2-4), noting the impact of the second world war on its development (chap. 8) and this growth of interest was formalised in the report of the Brynmor Jones Committee on 'Audio-Visual Aids in Higher Education' (343). This committee advocated (chap.10) the setting up of a national centre for audio-visual aids and clearly was beginning to see something broader than just audio-visual aids, although it was only an embryonic technology of education.

(2) Again, there was a body of practitioners seeking to professionalise their skills even further, and they were aided by the developments in technological hardware in the mid 1960s (see 4.3.6(1)).

4.4.2.3 The 'Systems' Influence

(1) The third formative influence was rather in terms of ideas than of practitioners. Saettler (344) and Stenhouse (345) discuss the origin of 'general systems theory in science, where scientists used the theory to explain the characteristics of complex entities', which could not be explained by traditional scientific theory.

(2) Although this may have been a general influence, it is likely that a more significant one came from industry. Pfeiffer (346) and Bratten (347) both trace this back to the successes of academics in helping decision-making during the second world war. This interest in the design and management of systems mushroomed after the war and gradually made a general impact on education in the late 1960s, summed up in this OECD report (348):

"...recent thinkers have conceived educational technology as a systems approach to the learning-teaching process, centering around the optimal design, implementation and evaluation of teaching and learning" (p.37).
Towards a Definition

These complex and interacting origins can be traced in the following attempts at a definition of educational technology:

"... the development and application of systems, techniques and aids to improve the process of human learning".

"A systems approach implies a scientific study of the kind of instruction required by each learner, the time when it is needed and the appropriate design organisation and operation of a system which can achieve behavioural goals".
1968 - Saettler (350)

"A systems approach is herein defined as an attitude ... that such educational processes ... should be viewed as systems ... known by analysis and described in objective terms ... educational processes have ascertainable and measurable products ..."
1969 - Bratten (351).

I quote these at length because they are at the heart of the problem of distinguishing between educational technology, the systems approach, and the objectives model, a problem clearly shown in Richmond's reader (352) on the concept of educational technology.

For the purposes of this study, I want to suggest that the objectives model should be confined to a specific learning system, such as a programmed learning sequence; that the systems or systematic approach should be limited to an instructional system, such as a complete course, which would include a number of sub-systems for which the objectives model would be appropriate; that educational technology should refer to the academic management of total institutions, which would include a number of courses, managed by the systematic model and, within these courses, specific learning systems, managed by the objectives model.

Criticisms of Systems Thinking

A straightforward assessment of the strengths and weaknesses of the approach was made by Bligh (353) in 1975. The O E C.D itself (354) recognised that systems thinking encountered 'constraints' and 'limitations', when applied to education and suggested that it was rather a 'systems-analogous or systematic approach' (p.9). Wynne Harlen is equally critical (355), arguing that the approach is too simplified for many practising teachers, a point echoed by Hogben (356) and by Sockett (357):
"... the objectives model attempts to simplify, in the interests of the 'rational', what is irredeemably complex ..." (p.87).

(2) Stenhouse (358) provides an extended discussion of the systematic model, outlining it in some detail (chapter 5), and attempting a detailed critique (chapter 6). He concludes that its strength is as an analytic tool, for 'identifying problems' and 'monitoring solutions' (p.69), but that the model does not help in specifying objectives, selecting content or teaching methods. He perceptively sees the model as being concerned with 'value rather than values' (p.69).

(3) In arriving at a judgment about the model, this architectural analogy, drawn by Calfee and Floyd (359) between the design and evaluation of a curriculum package and that of an auditorium, may be helpful:

"... no theory exists which can predict the acoustical properties of the auditorium ... There are too many variables. Therefore the architect mixes bits ... of engineering theory and practice with large dollops of intuition ... Most often the end result does not work ... and so the patching up process begins ... The goal is no longer an optimal acoustical environment, but one that meets minimum specifications" (p.185).

(4) The model, then, is not a perfect one, merely an aid to curriculum development. It has certainly influenced the literature, although it has been preached more than it has been practised. It can, however, be challenged for failing to consider the learner for, as Pervin concluded (360):

"... individual and environment (inter-personal and non-interpersonal) are in a constant state of mutually influencing one another" (p.65).

(5) Sockett (361), West (362) and the London University Teaching Methods Unit (363) can all be seen to be responding to this, seeing a place for the objectives model set alongside an awareness of this broader context. My main thesis for this study, to be advanced in the next two chapters, will extend this line of thought.

(6) It is now necessary to turn from this broad consideration of the systems approach to one specific aspect of it, namely, evaluation.

4.4.3 EVALUATION

4.4.3.1 Introduction

(1) All models of curriculum development attach considerable importance to evaluation. In 1967, Scriven (364) distinguished between 'formative' and 'summative' evaluation, 'formative' evaluation taking place during, and assisting with course development, 'summative' evaluation, involving end-of-course judgment.
Most of the literature, to be discussed here, represents summative evaluation, but formative evaluation has had many advocates (365). The advantage of 'formative' evaluation is that it allows for development and modification of courses and it was for this reason that Light and Smith (366) favoured it for the development of national programmes of curriculum development.

We need to note, however, a word of warning given by Eraut (367):

"... development testing involves such a strong interaction between tester and student, that major difficulties in student motivation may remain undetected" (p.240).

The five year, longitudinal studies by Mansell (368), of a technicians' course, and by O'Connell et. al. (369), of a self-service laboratory course, remain some of the few examples of long term formative evaluations, in the literature, most evaluations being short term and summative.

The Oxford English Dictionary definition of the term 'evaluation' is:

"... the action of appraising or valuing ... determining the value of ..."

This definition would appear to be emphasising the process rather than any conclusions; to be emphasising 'formative' rather than 'summative' evaluation. Philosophically, there may be a need to clarify the meaning of the concept of 'evaluation'. Final judgment is only possible if there are agreed values against which to measure the evaluation. The values in curriculum development are so much more relative, that final judgment may not be achievable. If this is the case, much of the one-off evaluation of teaching methods, found in the literature, would be invalidated.

4.4.3.2 The Present State of Play in Evaluation

Writing in 1967, Oxtoby (370) felt that 15% of total research effort in Education was being given to the evaluation of teaching methods, but a conference run by the University of London Institute of Education in 1968 (371) on innovation in university teaching methods, highlighted, among other things, the conflict there is between innovation and good evaluation. This conflict may be best illustrated in this quotation by Ausubel writing some years earlier (372).

"... most of the articles commonly cited in the literature as reporting results supportive of discovery techniques, actually report no research findings whatsoever, consisting mainly of theoretical discussion, assertion and conjecture; descriptions of existing programmes utilising discovery methods and enthusiastic but wholly subjective testimonials regarding the efficacy of discovery approaches" (p.165).
Even a brief look into the literature would provide evidence of these exaggerated claims made by enthusiastic innovators.

(2) Research studies, comparing the effectiveness of teaching methods, are no new thing and Dubin and Taveggia, examining 91 such studies carried out between 1924 and 1965 (373), found no measurable difference between the methods, in terms of final examination results. McGrath and Altman (374) looked at several hundred research studies into small group research (only some of the studies were, of course, concerned strictly with teaching method) and examined 250 of them in some detail in an attempt to classify them. They found little evidence of real replication or established conclusions, a finding agreed with by Nuttall and Snook (375), at the end of a major literature review, which they supported by reference to a parallel review completed ten years previously.

(3) It is not difficult to ascertain the reason for this unsatisfactory state of affairs, for it lies partly in the underlying paradigm of evaluation, but also in a lack of rigour in the way the paradigm has been used.

(4) Marsh, for example (376), reviewing twenty-eight research reports on inquiry teaching, found that, although statistically significant results were claimed, many studies contained serious methodological deficiencies, such as unsuitable research instruments, unsatisfactory comparison groups, small sample size, poor research design.

(5) This question of claimed statistical significance is explored to some depth by Derrick (377), in an excellent and provocative article. He distinguishes between statistical significance and meaningful significance, arguing that most research reports imply the latter meaning, when they can only really claim the former meaning. He goes on to deplore the 'disturbing' and 'slovenly tolerance' for 'one-off experiment' (p.38).

4.4.3.3 Paradigms of Evaluation

(1) The theory stems from work in agricultural botany, where much of the statistical theory of samples and control was worked out and Lewis's book, 'Experimental Design in Education' (378) could be said basically to work out this approach in educational terms. Likewise, Curr(379) and Cox (380), in separate contributions to a conference on university teaching methods in 1968, draw equally heavily on this approach, Curr in talking about the use of the Latin Square Design for control groups, and Cox in talking more generally about experimental design. It can be argued that there is a considerable gap between this kind of theory and the reality
of the teaching situation. It is a serious gap and raises the fundamental question as to whether techniques appropriate for crop research can be realistically used in education.

(2) Underneath this, there may be a more fundamental challenge, for in an excellent article, Guttentag (381) discusses the attempt in evaluation studies, to model them on the classical scientific research paradigm and she identifies two key differences between the scientist and the evaluator. Firstly the scientist attempts to be value-free; the evaluator has usually made a judgment of the worthwhileness of some activity, and secondly the scientist can exert rigorous control of variables, whereas the evaluator has only the minimum of control of his variables. She goes on to suggest that the ecological model, used by the social psychologist, may be a more appropriate one for the evaluator, because it is concerned with measuring outcomes "not divorced from the social and situational context" (p.87).

(3) Hills (382) and Entwistle (383) both indicate the limitations of the paradigm; when applied to understanding human behaviour, but whereas Guttentag was concerned with research methodology, Entwistle is concerned with the certainty of the findings. He points out that, although extremely objective, even science has the 'Heisenberg uncertainty' principle and that, given this, education research needs a 'triple-uncertainty' principle, although Bauernfeind and Olson (384) might be seen as questioning this Hawthorne Effect.

(4) Parlett (385) explicitly challenges the agricultural-botany approach to evaluation and suggests the social anthropological paradigm as an alternative, with the investigator 'living in' the educational institution, using all available techniques to arrive at an understanding of what is happening.

4.4.3.4 A Broader Approach

(1) It is now necessary to move on from the theory behind the research to consider examples in the literature of a desire for a broader based research approach.

(2) This desire was partly caused by the inconclusive nature of the type of findings discussed above, and partly by a growing awareness of the complexity of variables involved in any teaching situation, and the interactions between such variables.

(3) Feldman (386) recognises this, in discussing the great problem of measuring change over a period of time, when the interaction between variables is constantly changing; Mackenzie et al (387) admit it in their comprehensive book, when they say that "it is not possible to control
sufficient variables for enough time, to permit more than general conclusions to emerge; "George (388) recognises it, in arguing against global comparisons of teaching methods, in favour of evaluation of the separate contributory variables to such methods.

(4) Rowland, writing in 1970 (389) in a somewhat encyclopaedic review of selected literature, indicates the need for a broad-based look at the teaching process, taking into account the total institutional context in which the teaching takes place. Similar arguments were also made in Combs (390) arguing for humanistic evaluation; Trent and Cohen (391), Parlett and Hamilton (392), MacDonald and Parlett (393), who develop the argument at length, and Wittrock (394), who usefully distinguishes three separate elements, the environment of learning, the intellectual and social processes of the learners and the learning itself. All of these studies argue the need for the evaluation of teaching to take place in a broader context and replicate the arguments put forward earlier in this chapter (see 4.4.2.5 paras. 4 and 5).

4.4.3.5 Conclusion

(1) Educational technology has clearly been influential as a concept, but its limitations are now becoming apparent. Firstly its strong behavioural base is a weakness, if teaching is regarded as an art rather than as a science. Secondly, the complexity of the learning environment makes it difficult to apply systems thinking in any precise way to curriculum development. Finally, the systems model is too one-sided, since it fails to focus closely enough on the learner, and there is, therefore, a need to develop a more inclusive model, which will include the course development and the learner's reaction to the course (see pp. 175 to 178).

(2) With regard to evaluation, although much work has been carried out on the total institutional environment within which teaching innovations are tried, most research into teaching methods this century has tried to treat the methods in isolation from the environment in which they take place. Since 1970, there has been dissatisfaction with this approach and a growing awareness of the need for a broader based attack on the problem.

(3) It can be argued that this field of study is not sufficiently developed to attempt anything other than interim evaluation. It may be that we should concentrate more on observation and classification of the learning process, attempting to identify agreed sub-systems which are constantly found to be present across institutions, sub-systems such as the under-achieving student's response to teaching method, or student work patterns on particular courses; that we should concentrate on developing
methodologies and research instruments, to investigate these sub-systems, and that the literature should be used to define these sub-systems, in order to refine research methodology, so that the kind of unified body of knowledge, at present lacking, can emerge.

Having said this, however, we need to bear in mind Cronbach and Snow's (395) pessimistic conclusion, after a large scale review of research. In talking of the idea that some teaching methods are better for some students than for others, they say:

"There are no solidly established aptitude-treatment interaction relations, even on a laboratory scale, and no real sign of any hypothesis ready for application and development."

In short, there has been a growing awareness of the limitations of the traditional paradigms of evaluation and a seeking for more facilitating ones. There is no reason to suppose that these have yet been found, although the greater breadth of Parlett's model is to be welcomed. Possibly the most important point to be made here has been to emphasise evaluation as a process word, rather than an achievement word.

To conclude, Webster (396), in talking about sociological research, makes a point which is relevant to educational research as well:

"... much of the worth of the sociological enterprise is reflected only in the changed level of awareness of the researcher himself... The 'facts' are often incidental". (p. 20)

4.5 CONCLUDING COMMENTS

I have tried, in this review, to indicate three main themes that have influenced me in the development and monitoring of these innovatory courses.

I came into the College at a time when interest in curriculum development was growing and when the impact of the new media was just beginning to be felt. It was natural, as a philosopher in a college of education, that I should become interested in the nature of student learning and its implications for teaching methods, both in schools and in the College course.

I felt that to say, as Hills did (397) that "It is not the teaching method, but the student's learning methods which are important ..." is true, but does not go far enough, as is equally the case with Joyce's distinction between student and teachers' styles (398). These are part of the problem, but I felt that Broudy (399) identified a further dimension, when he said:
"When the pupil fails to learn, one can suspect that a discrepancy between the abstraction levels of the task and the learner is responsible. To restore congruity of abstractive levels is the strategy of teaching method ..." (Page 61)

(4) I have tried in the first main theme of this chapter, to take a broad based look at the nature of student learning, tracing the complex inter-relationship between the concrete and the abstract in the building up of concepts; looking at what is meant by higher levels of understanding; looking at individual differences in student learning and looking at their implications for teaching methods.

(5) As a result of this kind of reading, I felt as Oeser (400) did, when discussing the teaching of psychology, namely, that the theory of education should be taught by methods which themselves illuminate psychological principles. I was therefore concerned to develop courses in the theory of education, which allowed students if they wished, to start from the concrete and move to the abstract; which met differences in learning styles; which demanded application of concepts, as well as knowledge of them, and which encouraged high level thought.

(6) Parallel with this reading about the nature of learning, the second main theme of this chapter has opened up the developments in teaching methods in higher education, but I was equally aware of parallel developments at the school level.

(7) The problem, equally recognised by the Department of Education and Science (401), was how to communicate to teachers new techniques and methods of teaching. The traditional way in colleges was to do this by talking about these methods, whereas I tried to achieve it by giving students experience of them, in their own learning.

(8) This second theme highlighted the growing emphasis on achieving some individualisation in teaching method. It was shown, however, that this interest stemmed largely from dissatisfaction with the effectiveness of traditional methods rather than from an understanding of the way students learn. Finally, the theme revealed the impact of the new educational hardware of cassette recorder, loop and slide projectors, teaching machines and television, on the development of independent learning.

(9) Looking at the second theme in more detail, I moved away from the lecture method, in developing the innovatory courses, because I did not feel it would help in achieving the particular objectives I wanted. I tried very consciously in both courses, to make use of small group learning,
involving leaderless and tutor led groups, but experienced many of the practical problems highlighted in the literature. In attempting an individualised approach, I tried to provide flexibility of content choice; to allow for individual differences in learning style; to provide for open ended response patterns from students, all of which were discussed in this review. I came up against similar problems to those highlighted in this chapter, the fact that students needed to be trained for independent learning; the problem of conflict between the courses, taught in independent mode, and the more structured courses students experienced at the same time; the problem of successfully monitoring student learning in individual mode situations.

(10) I considered making use of the behavioural based methods, discussed in this theme, but rejected them, because they did not seem to be completely appropriate to the broad area of content I was concerned with, but I did attempt in the courses to provide a structured path through at least part of the course, making use of cassette and slide tape self-instructional sequencies. Finally, I made extensive use of simulation, and experienced similar problems in achieving an effective evaluation.

(11) This theme opened up the range of choice of teaching methods now being used but, as MacKenzie et al. said(402):

"... it is at least as likely that one method will be better for some objectives and worse for others as it is that a single method will prove best for all possible objectives." (p.146).

It is likely, therefore, that there is a continuing place for all teaching methods, the traditional and the new, but recognising more critically their strengths and weaknesses. Sloman (403), in a speech to an international conference of university directors, rightly said:

"There was no evidence to suggest that any single teaching method was the right one. Old methods were still valid, though they could be ... improved ..."

(12) The third theme of this chapter indicated the inconclusive nature of educational technology and this is reflected in Sloman's speech, just referred to. It is easy for Bloom (404) to say:

"New curricula are not acts of faith - they represent new hypotheses, which should be empirically tested before they become an accepted part of the educational programme."

but it is another thing to achieve it. The third theme highlighted the lack of any proven evaluation paradigm and, indeed, argued that the state of the art was such as to make such a paradigm unlikely.
(13) The systems approach was discussed in detail and its limitations identified. This present study will submit the approach to a critical appraisal, with particular reference to the longitudinal development of the two innovatory courses.

(14) Time and again, in reviewing the different teaching methods, discussed in the second theme, the lack of conclusive research was highlighted, the lack of replication, the weakness of methodology, the smallness of samples, the uncritical or polemic conclusions.

(15) I was unable to find a completely acceptable research model when I started this research in 1971, having instinctively rejected the scientific paradigm, and I welcomed the Parlett paradigm when it appeared in 1973, as fitting my needs more closely. I would not feel, however, that this paradigm is yet fully worked out and is certainly not proven.

(16) A final judgment on these three themes would be that they encapsulate a period of significant growth in higher education and a time for uncritical and superficial comment on teaching method. All three themes are as yet incomplete, for they record the first stage of growth and the ensuing years will see their gradual elaboration.
REFERENCES TO CHAPTER FOUR


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PART THREE

THE INNOVATORY COURSES
INTRODUCTION TO PART THREE AND CENTRAL THESIS

(1) Part One of this study set the scene and Part Two provided a literature base for the two innovatory courses, which will now be discussed in detail, but which were outlined in Chapter One (1.5.1 and 1.5.2).

(2) The literature review (4.4) took an extended look at educational technology, the systematic approach and the objectives model, indicating the overlap in the meaning of these terms (4.4.2(1)) and offering a provisional conceptual distinction (4.4.2.4(2, 3)) between them. It also noted (4.4.2.5) that many critics had expressed reservations about systematic thinking, regarding it as somewhat simplistic. It concluded by drawing attention (4.4.3.4) to the growing body of literature, which argued for a more inclusive model which, as well as considering the course itself, would take note of the response of the learner, and the social context in which it was taught, including the hidden curriculum.

(3) The hidden curriculum has been described by Snyder (1), Sockett (2), Stenhouse (3) and Whitty and Young (4). It is a diffuse concept, partly concerned with the general institutional ethos and norms in which courses are taught, partly with the 'hidden agenda' behind the surface courses, and partly with the survival strategies used by some students to make the formal demands of their course realistically manageable. Most importantly, the concept distinguishes between the formal and informal curriculum of any institution.

(4) These two innovatory courses were developed between 1969 and 1977 parallel with this growing demand in the literature for a broader based technology of education. As stated in Chapter One (1.1) they were initially developed in the light of the systematic model but, as the years have gone by, I have attempted to evolve a more sophisticated conceptual scheme for developing these courses.

(5) Diagram (5.1) shows a typical model of the curriculum development process, produced in 1974 by Rowntree (5). This is certainly more sophisticated than earlier systematic models such as, for example, the one used by the Nuffield Foundation's Resources for Learning Project in 1967 (6). It acknowledges the outside constraints surrounding the curriculum development, but fails completely to give any understanding of the nature of the interaction. Although the diagram provides a useful description of some aspects of the curriculum development process, it is probably pretentious to call it a model.
Diagram 5.1  THE SYSTEMATIC MODEL

(6) Diagram (5.2) is my own attempt to develop a more useful tool to understand this process, although it would be premature to call it a model. The diagram dynamically shows in the three main cylinders the innovatory course (A), the other courses followed by the students (B) and the main external and internal constraints which affected their development (C) over successive years. Within the first two cylinders will be found a version of the systematic approach or model showing the process of design, development and modification of courses over a number of years, although it is recognised in cylinder 'B' that not all courses will be systematically developed.

(7) The third cylinder has two zones, an outer one which contains the outside constraints affecting the College, such as the job market, government policy, professional issues and the literature of education, and an inner one, which contains the kind of perspectives discussed in Part One of this study: personnel, including students, academic and ancillary staff, curriculum, logistics, social and academic processes, facilities and norms. All of these constraints in the inner zone are shown to be interacting with one another.

(8) The three cylinders are shown to be mutually affecting each other (a, b, c) and also to be interacting with the inner triangle of myself, as course designer, the rest of the staff and the students (d, e, f).
Diagram 5.2

A DYNAMIC SYSTEMATIC EXPLANATION
OF THE COURSE DEVELOPMENT PROCESS

Empirical or Intuitive Design

Objectives

Improve

Design

Evaluation

(c)

B-Other Courses

C-Constraints

HIDDEN CURRICULUM

DESIGNER

STUDENTS

(a)

(b)

(c)

(d)

(e)

(f)

GOVERNMENT

PERSONNEL

LOGISTICS

CURRICULUM

CONSTRUCTION

PATH

STAFF

METHODS

NORMS

YEAR 1

YEAR 2

YEAR 3

YEAR 4

YEAR 5

YEAR 6

etc.

Innovatory Course

YEAR 1

YEAR 2

YEAR 3

YEAR 4

YEAR 5

YEAR 6

etc.

A-Innovatory Course

OBJECTIVES

Improve

Design

Evaluation

(a)

(b)

(c)

(d)

(e)

(f)

(g)
This triangle is also in a state of interaction (g, h, i). Central to the whole diagram is the hidden curriculum which influences and, in turn, is influenced by all of the other parts of the diagram. This dynamic interaction takes place while a course is actually running, but also across the years (w, x, y).

(9) I intend in the next two chapters to discuss the development and modification of these two courses over the years, and to attempt a critical appraisal of the usefulness or otherwise of these two diagrams in their development and modification.
CHAPTER FIVE

THE SIMULATION EXERCISE
CHAPTER 5: THE SIMULATION EXERCISE

5.1 INTRODUCTION

(1) This chapter will describe the development of a major simulation exercise in the administration of education, in the Spring Term of the second year of the students' course (see Table (1.1)).

(2) This simulation used an extremely innovatory teaching method, and was developed, as indicated in the introduction to this study, in response to a decision by the College education department to teach the theory of education course in years two and three of the students' course, in the spirit of the experience based foundation course.

(3) The growth of the exercise from its earliest beginnings in 1970 to its final run in 1974 will be traced, focusing on its evolutionary change. This longitudinal study will highlight the problems of evaluation, particularly when a course is also judged in relation to a range of other courses taken by the same students. Finally, an attempt will be made to make an overall judgment about the effectiveness of the exercise.

Diagram 5.3
Diagram (5.3) very clearly shows the way one year group (Appendix U) viewed the range of different teaching methods used on the theory of education course, when set in a three dimensional matrix. To explain this matrix, the lecture (1) was seen to be passive but slightly good with some element of complexity; tutor-led discussions (3) compared with student-led discussions (2) were not so active, but more complex. The simulation (6) was grouped with individual (4) and small group work (5), together with student discussions (2), in semantic space, although the latter two were not seen to be as complex.

5.2 THE FIRST ATTEMPTS AT SIMULATION

(1) The simulation exercise started from small beginnings in 1969, when I introduced a lecture on the economics of education into the part of the theory of education course devoted to the administration of education. In 1970, this lecture was repeated but after it the year group of students divided into their seminar groups of twelve to fourteen students. They were given fifteen minutes to brief one of their members as to how to vote at a meeting of a mock education committee, on a motion to close a small village school, for economic reasons. The representatives of each seminar group then gathered on the stage and cast their votes.

(2) The purpose of this decision making task was to give students the opportunity to apply the economic concepts opened up in the lecture, and this teaching method was applying the kind of reading discussed in (4.2.5.1 (11)). The initial reaction was a complete rejection by the whole year of any idea of applying concepts such as cost effectiveness to education.

(3) This rejection was mainly attitudinal, and happened because this was a first attempt to introduce serious thinking about the economics of education into any College course. The description of the College, given in an earlier chapter, was of a college steeped in the child-centred tradition; of a college which saw itself as a caring and creative community (see 2.2(6)). I felt that this simple economic decision-making task was instinctively seen as threatening to this tradition, by both the students and the seminar tutors.

(4) In the following year, 1971, more time was given to this economic aspect and much of the original lecture material was transferred to a slide tape sequence, which students were required to study independently. In addition, they were required to work in small groups, again independently, at a short work sheet which gave them simple practical

* See 5.5.3(13).
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
problems associated with economic concepts such as 'quality of labour', 'labour intensive', 'goods', 'rate of return'. The answers to the questions on the work sheet were discussed on the slide tape sequence. For students wanting greater depth, a small collection of articles on the economics of education was prepared, together with a short book list.

(5) They were given two weeks to work through the study unit, and then came to the Hall for the one structured meeting of the course. They were shown a short slide tape sequence (see Plate 5A), prepared by me, which told them that they were members of the County Education Committee, about to attend a meeting to decide on the closure of a number of small village schools. The sequence took them back in time to a conversation they had had with the headmaster of a small Norfolk village school, who had found ways to rationalise the problem of small schools by sharing resources with two or three neighbouring ones. They were then asked the question:

"...... as you go into the Council Chamber, how will you vote?"

(6) As in the previous year, the seminar groups, this time each representing a local parish council, again briefed a representative to attend the full meeting, which duly took place on the stage.

(7) The general reaction was better than in the previous year, with the down-to-earth pragmatism of the Norfolk head teacher, on the slide tape sequence, helping students to come to terms with the economic concepts. My own seminar group reacted well, and informal discussion with other students and seminar tutors was also encouraging, with the result that I was beginning to see the possibility of developing a full-scale simulation exercise, in the administration of education.

5.3 THE 1972 EXERCISE

5.3.1 PREPARATION

(1) Shortly after the lecture, in about March 1971, the BBC radio serial "The Archers" concerned itself with a threat to close the village school at 'Ambridge'. This serial was taped over a period of several months and all the scenes, concerned with the fight to save the school, were edited out - some thirty minutes worth in all. In the summer of 1971, I explored with the BBC the possibility of involving students in the actual broadcast plot of "The Archers", but this, although explored in some detail, was finally abandoned, because it was not possible to tailor my requirements to those of the BBC. The BBC did, however, provide good photographs, which were used in the displays, which will be
described later (see 5.3.2(4)).

(2) In the autumn term of 1971, a meeting was held with the staff team to discuss the possibility of a more extended simulation exercise and the following were suggested as key objectives:

(i) To enable students actively to explore certain economic concepts and their attitudes to them, by applying these concepts in a simulated situation.

(ii) To give students an experience of a simulation exercise and the opportunity to discuss its possibilities in education.

(iii) To give students the chance to practise the technique of role play.

(iv) To face students with self-instructional teaching materials, in particular, the slide tape sequence.

(3) In retrospect, it is interesting to note how imprecise the objectives were at this point.

(4) It was suggested that in week one the students should complete the work sheet, as they had done in 1971, and listen to the edited tape recording of "The Archers", described above. That in week two, they would be required to role play, in seminar groups, the members of the village community threatened with the closure of the village school. It was suggested that in the third week of the course, they should have the opportunity to discuss the problem of uneconomic small village schools with local school managers and educational administrators while, at the same time, taking the role play further in their seminar groups. Finally, it was suggested that suitably briefed representatives from these groups should take part in a final mock council meeting, to be held in the Council Chamber at County Hall, Chichester, inviting the Chairman of the West Sussex Education Committee to chair the meeting, and making use of formal committee procedures.

(5) It is to the credit of the staff team that they gave their blessing to the initial idea and let me go ahead with the detailed planning, although there were many reservations about the approach.

(6) This detailed planning consisted of making contact with a number of officials of the West Sussex County Council Education Department, Treasurer's Department and Legal Department to get a clear picture of the way decisions of this kind would be made in practice, and this even involved attending meetings of the Education Committee and the County Council in order to explore decision-making and committee procedures. Parallel with this, contact was made with the local rural and urban district councils in order to ascertain their position in the local democratic process.
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
It was then possible to get down to the detailed planning of the simulation. First of all, a file (see Plate (5B) and Appendix FF) of correspondence, internal county council reports and memoranda, newspaper editorials and pressure group posters based on "The Archers" tape recording, was prepared. The final item in this file was a county council report, recommending the closure of three of the schools in Ambridge and its surrounding villages, and the enlargement of the fourth one. Although the students were not aware of it, this report was, in fact, a lecture in a disguised form, because it argued, in some detail, the educational and economic advantages and disadvantages of small two-teacher village schools, compared with larger schools.

The initial meeting with seminar tutors had suggested that it would be essential to provide a detailed information booklet, to back up the exercise, and such a booklet was prepared (see Appendix CC for the 1974 version of this booklet).

As a result of the detailed planning, a set of objectives (Table 5.1) gradually emerged, but only those indicated by an asterisk were actually made explicit to students in their course booklet (see Appendix CC3). A number of objectives were not introduced until the 1973 course, and these are noted in brackets. A word of explanation is needed about this large list. The exercise was conceived as essentially open-ended, and a large number of 'starters' were provided within it to aid the achievement of particular objectives by some students. Only a few were seen to be of general relevance to most students but, in retrospect, it is felt that these objectives might have been much more explicit. It is clear that (5.3.5.1(2)) precise definition of objectives is not always simple.

The course booklet set out (Appendix CC4-6) diagrammatically the network of formal and informal committees and pressure groups, indicating the links between these groups and the paths decision-making would follow. It described, in some detail (Appendix CC7-9) the committee structure of the county council and gave a basic committee procedure for all meetings held during the exercise. Students were told (Appendix CC9) that, during the exercise, they could consider:-

(i) Organising petitions.
(ii) Writing reports for committees.
(iii) Writing letters of protest to these committees.
(iv) Writing letters of protest to the press.
(v) Forming pressure groups.
(vi) Organising protest meetings.
(vii) Lobbying and briefing members of other committees.

* See Appendix DD5 to DD7
### The Course Objectives

**Objective Not Achieved**  
**Objective Partially Achieved**  
**Objective Achieved**

In the last three columns, references in brackets relate to particular questions in Appendices B, C and F. The results are displayed diagrammatically in Diagrams 5.4, 5.6 and 5.12.

#### Table 5.1

<table>
<thead>
<tr>
<th>(I)</th>
<th>(II)</th>
<th>(III)</th>
<th>(IV)</th>
<th>(V)</th>
<th>(VI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>To know the meaning of the economic concepts: cost effectiveness, rate of return, labour intensiveness, economic goods.</td>
<td>Slide tape sequence and economic study unit.</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>A3</td>
<td>To know something of the structure of local government.</td>
<td>Course booklet (see Appendix C06 to C08)</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>A4</td>
<td>To know something of the county council decision-making procedure.</td>
<td>Booklet 'Hyledale Reorganisation'. (See 5.4.1(11)).</td>
<td>**</td>
<td>(B5)</td>
<td>(C7)</td>
</tr>
<tr>
<td>A5</td>
<td>To know basic committee procedure.</td>
<td>Course booklet and booklet 'Standing Orders' (see C05 and C013).</td>
<td>**</td>
<td>**</td>
<td>(G1, 7)</td>
</tr>
<tr>
<td>A6</td>
<td>To develop an awareness of the social geography of school catchment areas.</td>
<td>Gazetteer of the district and Parish Display Notice Boards (see C010 to C012 and 5.4.1(8, 9)).</td>
<td>***</td>
<td>***</td>
<td>**</td>
</tr>
<tr>
<td>A7</td>
<td>To know something of the meaning of democratic representation.</td>
<td>See Appendix C09(3).</td>
<td>**</td>
<td>(B20)</td>
<td>(C8)</td>
</tr>
<tr>
<td>A8</td>
<td>To be acquainted with some techniques used in simulation.</td>
<td>The Ambridge File, the exercise correspondence file (see 5.3.4(7), 5.3.5(11)).</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>A9</td>
<td>To apply some of the economic concepts to the problems posed in the exercise.</td>
<td>The school reorganisation proposals (see 5.3.1(7), 5.4.1(11)).</td>
<td>**</td>
<td>(B22)</td>
<td>(C10, 11)</td>
</tr>
<tr>
<td>A10</td>
<td>To be able to identify implications</td>
<td>-</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>B1</td>
<td>AFFECTIVE OBJECTIVES</td>
<td>'STARTERS'</td>
<td>1972</td>
<td>1973</td>
<td>1974</td>
</tr>
<tr>
<td>B2</td>
<td>To develop self-confidence</td>
<td>Opportunities for leadership; opportunities for individual and small group strategies.</td>
<td>**</td>
<td>(B23)</td>
<td>(C1, 3)</td>
</tr>
<tr>
<td>B3</td>
<td>To develop powers of personal initiative.</td>
<td>Individual role definitions.</td>
<td>**</td>
<td>**</td>
<td>(C4)</td>
</tr>
<tr>
<td>B4</td>
<td>To experience leadership of a group</td>
<td>-</td>
<td>**</td>
<td>**</td>
<td>(F3)</td>
</tr>
<tr>
<td>B5</td>
<td>To explore group dynamics and group responsibility.</td>
<td>Within the small group.</td>
<td>**</td>
<td>**</td>
<td>(F5)</td>
</tr>
<tr>
<td>B6</td>
<td>To experience, at first hand, a simulation exercise.</td>
<td>-</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>B7</td>
<td>To provide an experience of role play.</td>
<td>Personal 'characters' as shown on electoral register (see 5.3.2(1)).</td>
<td>**</td>
<td>(B17)</td>
<td>(C6)</td>
</tr>
<tr>
<td>B8</td>
<td>To have experience of making educational decisions.</td>
<td>Final County Council meeting.</td>
<td>**</td>
<td>**</td>
<td>***</td>
</tr>
<tr>
<td>B9</td>
<td>To explore attitudes towards the beaucratic decision-making process.</td>
<td>The exercise correspondence file (see 5.3.2(8), 5.3.3(5)).</td>
<td>**</td>
<td>***</td>
<td>***</td>
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<tr>
<td>B10</td>
<td>To explore attitudes towards democracy.</td>
<td>The final decisions made in the exercise.</td>
<td>**</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>B11</td>
<td>To explore attitudes towards authority</td>
<td>The letter exchange to and from County Hall (see 5.3.2(5)).</td>
<td>**</td>
<td>**</td>
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</tr>
<tr>
<td>B12</td>
<td>To explore attitudes towards educational statistics.</td>
<td>The 'school population' booklet; the 'Revenue Budget' and 'Forward Capital Programme' booklets (see Appendix C012, 13).</td>
<td>**</td>
<td>**</td>
<td>(F9)</td>
</tr>
<tr>
<td>B13</td>
<td>To explore attitudes towards the use of economic concepts, such as cost-effectiveness in educational decision-making.</td>
<td>The school reorganisation proposals (see 5.3.1(7), 5.4.1(11)).</td>
<td>**</td>
<td>(C10)</td>
<td>(F11)</td>
</tr>
<tr>
<td>B14</td>
<td>To have experience of making educational decisions.</td>
<td>The meetings of the political parties in the exercise (see 5.4.2(2)).</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>B15</td>
<td>To develop a concern with values in education.</td>
<td>The role of Church Schools; the school and the community; the comprehensive plans.</td>
<td>***</td>
<td>(C14)</td>
<td>***</td>
</tr>
<tr>
<td>C</td>
<td>SKILL OBJECTIVES</td>
<td>&quot;STARTERS&quot;</td>
<td>1972</td>
<td>1973</td>
<td>1974</td>
</tr>
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</tr>
<tr>
<td>C1</td>
<td>To write committee minutes</td>
<td>-</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>C2</td>
<td>To acquire skills in operating pressure groups</td>
<td>-</td>
<td>**</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>D</td>
<td>PROFESSIONAL COGNITIVE OBJECTIVES</td>
<td>&quot;STARTERS&quot;</td>
<td>1972</td>
<td>1973</td>
<td>1974</td>
</tr>
<tr>
<td>D1</td>
<td>To know something of the legal processes involved in reorganising schools.</td>
<td>The 'Hoyledale Reorganisation Proposal' booklet; the 'Section 13' booklet (see 5.4.1(11)), Appendix CC13.</td>
<td>*</td>
<td>(C10f)</td>
<td>**</td>
</tr>
<tr>
<td>D2</td>
<td>To know something of the school building programme.</td>
<td>The 'Forward Capital Programme' booklet (see Appendix CC15).</td>
<td>*</td>
<td>(C12e)</td>
<td>**</td>
</tr>
<tr>
<td>D3</td>
<td>To know something of the role of the permanent officers, advisers and administrative assistants in the Education Department of the County Council.</td>
<td>Course information booklet (see Appendix CC6).</td>
<td>**</td>
<td>(C7h)</td>
<td>**</td>
</tr>
<tr>
<td>D4</td>
<td>To know something of the place of statistics in educational decision-making.</td>
<td>The reorganisation proposals and school population forecasts (see Appendix CC12, 15).</td>
<td>**</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>D5</td>
<td>To know something of representation, nomination and co-option of membership of the education committee and school management committees.</td>
<td>The electoral registers (see 5.3.2(1)).</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>D6</td>
<td>To consider the aims of primary education.</td>
<td>The reorganisation proposals (see 5.3.1(7), 5.4.1(11)).</td>
<td>***</td>
<td>(C14)</td>
<td>***</td>
</tr>
<tr>
<td>D7</td>
<td>To explore the meaning of comprehensiveness.</td>
<td>The reorganisation proposals (see 5.3.1(7), 5.4.1(11)).</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>D8</td>
<td>To explore the question of viable school size.</td>
<td>The school population booklet; exercise discussion documents.</td>
<td>***</td>
<td>(C12a)</td>
<td>***</td>
</tr>
<tr>
<td>D9</td>
<td>To make use of existing school buildings in any reorganisation proposal.</td>
<td>'The School Population' booklet (see Appendix CC12).</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>D10</td>
<td>To understand something of the place of the school in the community.</td>
<td>The local newspapers and radio (see Appendix CC9(3f), 5.4.2(9)).</td>
<td>***</td>
<td>(C9a) (Table 5.2)</td>
<td>***</td>
</tr>
<tr>
<td>D</td>
<td>PROFESSIONAL AFFECTIVE OBJECTIVES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D11</td>
<td>To explore attitudes towards single sex schools.</td>
<td>The Hoyledale reorganisation proposal (see 5.4.1(11)).</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>D12</td>
<td>To explore attitudes towards the role of the church in education.</td>
<td>The proposal to close the Netherbourne C. of E. School.</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>D13</td>
<td>To experience working in an 'open-plan' teaching situation (1973 only).</td>
<td>-</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>D14</td>
<td>To experience working at self-instructional study units.</td>
<td>The Archers file; the economics slide tape study unit (see 5.3.2(1)).</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>D</td>
<td>PROFESSIONAL SKILL OBJECTIVES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D15</td>
<td>To be able to produce a radio tape recording.</td>
<td>Radio Worcestershire (see 5.4.2(9)).</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>D16</td>
<td>To produce a mock newspaper.</td>
<td>'Hoyledale Advertiser' and 'Borchester Echo' (see 5.4.2(9)).</td>
<td>***</td>
<td>***</td>
<td>(Table 5.2)</td>
</tr>
<tr>
<td>D17</td>
<td>To be able to operate a slide tape sequence.</td>
<td>Economics study unit (see 5.2(4)).</td>
<td>***</td>
<td>***</td>
<td>***</td>
</tr>
</tbody>
</table>

(11) These strategies were all slanted towards rejection, rather than support, because the exercise was essentially conceived as a conflict between County Hall and the local inhabitants in order to give impetus to the dynamic of the plot.

(12) The booklet went on (Appendix CC10-12, 16, 17) to provide a map and a gazetteer of Ambridge and district, describing the local political situation, social composition of the area, and the local educational scene.

(13) Finally, it set out (Appendix CC14, 15) a detailed timetable of
meetings, over a ten-day period, for the various committees. The meetings were sequenced to parallel, as closely as possible, actual local authority phasing of meetings, enabling decisions, made by one group, to be fed into the thinking of subsequent groups.

5.3.2 THE 1972 EXERCISE

(1) In the week before the introductory session to the exercise, the students were required to work independently or in small groups through the file of letters and memos as well as listen to the Ambridge tape. They then attended the introductory session and heard the stimulus slide tape sequence, used in the final session of the 1971 course (see 5.2(5)). The year group divided into seminar groups and, in consultation with their tutors, the students took responsibility for the roles their seminar group was required to fill in the exercise, a typical seminar group being required to provide:

(i) Two members of the County Council and of a named sub-committee.
(ii) Two parish councillors (one to be the clerk).
(iii) Two district councillors.
(iv) Members of a parent teachers association.
(v) An L.E.A nominated member of a school management committee.
(vi) A co-opted member of the school management committee.
(vii) A range of other local 'inhabitants' with specified roles.

Some idea of the flavour of these roles is given below:

<table>
<thead>
<tr>
<th>AMBRIDGE ELECTORAL ROLL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>County Council</strong></td>
</tr>
<tr>
<td>1. One councillor who is a member of the County Council but not a member of the Education Committee. It is likely that such a person would also be a member of a local council (e.g. Parish or R D C ).</td>
</tr>
<tr>
<td>2. One councillor who is also a member of the Education Committee. In addition the councillor is Secretary to the Executive sub-committee.</td>
</tr>
<tr>
<td>3. <strong>David Latimer</strong>. The Vicar of Ambridge Church nominated by the Diocesan Education Committee to the County Education Committee. In addition is a member of the Schools sub-committee. He is concerned at the fate of Netherbourne Church Primary School.</td>
</tr>
<tr>
<td><strong>Parish Council</strong></td>
</tr>
</tbody>
</table>

continued overleaf
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
Continued from previous page

5. One councillor. A retired schoolmaster who used to be headmaster of the school years ago.

6. Jill Archer who is also a member of the Action Group.

Ripple Rural District Council

7. Jill Archer.

Each group of about twelve students would receive a list containing up to eighteen roles of this kind, and some students would therefore become members of more than one committee. (See Plate 5C).

(2) Close analysis of these 'electoral registers' would give the student some insight into the membership of committees and, in particular, the balance of elected, co-opted and nominated membership of many local government committees.

(3) Grouped in fives, the twenty seminar groups provided the membership of the four villages in the exercise, and the seminar tutors were given the opportunity to take roles in the exercise alongside their students, although only a few of them, in fact, did.

(4) Each village was allocated a notice board sited in a circulation space in the College, and space was provided, on the board, for each committee and pressure group. The exercise commenced with the chairmen of each of the groups, timetabled to meet in the first part of the exercise, receiving a letter from the chairman of the education committee, asking for their group's comments on the proposals to close the village schools. Each group or committee had a file, kept on a table by their village notice board, in which all minutes and correspondence were kept, and all students could look at these files.

(5) I acted as Chief Education Officer, aiding the decision-making dynamics, by prodding individual groups to particular lines of action, and responding to letters and memoranda from these and other groups. To help give realism to the exercise, a range of headed stationery was prepared for the various groups for correspondence, memoranda and official notices (see Plate 5 (D)).

(6) At the end of the complete cycle of meetings the formal and informal pressure groups fed their views to the members of the various sub-committees of the county education committee, who made recommendations to the education committee. The recommendations of these sub-committees revealed that they had looked fairly carefully at the whole range of primary education, considering the differences between junior schools, infant schools, nursery schools, first and middle schools. Using these recommendations, I was able to write an imaginary set of minutes for the education committee.
(7) In the days immediately prior to the final session of the exercise, the forty members of the year group, who were members of the county council, received a formal notice summoning them to attend the council meeting and attaching the above-mentioned committee minutes (see Appendix DD).

(8) They saw that the education committee had received a report, costing out the alternative schemes suggested by the various sub-committees. The costing out was done on the actual cost per pupil place then current in 1972 local authority expenditure. The report then weighed up the pros and cons of the various schemes (again, a miniature lecture, in disguise). These minutes of the education committee showed that the original recommendation to close the three schools was carried by a majority of one.

(9) The whole year came to the council chamber in county hall to find it set up as it would be for a county council meeting. The members of the council found themselves confronted by two warning lights, one of which lit up after they had spoken for two minutes, the second lighting up after three minutes and they had to stop speaking at this point.

(10) The chief clerk to the West Sussex County Council chaired the session, which was run in a slightly authoritarian, business-like way, and was seen as slightly threatening by the student body. This was done for two reasons; firstly to reproduce the streamlined decision-making of actual county council meetings and, secondly, to focus the students' attention, attitudinally, on the impersonality and frustration of democratic decision-making. In retrospect, I feel this needed more follow-up discussion with students.

(11) The pressure of speaking against the clock limited discussion, and the vote was forced relatively quickly. The voting was by acclamation, but when this vote was challenged, a formal counting of votes took place and the recommendation to close the schools was defeated and was referred back for further consideration by a sub-committee.

(12) After the formal meeting, the assistant county treasurer and the chief clerk dealt with questions from the year group about local government decision-making.

(13) One week after the end of the exercise, a lecture was given applying the concept of cost-effectiveness to the simulation. This was done partly to provide students with an applied example of one facet of the economics of education and partly to stimulate discussion among seminar tutors on the costs of developing and running an exercise of this type.
(14) The lecture compared the hours put into different parts of the exercise by technicians, seminar tutors and myself, as course designer. It then costed these out on an hourly wage basis, and drew some cross-comparisons, suggesting that, at 1972 prices, the nominal time given to the exercise by the nineteen seminar tutors would cost £364, whereas the 202 hours I estimated I had put in to the design of the course might have cost £281*, together with £25 for secretarial and technician time. The lecture concluded by comparing these costs and posing questions about the relative balance between them.

5.3.3 EVALUATION OF THE 1972 EXERCISE

(1) Evaluation of this exercise proved particularly difficult. Viewed superficially, the exercise was highly successful with the College covered with posters from the various pressure groups (see Plate 5E), a large amount of correspondence and report writing in the files, newspapers produced and good involvement by students. The close-knit nature of the College campus (see 2.2) undoubtedly contributed to this reaction.

(2) There were, however, 250 students in the year and it was clear that, despite this activity, many students dropped out from the exercise while it was in progress, and many indicated that this was because they had difficulty establishing a satisfactory role for themselves.

(3) I received a great deal of informal feedback from students while the exercise was in progress and was able to identify some of the difficulties students were experiencing as it progressed. The main one appeared to be uncertainty caused because they felt they could not see the exercise as a whole. As well as participating in it, many wanted to stand back and view it intellectually.

(4) Students wrote an essay at the end of the exercise, which was marked by seminar tutors. In retrospect, I realise that I could have used this to see how far some of the cognitive objectives of the course were being achieved, but I failed to do this.

(5) At the end of the exercise, the year group was given a questionnaire (Appendix B) and asked to complete it, in their own time, and return it to their tutors. Only 116 students out of a year group of 250 did so, partly accounted for by the onset of their block school practice, and partly by some tutors not giving it sufficient priority. Because of this relatively low return, I provided structured time to complete the evaluation at the end of all future courses, rather than relying on students completing them independently.

*This was costed out on a 52-week year based on the average salary of a senior lecturer in 1972.
"... the exercise was successful with the College covered with posters ..."  
(5.3.3(1))
It is crucial in looking at Diagram (5.4) to remember that it is based on replies from less than 50% of the students and may well not include a balanced response from students critical of the exercise. In addition, in order to obtain a clear visual pattern to the diagram, the wording of some questions was changed from that in the original questionnaire. In the following comments, the numbers in brackets refer to the left hand column of this diagram as well as to Appendix B.

In overall terms, students were non-committal in their evaluation, with relatively few rejecting the exercise, but equally with only about 40%, on average, responding positively.
(8) The above pattern of response applied to judgments concerning the grasp of the exercise (3) and of the file of documents (2), prepared to help give a background; to judgments about the grasp given of the role and procedures of the county council (18a) and parish councils (18b); to the insight given into pressure groups (20).

(9) A more positive response was given to the storyline of the exercise (1) and to the various questions about the slide tape study unit on the economics of education (10 to 15, 16), although a third of the students found it a difficult unit. Similarly, a fairly positive response to the role-playing (17) by over half of the students, and an extremely positive response to the effectiveness of the exercise as an introduction to the technique of simulation (21).

(10) There was a slightly more critical response to the effectiveness of the exercise in promoting self-confidence (23) and in ensuring application of economic concepts (22), although 46% of the students responded positively. The most disappointing response was in the area of the amount of study generated by the course (9a, b, c, d), with only about 12% of students claiming to have studied intensively, and with most students carrying out rather limited study. Finally, the exercise was not successful in giving an insight into certain of the pressure groups (18c, d, e).

(11) Students were given space to write general comments about the exercise and there was a clear demand for more time to be given to it, but they recognised the conflicting pressures from main subjects, and this clearly restricted some students' involvement in the course. Several suggested the need to block off a period of time devoted exclusively to this type of exercise, thereby resolving the conflict with other courses, and many felt it was timed wrongly, occurring, as it did, just before a main block of school practice.

5.3.4 CONCLUDING JUDGMENTS ON THE 1972 EXERCISE

(1) Basically the response by the participants had a stimulating freshness, since nothing quite like it had been attempted before, but there was indication that many students had difficulty finding a clear role for themselves in the exercise and this meant that some students dropped out from it as it progressed. I did not feel this to be a major weakness, since one of the points of objective B2 (Table 5.1), the development of personal initiative, and B6, the experiences of role play, was to place students in a challenging situation, which they needed to develop.
(2) It may be that the portrait of the students given in Chapter Three may help in understanding their response. I indicated (3.4) that the majority of students came to the College straight from school, and it was significant that the older students were able to draw on their own experience in responding to the exercise. The basic stability and extroversion of many of the students (3.10(4,5)) undoubtedly contributed to the response, but it may be the fact that so many of them were 'first generation' higher education students gave rise to some of their uncertainty. What is certain is that with so many of the students coming from an insecure academic background (see 3.13(5,7)), they would inevitably find the simulation demanding.

(3) Column (iv) of Table (5.1) shows the evaluation of the 1972 course objectives. The evaluation was partly 'objective', based on formal evaluation at the end of the course (Appendix B) and partly 'intuitive', based on informal feed-back from individual and small groups of students, as well as staff. The 'objective' evaluation is indicated by bracketed references in column (iv). The exercise was clearly only partially successful in achieving a specific set of objectives, but I felt there was enough supportive evidence to consider developing it further.

(4) Although I had tried to involve the seminar tutors, who normally worked with the year group of students when they were split up for small group work, I was unsuccessful. They were given the opportunity to comment on the original proposals and to modify them; they were given the opportunity to involve themselves in the exercise. Few of them, in fact, did so, partly I suspect from inhibition and partly from alienation. It may be that the child-centred tradition described in chapter two (2.2(6)) may help to explain this.

(5) The strength of the 1972 exercise was the general decision-making dynamic of inter-group activity, linked with intense involvement by a significant number of students. Its weakness, I considered, was that it lacked intellectual depth, which I felt to be important. In 1972, the decision-making was present, but it was spontaneous and very ill-informed. I wanted it to become much more informed and to be based on hard discussion and factual evidence.

(6) The results of the evaluation were fed back to staff and students one month later (see Appendix EE).
5.3.5 MAIN THESIS IMPLICATIONS OF THE 1972 EXERCISE

(1) This section will make detailed reference to Diagram (5.2) and for ease of reference, a detachable copy of this diagram will be found inside the back cover. Again for ease of reference, parenthesised letters within the text refer to lines of interaction within Diagram (5.2).

5.3.5.1 The Traditional Systematic Model

(1) The basic systematic model (Diagram 5.1) was certainly useful in aiding the general development of this course, particularly in helping me focus on the need to select appropriate teaching methods. This resulted in a number of learning systems being set up as part of the simulation, such as the use of the tape recording to set the scene (5.3.2(1)); the use of the committee papers to replace lectures (5.3.1(7), 5.3.2(8)); the use of the mock county council meeting (5.3.2(9-11)). It also resulted in my attempting to define objectives (see 5.3.1(2) and Appendix CC3) and to carry out some evaluation (see 5.3.3).

(2) The model was not, however, useful in any more detailed way and, indeed, was misleading, in showing a one-way process between the definition of objectives and the design of learning, although Rowntree himself qualified this one-way process (7), seeing it only as an ideal. From my personal point of view, the development of this simulation was very much a creative act and, while recognising the need for objectives theoretically, too great an emphasis on their early definition would undoubtedly have destroyed this creative process.

5.3.5.2 The Dynamic Systematic Explanation

(1) The evaluation of the exercise (Diagram 5.4) showed that I was more concerned with the general mechanics of running the simulation rather than with any rigorous assessment of the achievement of precise objectives. The evaluation was, however, superficial and, in retrospect, I can see that the dynamic explanation of the course development process (Diagram 5.2) might have provided greater insight. It would have made me (b) more aware of the impact of this exercise on the other courses the students were following and its timing just before their second block of school practice (5.3.3(11)). Being more precise, the hidden curriculum was affected by this interaction between courses ('d' and 'f') and students started to take survival strategies (k) and these strategies were to increase in future runs of the exercise.
The dynamic explanation would also have made me more sensitive to the impact of this course. I indicated (5.2(3)) that the course cut (m) right across the college norms and this influenced the hidden curriculum (e), creating interaction between the staff team, the students and myself ('g', 'h' and 'i'). Students had difficulty (5.3.3(3)) reconciling simulation with their normal learning methods and this created uncertainty and affected their response (k). Equally the norms of the seminar tutors were challenged and many were undoubtedly somewhat alienated by the teaching method. At one level they supported the course (5.3.1(5)) but it was a limited response in that few fully participated (5.3.4(4)) and none entered into any serious discussion as a result of my lecture (5.3.2(13)). Equally, there was only luke warm support for my attempt at evaluation (5.3.3(5)). In short, tutors were creating their own hidden curriculum (j) for surviving the course.

Finally, an understanding of the development of the course will be deepened by seeing it in terms of the growth in equipment (o) shown in cylinder 'C' of Diagram (5.2). The growth in technological provision will be discussed more fully in the next chapter (6.6.1.1), but it is necessary to note that the simulation depended on the ready availability of cassette tape recorders, purchased from 1968 onwards and, more fundamentally, on the use of an electronic stencil cutter, purchased in September 1970, to produce material such as that shown in Plate (58).

To sum up this first comparison of the traditional systematic model with the dynamic systematic explanation, the former was useful in very general terms, but the latter enabled much deeper insights to be gained into this first run of the course. It is important to note, however, that these insights have been arrived at retrospectively, because at the time I was only using the traditional model. The evidence, on which these insights were based, was present, but the traditional model did not guide me to attach sufficient importance to it.

5.4 THE 1973 EXERCISE

5.4.1 PREPARATION

It was decided to run the simulation for a further year, but with greater depth of content.
(2) As a result of an administrative decision taken by the College in 1972 (8), every course was allocated a number of staff hours dependent on its course length, timetabled time and student numbers*. Many seminar tutors had found it difficult to find a role for themselves in the 1972 exercise (5.3.4(4)), and so a decision was made to run the course without tutors altogether, with the total staff hours allocated to myself as course designer, enabling back-up resources for the course to be prepared.

(3) This decision was partly made in order to free staff for other courses, but it was also made by me for more serious reasons, based on my study of curriculum development. I was very consciously trying to place the emphasis in my own teaching on the development of well prepared resources for students to work on, in semi-independent mode. I did not feel that the seminar tutors' time, theoretically given to the 1972 exercise, had been well used and I felt that I could more profitably use such time myself to prepare detailed back-up materials for the students to use while the exercise was running. The College expected an average member of staff to put in some \(80\) contact hours with students in a 30-week teaching year, and so I was allocated about one third of my total year's work in order to develop and run the exercise.

(4) In retrospect, I feel this was rather an extreme solution, but, given the general availability of tutors, it was probably the most practical one. The important point was that this reflected a very positive administrative move by the College to support the development of independent learning materials.

(5) In the 1972 exercise, I had felt that the decision-making had been largely uninformed (see 5.3.4(5)) and therefore a large number of resources (see Appendix CC 12,13) were produced, including maps, statistical information and legal documents. These were produced from genuine original documents, but were modified to suit the imaginary locality of Ambridge in the county of Worcestershire.

*For example, the 1973 simulation, run for two timetabled hours a week over five weeks, with 215 students, generated:

\[
\frac{215}{12}\text{ students} \times 16 \text{ hours} \times \frac{1}{9} \times 5 \text{ weeks} = 159 \text{ staff hours.}
\]

**Discounting one or two senior staff this assumed an overall College staff student ratio of 1:12.

***Assumed that each group of twelve students warranted 16 hours of staff time per week.

****Second year students were timetabled for 18 hours per week and the simulation occupied 2 hours or one ninth of this time.
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
(6) These resource booklets were very detailed, but it meant that all students could get a general idea of the complexity of detail involved in any reorganisation proposal, and some students indeed looked at some of the materials very thoroughly, before arriving at relatively informed decisions. Sets of these booklets were available on short term loan, and were also set up alongside each village notice board (see Plate 5F).

(7) Although retaining the fictitious storyline of the exercise, the actual geography of Chichester and district was used (see Diagram 5.5), equating the fictitious villages in the plot with actual villages in the locality. It was necessary to maintain the fictitious element in the exercise in order to give some freedom to the location and type of schools used in the plot.

(8) I took a set of photographs of all of the villages and towns in the plot, photographing each school and using typical houses in each village to indicate the different social groupings of the exercise, the council house, the farmstead, the executive development, the industrial estate, the twilight region.

(9) These photographs were mounted on the village display boards linked by coloured ribbon to a 6" to the Mile Ordnance Survey map of the area (see Plate 5F). It was hoped that these displays would give more impact and greater exactitude to the decision-making.

(10) The 1972 exercise had been limited to primary schools, and students training for secondary work had indicated that this was a weakness. For this reason and also because I had to deal with a much larger year group of students (see 2.3), a strong secondary element was therefore added to the 1973 exercise by broadening it to involve proposals to reorganise all of the schools in the two towns of Borchester and Hoyledale, together with their surrounding villages. This reorganisation involved two secondary modern schools, two single-sex grammar schools and local authority and Church of England primary schools, including the four village schools in Ambridge and district. Some of the material about Hoyledale was drawn from the Open University Course, E283. In passing, it should be noticed that this topic of middle school and comprehensive school reorganisation needed to be introduced into the course, because many students would work in such schools, but few had personal experience of them (see 3.5).

(11) In addition to the original Ambridge file of documents, a second file was prepared, tracing the chequered history of the attempts to reorganise schooling in Hoyledale along comprehensive lines, in the face of strong resistance from the grammar school parents. Close reading of the file
would reveal to students the careful consultation process involved in any reorganisation proposal, with officers attending parents' meetings; the need for public notices under section 13 of the 1944 Act to be served; the constraints imposed on any reorganisation by the capacity of the existing school plant, and the need to utilise this as much as possible, keeping new buildings to a minimum. A summary of the contents of both files will be found in Appendix (FF).

5.4.2 THE 1973 EXERCISE

(1) In the term before the exercise, the students were given the chance to sign up, in friendship groups, for the various village and town groups in the exercise. This move from the seminar group-based villages of the 1972 exercise to the friendship group-based villages was deliberately engineered as a result of informal comment the previous year about the problems of organising meetings.

(2) At the same time, the students filled in a questionnaire, indicating the kind of pressure groups they would like to belong to, and whether they were interested in taking a leadership role. They were also asked if they would like to participate in either the political or the religious (church schools) dimension to the exercise.

(3) Roles were allocated, using this information, and it was hoped that their involvement in the definition of their roles would help overcome the problems some students experienced in the 1972 exercise, in developing their roles (see 5.3.3(2)).

(4) The exercise was introduced in much the same way as the 1972 exercise, except that more attention was paid to explaining, in some detail, the alternative reorganisation proposals they were faced with. It is worth noting that a timetabled spot was made in the second week, to enable students to give me some feedback on the exercise, and to modify it, if necessary.

(5) The course booklet (see Appendix CC) contained some modification. Firstly two additional objectives were identified: to gain insight into the role of pressure groups; to understand something of the effect of vested interests such as the Church of England and political interest on decision-making. Secondly, some of the diagrammatic and map material was revised and the gazetteer of Ambridge and district was considerably modified and amplified. Finally, an additional section was added, listing and describing the contents of each of the resource booklets.
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
It is worth noting, in passing, the addition of pressure groups, such as the Mothers' Union and Women's Institute, old pupils' associations and civic societies, which students could belong to. These were deliberately added to give a greater range of possibilities for student involvement.

The 1972 run of the exercise had asked students to write an end-of-course essay as well as taking part in the exercise, and some students had difficulty achieving a correct balance between the two, attaching greater importance to the weighting of this piece of assessment than did the College tutors. I discussed this with seminar tutors and made changes in the 1973 course.

In 1973, students were given three alternative patterns of study. They could, if they wished, take little or no part in the simulation and instead produce a major essay; alternatively, they could follow the previous year's pattern of taking part in the exercise, as well as producing an essay. Finally, however, they could choose to take part in the exercise and submit, instead of an essay, work directly stemming from the exercise. Such work could include committee minutes, working papers on alternative patterns of schooling, articles and display posters, tape recordings or an interaction analysis of a meeting. One or two chose the first alternative and most chose one or other of the last two.

Parallel with membership of committees and pressure groups, they were given the chance to join newspaper editorial teams, or programme production teams of a local radio. These professionally-oriented activities were taken up, with enthusiasm, by some students.

The main difference between the 1972 and the 1973 exercises was the fact that the 1973 exercise attempted to use open plan teaching methods for the actual meetings (see Plate 5G). Two halls were used and corrugated rolls of paper were used to partition off meeting spaces for each village and town in the exercise. The village display boards, containing the photographs and map already described, were located as an integral part of these partitioned work spaces.

The purpose of this was to deepen the professional relevance of the teaching methods used in the course. Primary schools were using open plan teaching spaces, and students had rarely studied in such spaces in the course of their own school learning.
"... the political ... dimension to the exercise". (5.4.2(2)).

"... good evidence of student participation". (5.4.2(12))
(12) The exercise developed in much the same way as the 1972 exercise, with good evidence of student participation (Plate 5H). Letters and memoranda were exchanged between groups and also with me, in my dual role as chief education officer, and secretary of state for education; two editions of two local newspapers were produced together with a number of programmes by Worcestershire local radio.

(13) The final council meeting at County Hall was as tense as the previous year, so tense, in fact, that there were fewer speakers. There was little agreement over the two alternative patterns of schooling and the whole proposal was referred back for further discussion by the Education Committee.

(14) One week later, students came to the hall for a short drawing-together of the exercise and were then asked to complete a detailed evaluation of the course.

5.4.3 EVALUATION OF THE 1973 EXERCISE

(1) The results of the questionnaire (see Appendix C) are summarised in Diagram (5.6) and represent the replies of just over 90% of the year group. It is likely, however, that the 10% of non-responders represented a higher proportion of students critical of the exercise than in the responses of the 90%, but certainly this response rate gives greater validity to the evaluation than in the previous year. The figures in brackets, after the comments which follow, refer to the left hand column of Diagram (5.6) and also to Appendix C.

(2) The simulation was clearly seen to provide an opportunity for decision-making (2) and was very successful for 79% of the responders, in developing a sense of social awareness (9a). It also succeeded in making them reconsider the aims and structure of schooling (14, 15).

(3) At a personal level, many saw it as providing an opportunity for leadership (1), and for developing self-confidence (3) in those who lacked it, and about half of the students felt it developed their powers of initiative (4).

(4) It is difficult to assess the effectiveness of the exercise in giving an understanding of the role of pressure groups (8). It is clear that few students already possessed this understanding, but while 70% of the students felt that they could see the place of local public opinion as it influenced the decision-making (8d), few could see the detailed role of political, religious and professional pressure groups (8a to 8c). This proved to be a continuing pattern in the following years, with students finding it easier to operate more homely groups such as parent-teachers'
associations and women's institutes, compared with teachers' associations and political parties.

Diagram 5.6

**SIMULATION EXERCISE - 1973**

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<th>QUESTION</th>
<th>% YES</th>
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<td>1 Provide leadership opportunity</td>
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<td>2 Provide decision-making opportunity</td>
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<td>3 Increased self-confidence</td>
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<td>4 Helped develop initiative</td>
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<td>5 Deepened group insight</td>
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<td>6 Role played successfully</td>
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<td>7 Extended this role</td>
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<td>8 Need role play training</td>
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<td>9 Gave understanding of County Council</td>
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<td>15 &quot; &quot; Parent Teachers Association</td>
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<td>17 &quot; &quot; Insight into Political Pressure Groups</td>
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<td>21 &quot; &quot; Developed social awareness</td>
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<td>22 &quot; &quot; Exercise Professionally Relevant</td>
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<td>23 &quot; &quot; Exercise Intellectually Valid</td>
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<td>24 &quot; &quot; Gave insight into open plan teaching</td>
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<td>25 &quot; &quot; Applied concept 'cost effectiveness' to Exercise</td>
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<td>27 &quot; &quot; Used School Population Statistics</td>
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<td>28 &quot; &quot; Used 1971 Census Statistics</td>
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<td>29 &quot; &quot; Used O.S. Maps to aid decision</td>
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<td>31 &quot; &quot; Used 'Forward Capital Programme' Capital Budget</td>
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<td>32 &quot; &quot; Used the 'Section 18' booklet</td>
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<td>33 &quot; &quot; Used the 'Standing Orders' booklet</td>
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<td>34 &quot; &quot; Used the bus timetables to aid decision</td>
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<td>35 &quot; &quot; Used the 1971 'Education Statistics'</td>
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<td>36 &quot; &quot; The back up materials deepened insight</td>
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<td>37 &quot; &quot; Reconsidered aims of schooling</td>
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<td>38 &quot; &quot; Reconsidered age of transfer</td>
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<td>39 &quot; &quot; Examined internal school organisation</td>
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(5) Although the vast majority of students felt that the back-up resources to the exercise, ranging from census details and school population statistics to bus timetables and ordnance survey maps, were useful (13), they failed to make any detailed use of them (12a to 12i).

(6) Students had again been required to work through the 1971 slide tape independent study unit (see 5.2(4)), which required students to apply economic concepts to problems posed in the study unit. Despite this, only about 30% of the students felt they had applied these same concepts to the simulation exercise itself (10, 11). It needs to be noted, however, that no check was made of the number of students who actually worked through the slide tape study unit in detail, and the proportion of such students successfully applying the concepts may well have been higher than this 30%.

(7) There was great uncertainty over the intellectual validity of the exercise (9c) with one third of the year seeing it as valid and one third not seeing it to be so. Clearly my definition of intellectual validity and the student definition may well differ, but these attempts at innovatory teaching highlight this as a significant factor in their judgments of courses. One seminar tutor summed it up well by saying: "They felt it could not be intellectually demanding, because they enjoyed it! It is as if they equate intellectual validity with punishment or difficulty in comprehension".

(8) To a lesser extent, the exercise was seen to be professionally relevant (9b) by 60% of the students, and was seen to give them some experience of open-plan teaching (9d).

(9) The exercise depended on small group activity and made demands of students in the ability to role play. 65% felt that it had deepened their insight into the way groups operate (5), but many experienced difficulty with the role play demand (6a, 6b) and saw a need for training in this technique (6c).

(10) While it was successful in giving insight into the operations of the county council (7a) and of parent teachers associations (7g), it was unsuccessful in giving similar insight in the case of the other committees (7b to 7f, 7h). In retrospect, I feel that this question, as asked, was ambiguous and failed to get at the role of these different groups in the decision-making process.

(11) The most striking thing to note, comparing these responses with the 1972 response (see Diagram 5.4) was that it was much less ambivalent. The proportion of non-committal responses was far less than in the first
run of the exercise. There were some encouragingly positive responses, but the exercise was not successful in stimulating academic work, despite the detailed preparation of resources, nor was it any more successful in bringing about an understanding of the way the various committees worked.

Diagram 5.7

(12) Parallel with the questionnaire, students made a judgment about the simulation as a whole in terms of a semantic differential (see Appendix U), and Diagram (5.7) gives a profile of the response of two thirds of the year group to it.

(13) The most pronounced responses were in terms of the complexity and diffuseness of the exercise and, slightly less so, in terms of its stimulation. Although not quite so clear-cut, the exercise was basically seen as good and successful. There was no clear judgment about it in terms of its activity/passivity dimension, its intellectual validity, its intenseness, its positive nature or its ability to generate feelings of security. In overall terms, certainly not a hostile response, but certainly a restrained one.

(14) In addition to this formal written evaluation, I received a lot of informal feedback from individual students, and as the exercise progressed, it was clear that many of the students were highly involved and found the decisions they were facing extremely demanding.
Immediately after the exercise, I held an informal open meeting with the year group, to discuss the exercise. Thirty students attended, some of whom had not taken an active part in it, and entered into a dialogue about its validity, highlighting serious reservations about the exercise, stemming from complex reasons. Firstly, they noted its excessive time demand, if they became too involved in it, together with the frustration experienced by many of the students, who had been highly involved, when they felt they had achieved relatively little, in terms of content, at the end. They recognised the value of involvement, but realised that they had little to show in terms of formal lecture notes. Secondly, as in the previous year (see 5.3.4 (1)) there were problems for many of actually achieving a satisfactory role for themselves, and this led to many either failing to be involved at all, or dropping out, as the exercise progressed. Some felt that the role they were given bore little resemblance to the role they thought they had asked for the previous term. Others found that some groups were luckier, in having easier roles to develop than others. The Ambridge villagers, for example, were at an advantage, as were those involved in the fight to save the grammar schools and the Church of England school, but others felt their tasks were less well defined. There was obviously some truth in these criticisms, but equally there was some evidence to suggest that students, with initiative and positive attack, usually overcame difficulties of this kind. Finally, as in the previous year (see 5.3.3(1)) there was strong support for a block of time to be devoted to this kind of course, because of the conflict it posed with other courses.

One final point; the use of the halls, to reproduce the open plan teaching situation, was unsuccessful, due to students finding it difficult to work, when other groups were meeting close by, because of the noise. This is, of course, a problem in real life open plan teaching in schools. There were also many alternative meeting places available, and so it was understandable, that groups should tend to retreat from the open plan situation into these alternative rooms.

5.4.4 CONCLUDING JUDGMENTS ON THE 1973 EXERCISE

Looking back at the 1973 objectives shown in column 'v' of Table (5.1), it can be seen that there was a more positive attempt to measure the success of a wider range of objectives, although many still remained only 'intuitively' checked. Clearly the cognitive objectives, as a whole, were only partially achieved, whereas I felt, but could not prove, that more of the affective aims had been achieved.
(2) In retrospect, the fact that the dynamic of the exercise was maintained, and that many students remained highly involved, made it reasonable to assume that many of the affective objectives were being achieved, and so the emphasis in 1973 and 1974 focussed more on deepening the cognitive ones, and the formal evaluation therefore focussed more on these. An attempt was being made, in the development of the exercise, to bring about a balance between the two, to provide a learning experience which would challenge the students at a personal level, but which would also challenge them intellectually.

(3) There was evidence to suggest that the students found this balance difficult to achieve, tending to resist the attempts to deepen the quality of the decision-making. There was also evidence to suggest that relatively few analysed the exercise in sufficient detail to extract cognitive material from it. Since no detailed analysis was made of essay answers, apart from those of my own seminar group, it was not possible to explore this aspect further in 1973.

(4) The absence of tutors in the simulation produced no student comment, although clearly an 'involved' tutor would have helped to overcome the above problems. Even in retrospect, I do not think it would have been possible to produce this level of involvement from tutors.

(5) An evaluation of the 1973 exercise was made available to students and staff in the autumn of 1973 (see Appendix GG).

5.4.5 MAIN THESIS IMPLICATIONS OF THE 1973 EXERCISE

(1) The simulation was still being developed using the systematic model (see Diagram 5.1). Following evaluation of the 1972 course, the resourcing of the 1973 course was improved (5.4.1(5)); the formation of work groups and the allocation of roles were modified (5.4.2(1, 3)) and the nature of the end of course work expectation was altered (5.4.2(7)). In addition, by developing the elaborate parish display boards (see 5.4.1(8, 9)), I used the 'design' part of the systematic model to develop more appropriate teaching strategies.

(2) The model tended, however, to make me focus too much on factors related to the course itself and to pay too little attention to the course set in the context of other college courses and of the College as a social entity. As a result, I paid little attention to this cartoon (Plate 5J),
which appeared in one of the newspapers (see 5.4.2(9)), or to the overall judgments made at the end of course meeting (see 5.4.3(15)).

(3) The dynamic systematic explanation (Diagram 5.2, but see 5.3.5(1)) may serve to illustrate this more clearly. In 1972, the simulation had conflicted with other courses (5.3.5.2(1)) and this interaction (b) was again present in 1973, exerting pressure ('d' and 'f') on the hidden curriculum. In 1972, the simulation had cut across the teaching and learning norms of the College (5.3.5.2(2)), a problem noted in the literature review (4.3.2.7(10)), and in 1973, it again appeared to do this (5.4.3(7)), making(m)problems for the students in equating the teaching method used (c) in the simulation with those they experienced (a) on their other courses, and this again influenced (e) the hidden curriculum.

(4) Although the students could recognise its professional relevance (5.4.3(8)), they were starting to judge the simulation in terms of its lack of contribution to the academic assessment processes of the College. The process (p) of students staying on for a fourth year B.Ed. degree was growing and 30% of the 1973 students (Diagram 2.15) stayed on in 1974. Clearly this dynamic was influencing ('r' and 'c') both the rest of the curriculum and the simulation in 1973, and it is not surprising, therefore, that the end of course evaluation revealed (5.4.3(15)) a preoccupation with reconciling the exercise's high involvement with the lack of assessable work at its conclusion.
The dynamic explanation has highlighted significant factors and processes, which were affecting the 1973 course, but which were unlikely to be noted by my close adherence to the systematic model. The systematic model had proved useful in developing the course at one level, but it took no note of the significant impact of the hidden curriculum on the course and this was to increase in impact in 1974.

In conclusion, it needs to be noted that Diagram (5.2) helps to see the development of the simulation in an even broader perspective. It shows how logistics factors (q) such as the introduction of a formula to allocate a staff hourage to all College courses (5.4.1(2, 4)) or the significant increase in the size of the year group (5.4.1(10)) directly affected the 1973 simulation. It also shows how wider professional ones (u) such as the growth of comprehensive schooling (5.4.1(10)) or the increasing provision of open-plan schools and classrooms (5.4.2(11)) again impinged on the development of the course.

5.5 THE 1974 EXERCISE

Diagram 5.8

CHANGING SEMANTIC VIEWS OF SIMULATION 1973 - 1974

1973 EXERCISE
1974 EXERCISE
"Official nomination papers were issued ..." (5.5.2(2))
Diagram (5.8) compares the 1973 and 1974 simulations and shows a slight shift in opinion, in that it was seen more negatively by the latter year group of students. I will attempt in the following sections to identify the reasons for this change.

Recognising the problems posed by the previous evaluation, it was decided to have one further run at the exercise in 1974, in order to test the materials further.

5.5.1 PREPARATION

(1) Minor alterations were made to some of the resources, but basically they remained unchanged. The most significant change was to try to pay more careful attention to the formation of the various committees and pressure groups in the light of the feedback from the first two years of the exercise (see 5.3.4(1), 5.4.3(15)).

(2) As in 1973, students were asked to sign up for membership of the various villages and towns in the exercise but, at the same time, either to take on one of the roles in the exercise listed in detail for their village, or to work out their own role, and write it up alongside their name. It was hoped that this would produce more commitment to the chosen role.

(3) In order to give more insight into the mechanics of local government, an election procedure was introduced, reproducing, as accurately as possible within the terms of the simulation, the election procedures used in real parish, district and county council elections. Returning officers for the county and district councils helped me to make this part of the exercise as accurate as possible. Actual notices and forms, used in the real elections, were slightly adapted for the purpose of the simulation (see Plate 5K).

5.5.2 THE 1974 EXERCISE

(1) The students were aware, in the November of the preceding term, of official notices advertising that elections would be held for county, district and parish councils, and inviting nomination of candidates. Official nomination papers were issued to those inhabitants wishing to nominate councillors and these were returned, with the names of proposers,
... students were asked to record their votes ...
(5.5.2(1))

... many students found this to be a demanding experience ...
(5.5.2(1))
seconders and assentors, all drawn from the appropriate parishes in the exercise. The lists of candidates were published and, in due course, poll cards were issued to the whole year, and students were asked to record their vote in actual voting booths borrowed from the local authority (see Plate 5L). At the affective level, many students found this to be a demanding experience, because the notices, poll cards, nomination papers and polling station notices were all adapted from actual ones used in local government elections, and so many found themselves thinking seriously about casting their vote in real life elections.

(2) Up to this point, students had signed up for roles, nominated and elected councillors, without any formal introduction to the simulation due to take place the following term. They had, however, received written feedback (see Appendix GG) of the previous year's exercise, which covered most of the points made earlier in this chapter, and which emphasised the lack of depth study in the previous year's course and the fact that it was hoped to deepen this in the 1974 exercise.

(3) The exercise followed the same pattern as in 1973, except that the plot was modified to take into account the previous year's decisions, and also taking note of the actual cut-back in spending on education, just taking effect in 1974. The only major difference was one purely of location. The attempt to create an open-plan environment in the College halls was abandoned and ordinary lecture rooms were used. In addition the final session could not take place in County Hall, because of the imminence of an actual general election.

5.5.3 EVALUATION OF THE 1974 EXERCISE

(1) In addition to the formal evaluation at the end of the course, which will be discussed later in this section, a detailed analysis was made of all the minutes and correspondence, filed by the different groups in the central corridor display of the exercise. This analysis proved to be extremely valuable, but it must be stressed that the College students are by no means 100% reliable and so, although they were asked to place copies of all letters and minutes in these files, it is very likely that some failed to do so. The analysis will therefore tend to be conservative, not reflecting all of the interaction in the exercise.
COMMUNICATIONS FLOWCHART

SIMULATION - 1974

P = Parish Council
A = Parent Teacher Association
M = School Managers/Governors
W = Women's Institute
U = Mothers Union
C = Chief Education Officer & Staff
D = County Council sub-committees
R = Rural District Council
D.E.S. = Dept. of Education & Science
† = Parish Church Council
L = Labour Party
(2) Diagram (5.9) is of great interest, because it represents the interaction between the various groups in this 1974 exercise, interaction as indicated by actual correspondence between groups, or minuted decisions by groups that they would make contact with other groups. There was very strong evidence to show that students (and, indeed, staff and students from other years) were constantly examining these files. From this diagram it can be seen that, although there was considerable interaction with the chief education officer (i.e. myself), there was also considerable interaction between the different groups, a fair indication that there was good exploration of the democratic process.

Diagram 5.10

![Diagram](image-url)
(3) Clearly from this diagram, some villages were more involved in the exercise than other villages, as is also shown in Diagram (5.10(iii)), and this may have reflected the strength of the friendship groups originally signing to belong to these various village groups, or it may have again, as in 1973 (5.4.3(15)), have reflected the inherent problems of the plot.

(4) Of the fifty groups which were timetabled to meet in the exercise, nineteen did not file minutes (Diagram 5.10(i)) and therefore for the purpose of this analysis were assumed not to have met. All groups were timetabled to meet once, but could, if they wished, meet on subsequent occasions, either in the timetabled time for theory of education, or outside of timetabled time in coffee and lunch breaks. 30% of the groups (Diagram 5.10(i)) met on more than the one arranged occasion. Of all the groups which actually filed minutes, half of them held at least one meeting in lunch or coffee breaks, again an indication of the high level of involvement of some students. (Diagram 5.10(ii)).

(5) Looking at all of the meetings actually minuted (5.10(iv)), it can be seen that the parent teachers associations were by far the most active, possibly indicating, as in 1973, that students found it easier to role-play this kind of group (see 5.4.3(4)).

Diagram 5.11

(6) An analysis was made of the names of all of the students, recorded as being present at the meetings of any group in the exercise, and the results are shown on the left of Diagram (5.11). Clearly, 38% of the year had no involvement in the group meetings, as minuted, and a further 20% were only recorded as being present at one meeting. This meant that between one quarter and a third of the year appeared to have been highly involved.
in the exercise. It can be argued that this relatively low level of high
involvement is equally the case with more traditional courses, but is
covered up by the more structured attendance requirements of these courses.

(7) The right hand of the diagram is of interest, because it records the
students who were shown in the minutes to have made some contribution to
these meetings. Of the students, who actually were recorded as being
present at a meeting, 30% appeared to have made no active contribution,
but equally about a third of the students took an active part in meetings,
again an indication that effective objectives were achieved.

(8) Undoubtedly there were many interacting factors, influencing students' actual involvement in the exercise. Partly it was a question of the
students' own motivation and wish to take part and one student, for example, said:

"I felt Ambridge to be a waste of time for myself. It gave those with over-developed egos a wonderful opportunity to express themselves".

Partly, however, it was a question of the level of success of the group
or groups to which the student belonged, for the exercise was designed to
provide a challenge for both individuals and groups (see objectives B1, B3, B4, B8, B9 of Table 5.1).

(9) The above complex factors led to a wide variety of responses to the
course and made evaluation particularly difficult. On the one hand there
were many critical comments, such as the following:

"... would have been very successful if everyone had worked on role play. Because of everyone's laziness, course a waste of time".

"Nobody really knew what was going on, unless they had put in a great deal of work on the files etc."

"I found it all rather a rush and did not realise the full extent of the materials".

"... not intellectually valid, but if I had done more I can see that it would have been".

"Intellectually valid? - It could have been, but most students require more direction and control".

"... (simulation) could equally well have been done by lectures or books - but would I have read them?"

(10) On the other hand, there was the strong interaction portrayed earlier
(Diagram 5.9), and clear evidence in committee minutes and in newspapers,
produced during the exercise, to show that many course objectives were being
achieved and Table (5.2) illustrates this by linking a number of these
extracts with relevant objectives, taken from Table (5.1).
(11) It is impossible to make conclusive judgments from this evidence, but merely to point out that these quotations, originating from fellow students, were read by most of the year group, in the newspapers and minutes produced during the exercise.

(12) It is difficult to capture the real essence of a simulation of this kind, but it is felt that this analysis of files, minutes and newspapers has given something of its quality.

### TABLE 5.2 THE ACHIEVEMENT OF OBJECTIVES

<table>
<thead>
<tr>
<th>OBJECTIVES (See Table 5.1) ACHIEVED</th>
<th>A</th>
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<th>B</th>
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<tbody>
<tr>
<td>Extracts from letters to the editor, editorials, news and articles, also from minutes of various committees.</td>
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<td>&quot;The point was made that because of the school capitation system, the school would get more money ...&quot;</td>
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<td>&quot;... the benefits to be had, in return, from a large school in the way of equipment ... outweigh the doubts&quot;.</td>
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<td>&quot;... O.K., so you apply all the theories of unit cost and division of labour, and it all sounds very convincing&quot;.</td>
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<td>&quot;... one must be realistic, the small village school is no longer economically possible&quot;.</td>
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<td>&quot;I see many advantages in the larger school, briefly: a) increased capitation - for equipment; b) larger staff and greater breadth of staff expertise; c) better social contact between villages; d) saving the ratepayers' money&quot;.</td>
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<td>&quot;The County Council 'Revenue Budget' states that ... spent on education ... rose from 65.4p to 74.4p ... There is a definite upward trend ... what will it be when these proposals are passed?&quot;</td>
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<td>&quot;... the new large school, with its better prospects, will attract teachers with higher qualifications&quot;.</td>
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<td>&quot;Borchester Women's Institute decided to unite with the Mothers' Union members, to arrange a demonstration&quot;.</td>
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<td>&quot;Inkberrow Mothers' Union met last week to listen to their guest speaker, the Chairman of the School Management Committee&quot;.</td>
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<td>&quot;The Parish Council, at their meeting, asked the Parish Councils of the other villages, to join together in a joint Action Committee&quot;.</td>
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<td>&quot;... come on parents, if you've got views on this issue, why aren't you airing them?&quot; - an anxious parent.</td>
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<td>&quot;... feeling ran very high at this meeting&quot;.</td>
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<td>&quot;Councillors had to go out to find the opinions of the people ... the people should have brought their ideas to these men&quot;.</td>
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<td>&quot;Mr. Jenkins ended by saying that he would raise some of the points discussed at the meeting of the School Management Committee&quot;.</td>
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<td>&quot;Two speakers were invited to attend ...&quot;</td>
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<td>&quot;...nowhere...in any of the proposals, are the Councillors' personal views on nursery education put forward&quot;.</td>
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<td>&quot;... Mr. Sellar's amendment was outvoted ...&quot;</td>
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<td>&quot;...because of... the lack of communication, it might not be a true decision, especially as Mr. Brotherton and Mr. Marshall had said that they would have voted for the motion. But where were they?&quot;</td>
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<td>&quot;...and what about Mr. Richardson? We haven't heard a word out of him these past few weeks&quot;.</td>
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<td>&quot;... the meeting was not quorate ...&quot;</td>
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continued overleaf
TABLE 5.2 (cont'd.)

<table>
<thead>
<tr>
<th>Extracts from letters to the editor, editorials, news and articles, also from minutes of various committees.</th>
<th>OBJECTIVES (See Table 5.1) ACHIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;...members of the Women's Institute turned out at the meeting (to lobby)... The meeting never materialised, however... only 3 apologies had been received... which meant that 6 people should have been present... only 3... a representative from the Education Committee, had to return to her own meeting... since nothing could be discussed&quot;</td>
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<td>&quot;He questioned the ethics of closure...&quot;</td>
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<td>&quot;...there will be loss of contact with their parents&quot;</td>
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<td>&quot;...the present organisation of education gives the children no choice&quot;</td>
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<td>&quot;...whether the economic situation is of more importance than the educational one&quot;</td>
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<td>&quot;Why fight the comprehensive plans? We must have equal opportunities...&quot;</td>
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<td>&quot;...to use Durkheim's terminology, the comprehensive system is based on 'mechanical solidarity'...&quot;</td>
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<tr>
<td>&quot;One argument against was...congestion caused by... buses... Mr. Marshall and County Councillor Parker have prepared a by-pass scheme... but would it be so simple? ...This scheme of his could gain him (Mr. Parker) a contract for...&quot;</td>
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</table>

TOTAL TIMES OBJECTIVES ACHIEVED

| 3 | 3 | 4 | 5 | 3 | 2 | 7 | 1 | 1 | 7 | 5 | 2 | 2 | 3 | 3 |

(13) I had made a first attempt to use a semantic differential in 1973 (see 5.1(4) and Appendix U) and, at the end of the 1974 simulation, I used a more restricted version of this instrument (see Appendix F), using the following scales, which had, the previous year, appeared to be the most useful: good/bad, active/passive, intellectual/not intellectual, simple/complex, intense/relaxed. Diagram (5.12) represents three of these adjectival dimensions placed in a three dimensional adjectival space, using mean responses for each scale. This diagram is useful, not because it shows significant differences between the various aspects of the exercise, but because it enables each aspect to be succinctly described.

(14) The exercise as a whole (1), apart from being seen as complex, was seen in neutral terms. It was, however, seen to be well resourced, with the economics study unit (2) and the back-up support materials (9) being seen as good and complex, and with the support material being additionally seen as active. Finally, the display boards (5.4.1(8,9)) were also well received (8).

(15) At a personal level, students appeared satisfied with their own groups (5) and, to a lesser extent, with the course's success in developing self-confidence (4), but were dissatisfied with other pressure groups in the exercise (6) and the opportunities offered by the exercise, for leadership (3).

(16) Although they made no effective judgment about the professional relevance of the exercise (7), they did see the economics of education (11) and school reorganisation (10) as slightly active, if somewhat complex.
It needs noting, however, that there were differences in student judgments depending on their level of involvement in the exercise and this can be seen very clearly from Diagram (5.13). On these selected concepts, which show differences, which are statistically significant at the 5% level at least, students who took an active part in the
Diagram 5.13

LEVEL OF INVOLVEMENT AND RESPONSE TO 1974 SIMULATION

INTELLECTUAL RELAXED COMPLEX

VERY

QUIT ETF

SLIGHTLY

NEUTRAL

SLIGHTLY

VERY

NOT INTELLECTUAL INTENSE SIMPLE

LEADERSHIP BACK UP MATERIALS SELF CONFIDENCE PRESSURE SOAP DISPLAY BOARDS EXERCISE SELF CONFIDENCE DISPLAY BOARDS SCHOOL RESEARCH EXERCISE LEADERSHIP USE OF INITIATIVE ROLE IN EXERCISE PRESSURE GROUP BACK UP MATERIALS EXERCISE

* = No meetings
** = 1 meeting
*** = 2+meetings

* * = Judgement made at the end of the third year.
exercise predictably responded differently from the group of students who were only recorded as being present at one meeting. The fact that the group, who attended no meetings during the course of the exercise, are shown in the middle, is probably because this group actually contained students who were involved in the exercise, but who belonged to groups which failed to file minutes in the central files. (5.5.3(1)).

(18) It would appear that the group of students with limited involvement in the exercise saw it as not intellectual and simple but, significantly, as intense. This may reflect the fact that there was an element of frustration in their lack of involvement in the exercise. It is noteworthy that the more involved students were much more neutral in their responses.

5.5.4 CONCLUDING JUDGMENT ON THE 1974 EXERCISE

(1) The final run of the exercise lacked some of the vitality of the two preceding years but the analysis of files showed that, even so, there was a high dynamic to it for the students who remained involved.

(2) The exercise was certainly seen to be well resourced, but the reservations seemed to be in terms of actually getting groups to work effectively and to influence decisions. Similar general comments as in the two previous years were made and these will be discussed in the overall judgment of the exercise.

5.5.5 MAIN THESIS IMPLICATIONS OF THE 1974 EXERCISE

(1) I have already indicated (5.4.5(2)) that in the previous year, the systematic model had caused me to place my evaluation emphasis on the wrong things. In 1972 and 1973, I had received feedback, which indicated broader problems concerned with overall course structure, content and timing, but had concentrated my development attention on the more specific course objectives.

(2) In preparing for the 1974 exercise, I had again followed the systematic model and had concentrated on improving the social objectives, by modifying the way the groups were initially formed (5.5.1) and had tried to increase motivation by means of the mock elections (5.5.2(1)), already described. I had additionally tried to improve the cognitive objectives, by providing students with feedback from the 1973 course (5.5.2(2)) which indicated that this previous year group had failed to make full use of the detailed resources and the intellectual potential of the exercise.
The resulting course was certainly improved theoretically and was successful for some students, but it was clearly not successful for many others. As this final run of the exercise progressed, I implicitly realised that the systematic model was not proving helpful in the full development of this exercise and I started to look for a broader explanation, which will be discussed in the next two sections.

5.6 AN OVERVIEW OF THE COURSE

(1) This section will attempt to broaden the view of the exercise, by considering the exercise firstly set against all of the other courses taken by the students and secondly, seeing it in terms of the interaction between successive year groups who participated in it.

(2) Aware that the 1974 course had revealed a problem, I decided to explore it further and asked the students, who had taken the 1973 exercise when they were in their second year, to rate the simulation against all of their other theory of education courses, at the end of their third year in 1974, just before final examinations. This proximity to the examinations naturally influenced this rating of courses, with the simulation suffering because of its lack of examinable work.

Diagram 5.14

**Frequency Count of Inter-Correlations Between Course Judgement Criteria - 1971-74.**

<table>
<thead>
<tr>
<th></th>
<th>MOTIVATION</th>
<th>INTELLECTUAL</th>
<th>PROFESSIONAL</th>
<th>READING</th>
<th>OPENNESS</th>
<th>THOUGHTFUL</th>
<th>RELEVANCE</th>
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<td>67</td>
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<tr>
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<tr>
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<tr>
<td>OPENNESS</td>
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</table>

* = All Courses

Explanation: The '5' in the square means in judging 5 out of the 7 courses, there was a correlation greater than .30 between the 'professional' criterion and the 'reading' criterion.
The seven criteria used to rate the courses will be found in Appendix G, question 6, and a revised version of the question will be found in Appendix H, question 1. It can be seen, however, from a retrospective correlational analysis carried out in 1977 (Diagram 5.14), that there was some overlap between the criteria, and so the instrument may need further modification.

Diagram 5.15
(4) It can be seen from Diagram (5.15), which summarises the ratings of two successive year groups of students by adding together the ratings on the seven individual criteria, that the simulation compared badly with the other theory of education courses.

(5) This course rating analysis revealed the simulation in a new light but the analysis needs to be seen in terms of the systematic explanation (see Diagram 5.2, but see 5.3.5(1)). The simulation was no longer being judged introspectively (see cylinder 'A') following the systematic model, but was now being judged in terms of its relationship (b) with other courses. In addition, at the hidden curriculum level, it was being judged across the years (w, x, y) and this will now be discussed in greater detail (Table 5.3).

TABLE (5.3) CHANGING JUDGMENTS ANALYSIS

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<tr>
<td>1970 - 1973</td>
<td>Basically favourable (5.3.3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971 - 1974</td>
<td>Basically favourable (5.4.3(3))</td>
<td></td>
<td></td>
<td>Unfavourable (Diagram 5.15)</td>
<td></td>
</tr>
<tr>
<td>1972 - 1975</td>
<td></td>
<td>Less favourable (Diagram 5.8)</td>
<td></td>
<td>Unfavourable (Diagram 5.15)</td>
<td></td>
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</tbody>
</table>

(6) The judgments made by students immediately at the end of the simulations in 1972, 1973 and 1974 had been either favourable or cautiously favourable (cols. 1, 2 and 3); the judgments made by the 1971-4 and 1972-5 year groups a year later, at the end of their third year, were unfavourable (cols. 4 and 5). The judgments made in columns '1' to '3' were made using the systematic model, those made in columns '4' and '5' were made as a result of moving away from this model in order to seek a more dynamic explanation (see 5.5.5(3)).

*In examining the diagram, it must be noted that, while the 1974 comparison was based on seven courses, the 1975 one was only based on six. It is unlikely, however, in view of the very low rating of this excluded course, which was only a sub-unit of the sociology course, that it had much influence on the 1974 ratings.*
(7) In the first year that it was run, many students put an enormous amount of time into the exercise, often at the expense (Diagram 5.2(b)) of other courses, including their main subjects, but at the end of the exercise, they had very little concrete to show for all their effort, and when they were preparing for final examinations, they had not got a file full of notes to fall back on. In 1973 there was undoubtedly feedback from the 1972 group and some students started to make conscious decisions to limit their involvement (see 5.4.3(15)), but many again were deeply involved and, again, felt slightly let down at the end. Undoubtedly by 1974 the feedback ('x' and 'e') was much stronger and this year group were (f) certainly far more cautious in their involvement, although the analysis showed that many students were still highly involved. It is interesting to note that one of the leading members in this last run of the exercise eventually went on to get a First Class Honours in the fourth year B.Ed.

(8) The evidence for the above analysis is partly impressionistic but partly more firmly based. It needs to be noted that the second year students were all non-resident and had a single open-plan common room/work area for a base while in College (see 2.2(4)), and this encouraged the development of year attitudes. In 1973 and 1974 several students who dropped out from the exercise, or who did not become at all involved, made a point of telling me that this was their reason.

(9) The above conclusions were additionally supported by the replies of nineteen members of staff, representing a cross-section of age, academic background and subject area, when questioned about the simulation. Thirteen saw the potential of the teaching method, although most of these felt that it was wrongly timed in the students' course and that it really needed a block of time, devoted exclusively to it. Several noted the conflict the exercise provoked in students in terms of the demands of other courses and in terms of end-of-course assessment needs.

(10) Summing up the above analysis, the response of the year group to the simulation exercise changed subtly, but dramatically, over the three year period, mainly as a result of interaction between the demands of the exercise and those of other courses (b); between the exercise and the College assessment processes ('c' and 'p'); between these same assessment processes and the students ('p' and 'e') and between the students, the exercise and the hidden curriculum ('k' and 'f'). This led to students increasingly adopting survival strategies in terms of their response with some being prepared to give a lot of time to the exercise and others deciding to limit their involvement.

*Letters in parenthesis refer to Diagram 5.2*
5.7 AN 'ILLUMINATIVE' VIEW OF THE EXERCISE

(1) The previous section attempted to provide a broader interpretation of the response of the year group to this simulation exercise, but it is necessary to broaden the perspective even further, in order to achieve a fuller understanding. I want now to consider the development of the exercise set in the illuminative perspective of part ONE of this study and relating this perspective to the dynamic explanation of Diagram (5.2, but see 5.3.5(1)).

(2) The close-knit nature of the College campus, with its two lecture halls and central circulation areas certainly aided the organisation and dynamic of the exercise, as did the fact that the majority of the second year students used the 'outstudents block' as a recreational and study base (see 2.2(3, 4)).

(3) The uneveness in the size of successive year groups of students (see 2.3(3)) influenced (Diagram 5.2 'q' and 'c') the organisation of the course and the complexity of the plot (5.4.1(10)).

(4) It is impossible to assess directly the effect of student wastage (2.3.1), but the fact remains that 43% of the students leaving (p) before the end of their course, did so in their second year (see Diagram 2.6). Clearly this must have had some hidden effect (e) on those remaining and since this exercise took place in their second year, it must have indirectly influenced ('k' and 'f') student response.

(5) The turnover ('n' and 'x') of staff (2.4.1), while the exercise was run, certainly was a significant factor at the tutoring level, because some staff joined the College after the initial discussions about the simulation (5.3.1 (2-5)) had happened and were therefore not well briefed to help students tutorially during subsequent runs of the exercise. The relatively high average age of staff, and its lack of mobility (2.4.2(1)) when linked with the fact that both the teaching method and the subject matter of the exercise challenged (m) the College norms (see 1.5(2) and 5.2(3)) led (e) to some conservative responses. Some staff, when questioned (see 5.6(9)), expressed reservations about the exercise's demands"... haven't got brilliant students ...", others felt that 'good' students would see simulation as 'play'. Reservations were also expressed about my heavy investment of time and College money in resourcing the course, feeling that it was "over-ambitious" and "a one-man show". This led to "... some hostility ..." and "... raised emotional feelings ..." and these staff attitudes were communicated directly ('g' and 'i') to
myself and to students but probably influenced (j) the hidden curriculum even more strongly, gathering strength over the years and affecting ('y' and 'f') the response to the exercise. Parallel with this conservatism, other staff saw the exercise as valid but seeing it as an 'anticipatory experience' only making full sense in retrospect.

(6) There were some departmental differences in reaction to the simulation (3.12.2(3)), mainly brought about by main subject timetabling and set work demands. The P.E. students in particular, with their very heavily timetabled week, found it difficult to participate fully. Increasingly as the exercise progressed, the assessment practices of their total course (Diagram 5.2(p)) caused all students to reconsider (f) their level of their involvement in the simulation. There was some evidence to suggest (2.5.1(3)) differences in assessment standards between, as well as within, departments, and this probably affected the students, many of whom had difficulty with exams (see 3.12.3(2)) and some of whom were not well qualified for their main subject in terms of 'A' levels (see 3.9). In addition, there was during this period of time, a general change in assessment balance from final examinations to course work and this gradually increased the work pressure on students in their second year.

(7) Undoubtedly the growth (p) in the number of students considering a fourth year (see 2.6), was (e) another hidden factor. The fact that only 18% of the students who took the 1972 exercise, stayed for a fourth year, compared with over 30% of those who took the 1974 exercise, speaks for itself. 50% of the latter year group were seriously interested in the fourth year, although many failed to qualify in 1973 (see Diagram 2.15) but obviously the lack of assessment spin-off in the exercise must have affected ('k' and 'f') their response.

(8) The failure (5.4.3(5)) to use the back up resources during the simulation was certainly paralleled by the somewhat depressing picture of library usage, which emerged (see 2.7) and certainly the lack of breadth in the use of resources was paralleled by the over-use of only a very limited part of the total library collection (see 2.7.4).

(9) Turning to the students themselves, 45% of them lived (q) within a sixty mile radius of the College (see 3.2) and this certainly influenced (c, e and 'f') the dynamics of the simulation and prevented group meetings taking place at weekends. Additionally the low proportion of men (see 3.3)
was in one sense another limiting factor. Undoubtedly women students are still socialised in such a way that they tend not to assert themselves as much as the men students, and this was reflected in their general response to the exercise, although there were many exceptions.

(10) The age of students (3.4) proved to be a relevant variable, because the older ones had real life experience of the democratic processes the exercise was concerned with. Although some of the mature students felt inhibited in their response, because they did not wish to dominate, others undoubtedly helped their groups. Parallel with this, the exercise certainly stretched many of the younger students, because it demanded a maturity of approach.

(11) The school background of the students (3.5) was again significant, since only about 10% had had direct experience of comprehensive education (Diagram 3.4) and part of the central plot of the exercise was concerned with the reorganisation of schooling along comprehensive lines (see 5.4.1. (10)).

(12) The illuminative perspective also revealed that many students were 'first generation' higher education (3.6(1)) often coming from lower-middle class or working class backgrounds (3.7). Add to this the relatively poor 'A' level qualifications of the majority (3.8.1) and we have a number of interacting factors (Diagram 5.2 'n' and 'm') which probably influenced ('e' and 'k') students' response (f) to this innovatory teaching method at the level of the hidden curriculum. At a more general level, many of the less socially assured students found the committee discussions demanding, because they were forced by dint of their roles in the exercise, to make oral contributions, when they would have preferred to be silent.

(13) It is open to question as to whether the personality test administered on entry (3.10), really measured personality, but certainly that test showed that the College tended to recruit (p) a large number of extroverted students (Table 3.2) and this almost certainly helped (c) the social dynamic of the exercise. It may be, however, that this process of tending to recruit extroverts set up ('p' and 'm') normative standards which were likely ('e' and 'k'), at the hidden curriculum level, to account (f) for the lack of academic thrust in the exercise.

(14) Summing up, the illuminative perspective of Part One of this study, when linked with the dynamic explanation of Diagram (5.2) helps to give some breadth to our understanding of the development of the exercise. No single factor was of unique significance, but cumulatively, at the level of the hidden curriculum, they had a marked influence over the years the exercise was run.
5.8 THE EFFECTIVENESS OF THE EVALUATION

(1) The evaluation strategies used in looking at the exercise were largely unplanned and evolved as opportunity offered. In the early years they were extremely crude, growing in sophistication in later years. Formal written evaluations only took place from 1972 onwards (see Appendices B, C, F) and it needs to be noted that no other tutor in the education department carried out this kind of evaluation, and so the initial evaluations had something of a novelty value and were appreciated by students.

(2) The early evaluations were poorly set out and contained several unsatisfactory questions. It just was not possible, with short four-week courses, to administer pilot versions of these questionnaires, although in later years I used questions which had been successfully used in earlier years (see e.g. 5.5.3(13)).

(3) All questionnaires were answered 'named' rather than 'anonymously' and it was explained to students that they would only be processed by me and that no details would be fed back to other staff. It was also explained that names were needed in order to set this questionnaire against other known data. There were naturally some reservations and there were always a few unnamed responses, but, by and large, students co-operated and were not afraid to be highly critical.

(4) The development of the computer archive files (see 7.7.2.2(4)) containing course data collected over the years, undoubtedly enabled more informed judgments to be made about changing student response to the course.

(5) Evaluation is not a precise art, even when we talk about objective monitoring of objectives. To check on this I carried out some careful cross-checking of the evaluations made of the 1973 and 1974 exercises. Taking the 1973 exercise first, at its end students were asked to make a judgment about its intellectual validity (see Appendix C, question 9(c)). One week later this same group completed a semantic differential judgment on the simulation, which again included a judgment scale relating to intellectual validity (see Appendix U). One always needs to be careful in comparing judgments made in response to two different evaluation instruments, but McLeish (9) lends some limited support to the approach. There was only a low correlation of .24 between these two administrations, indicating some lack of consistency in these responses.
In order to check this relativity in evaluative judgments further, I gave an identical semantic differential to the students who took the 1974 simulation, immediately at the end of the exercise (Appendix F, question 1) and again at the end of their third year (Appendix G, question 10*) in 1975. Correlations ranged from .27 to .32 on the responses to the first four judgmental scales (see 5.5.3(13)) and there was an even lower correlation of .16 on the fifth scale, intense/relaxed.

The above analysis, while by no means conclusive, serves as a warning against attaching too much importance to so-called objective evidence. I have made use of this type of evidence where appropriate, but it is probably no more valid as evidence than some of the more subjective data I have also used.

As well as the formal evaluation, I held informal meetings with students to hear their views. The nature of the simulation demanded that I spent a considerable amount of time in the corridor displays areas working on the files. I found this provided invaluable opportunity to talk with individuals and small groups as they worked at the materials and this provided useful general feedback.

5.9 CONCLUDING JUDGMENT ON THE SIMULATION

This chapter has traced the growth of this extremely complex exercise from its very simple origins in 1969 to its final run in 1974. Starting from the lecture/seminar teaching pattern for theory of education, found in many colleges of education, the exercise developed into a unique format, so that my head of department, making a one term's sabbatical tour of a large number of colleges across the country, was able to report in an academic board paper:

"Nowhere was a simulation exercise so extensively used as in the 'Ambridge' material developed by G. Stodd in Bishop Otter". (p.23) (May 1973).

The initial mock education committee decision, in 1970 (5.2(1)), was an attempt to make students apply the economic concepts, introduced in the lecture. The full significance of this needs to be stressed, because the students were used to, essentially, content-based lectures, followed by rather generalised discussion in seminars.

The Appendix shows the 1974 version of this evaluation sheet. In 1975 the judgment on 'the simulation' was substituted for that on 'the treasure hunt'.
(3) The hostile rejection of the application of economic concepts to
education (5.2(2)), made me consider developing non-traditional teaching
approaches even further in order to meet this attitudinal rejection.

(4) The ground was therefore sown for the development of what can only
be called a complex learning experience. The long list of objectives
(Table 5.1) only gradually emerged, with most of them being formulated,
as I saw the possibility of adding a particular 'starter' for it in the
exercise. This implies that I did not see all students achieving a
common set of objectives, but rather I saw the exercise resourced, so as
to enable students to take it in a way unique to themselves.

(5) The philosophy behind this has been developed elsewhere in this
study (see 4.5), but broadly it recognises the very wide range of
intellectual ability in the year group as well as the wide range of
attitudinal response and professional interest. It also assumed the
need to provide 'concrete' learning experiences, to use Piagetian
terminology, in introducing these aspects of economics and democracy for
the first time into student thinking (see 4.2.7(5ff)).

(6) Again, as already indicated elsewhere (1.4(1, 2)), there was a
curriculum development emphasis to the teaching methods employed, with
the use of self-instructional teaching materials, examples of a wide
range of resources, collected and adapted for the exercise, and the use,
in 1973, of open plan teaching spaces (5.4.2(10)). These, together with
the fact that the students were forced to reconsider the aims of primary
and secondary education, gave the course a strong professional orientation.

(7) The open endedness of this exercise needs to be stressed, together
with the exposed position in which it placed me as course designer, each
time that it was run. Once the initial stimulus and timetable of
meetings had been given to the students, it was a completely open
situation as to what would happen. The fact that so many from the year
group entered into the spirit of the exercise each year is to their
credit, and is possibly a measure of the exercise's success, for it
could so easily have been a failure.

(8) It proved comparatively easy to develop a course involving
energetic but largely uninformed decision-making, as happened in 1972
(see 5.3.4(5)), but the key problem was whether it was possible to marry
a course giving this kind of experience with one which had intellectual
demand, and this was my concern in 1973 and 1974. The back-up materials
were detailed and based on West Sussex sources, slightly adapted for the
exercise (see 5.4.1(5)); the reorganisation proposals were couched in
the language of, and made use of, the birth projections, existing school sizes and alternative patterns of schooling, often found in real life proposals; the exchange of correspondence between the various village groups and the chief education officer demanded informed detail, in any proposals they made.

(9) Students as a whole saw this material as valuable, but only a small number studied it in great detail (see 5.4.3(5)), although many more could not fail but register the kind of factors which had to be considered in any school reorganisation. Undoubtedly the general College norms militated against this type of detailed use of data (see 5.4.5(3)) and it remains an open question as to whether students in more academically orientated institutions would have tackled this side of the exercise more thoroughly.

(10) In short, the exercise was successful in giving an experience of democratic decision-making, in developing self-confidence, in helping to develop the students as people, in developing a general awareness of economic issues, but it was not nearly so successful in achieving detailed application of concepts or analysis of the processes.

(11) This chapter raises a dilemma for any evaluation. The exercise certainly had a dynamic each year that it was run, and even in 1974, when it had lost something of its sparkle, there was good evidence of high involvement by students (see 5.5.3(2)). Each year, however, the evaluation at the end of the course (see 5.6(6)) reflected some caution on the part of students, and the low placement of the exercise, against all other courses at the end of their final year, was in striking contrast to the high activity, while the course was running in their second year, although it is partly explained by this student's point of view:

"... I personally feel I did too much work to no avail".

(12) This view provides a clue as to the real problem which faced the development of the course. The systematic model had led to my paying too much attention to the development of the course itself and the achievement of the course objectives and not enough attention to the students' own objectives. This had resulted in the course getting increasingly out of phase with the students' hidden curriculum.

(13) The main thesis of this chapter has been that the systematic model was helpful under its general headings, in that it helped focus my attention on the need to select appropriate teaching and learning
methods (see 5.3.5.1(1), 5.4.5(1)), encouraged evaluation (see 5.3.3, 5.4.3, 5.5.3) and revision in the light of this evaluation (see 5.4.5(1)), although it was somewhat simplistic in its linear flow lines (see 5.3.5.1(2)).

(14) The model was, however, too introspective and it was necessary to look at the dynamic systematic explanation of Diagram (5.2) in order to understand fully the development of this complex exercise. This explanation showed how the interaction with other courses (5.3.5.2(1), 5.4.5(3), 5.6(5)), the College teaching and learning norms (5.3.5.2(2), 5.4.5(3)), and social and academic processes (5.4.5(4), 5.7(4-7)) all influenced the hidden curriculum, affecting student response to the course over the years (5.6(6-10)). Additionally, it showed how other factors such as student background (5.7(9-13)), logistics and professional developments (5.4.5(6), 5.7(3)) equally helped to explain the development of and response to the course.

(15) A final judgment would be that the course was seen to be well resourced and to have a good dynamic, but it created a conflict for many students, and increasingly they were not prepared to be involved in a non-examination course. However, each year that it was run, the plea was made for a short block of time for the exercise, thereby removing the conflict with main subject and for the course to occur other than immediately before their second school practice. It was unfortunately not possible to achieve this.

(16) It is to the credit of the College, that support was given for the development of an innovatory course of such complexity, and that staff and technical resources were allocated. Without such a supportive framework, curriculum development of this kind could not be envisaged.
REFERENCES TO CHAPTER FIVE*
*Including reference to the Introduction to Part Three.


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CHAPTER 6: THE RESOURCE BASED COURSE

Diagram 6.1

MEAN RANK ORDER

- = OTHER THEORY OF EDUCATION COURSES
- = RESOURCE BASED COURSE

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<td>Professional</td>
<td>Relevance</td>
</tr>
<tr>
<td>Thinking</td>
<td>Openness</td>
<td>Relevance</td>
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Legend:
- Educational Technology
- Sociology
- Understanding
- Resource Course
- Simulation (Computerisation)
- Psychology
6.1 **INTRODUCTION**

(1) This chapter will describe the development and modification of an innovatory course in the philosophy of education between 1969 and 1977. It will continue the critical assessment of the strengths and weaknesses of the systematic model and the dynamic systematic explanation, started in Chapter Five and will again identify the limitations of the model and the strength of the hidden curriculum.

(2) Diagram (6.1), which is based on the course rating scale discussed previously (see 5.6(1-3) and Appendices G question 6, M and R question 1) shows the resource-based course set alongside all of the other theory of education courses followed by all students, showing the average ranking of this course on a number of criteria, compared with the average ranking of the other courses. Clearly the course became less popular between 1974 and 1976 but was well received in 1977. This diagram will be discussed in more detail throughout this chapter, but it poses the problem as to what went wrong with the course in 1975 and 1976 and how this was corrected in 1977.

**Diagram 6.2**

**PARTICIPATION ANALYSIS**

1974 - 1977

- = 1974  •  = 1975
- = 1976  •  = 1977

(a) SIGNED LIST TO FOLLOW AN AREA OF STUDY

(b) ATTENDED AT LEAST ONE OF THE SET SESSIONS OF THE COURSE

(c) BORROWED AT LEAST ONE OF THE RESOURCES FROM THE LIBRARY

(d) COMPLETED AN EVALUATION OF THE COURSE

Not available for 1974

Based on incomplete data
Diagram (6.2) poses the problem in slightly more detail and shows (a) that by 1976, nearly 12% of the students did not even sign up to follow one of the areas of study, let alone take an active part in the course. It shows (b) that in both 1975 and 1976 about 18% of each year group, even though they may have signed up to follow an area of study, failed to attend any of the set sessions of the course. It shows (c) a dramatic fall-off in reading on the course, even allowing for the incomplete data of 1976 and even shows (d) a fall-off in the number of students attending the final evaluation session of the course.

Diagram 6.3

![Participation Analysis] 1975 - 1977

- Low Resource Borrowers & Low Session Attendees
- Low Resource Borrowers & High Session Attendees
- High Resource Borrowers & Low Session Attendees
- High Resource Borrowers & High Session Attendees

*Discrete annual categorisation based on mean scores

(4) The problem is posed even more clearly in Diagram (6.3), with over 50% of the year group making a below average contribution to the course in both 1975 and 1976 and with only one year, 1977, having 25% of the year group highly involved in all aspects of the course. It is worth noting, in passing, that part of the reason for the low response in 1976 was due to the exceptional size of this year group (see Diagram 2.3(1973 column)), which had led to some teaching problems earlier in their three year course.

(5) This, then, is the problem, but first it is necessary to describe the overall development of this course (6.2), followed by analyses of the choice of optional study areas (6.3) and of the timetabled programme (6.4). The chapter will then consider the role of the seminar tutors (6.5) and the effectiveness of student work groups (6.5.2), followed by an extended analysis of the development, maintenance and use of the resources (6.6) and of independent learning areas (6.7). Finally, an attempt will be made to look at the course as a whole (6.8) drawing together the various strands of the main thesis developed in earlier sections of the chapter.
6.2 AN OUTLINE COURSE DEVELOPMENT 1969-1977

(1) Prior to 1969, the philosophy of education course had been taught by a pattern of year group lectures of 150 or more students, followed by small seminar group discussions, consisting of twelve to fifteen students (see 1.5(2)). I was already interested in the problem of getting students to think philosophically and had used role-playing to help achieve this in the 1968 course, by introducing the role play with a slide tape sequence, which presented a discipline problem (see Appendix E).

(2) This illustrates the two-fold problem I was wrestling with in developing the course. Firstly, to find a way of successfully teaching philosophy and secondly, to provide students with experiences of the newer approaches to learning, being opened up as a result of technological developments in audio visual hardware (see 1.4(1) and 4.5).

6.2.1 PHASE ONE

6.2.1.1 The 1969 Course

(1) In December 1968, the education department was asked to consider a draft outline of a new philosophy course (1), which aimed to make use of a resource-based approach (following that outlined by the Nuffield Resources for Learning Project (2)) which would give the students the opportunity to follow one of six optional areas of study: authority in education, freedom in education, rewards and punishments, moral education, streaming and comprehensive education. They were to be asked to study their chosen area and to arrive at an informed judgment about it. This proposal, which needs to be seen in the broader context of a departmental interest in newer approaches to learning (3), was then discussed and subsequently modified by the staff team in January 1969.

(2) The course ran in March 1969 for the first time and students were asked, in their seminar groups, to divide into two or three sub-groups, with each sub-group selecting one topic from the list of six. They were required, with their seminar tutors, to attempt to arrive at a 'reasoned opinion' about their chosen area of study:

"taking note of psychological, sociological and philosophical ideas, as well as listening to the opinions of teachers and other people".

It was left entirely to each tutor and seminar group to work out a detailed pattern of study.
(3) Each sub-group was given a work sheet containing a reading list, suggestions for practical work, as well as key philosophical questions for small group discussion. These work sheets were produced mainly by me with help from some members of the staff team and each area of study had a named staff team member who might be consulted in addition to the seminar tutors.

(4) Students were given open access to the following very limited range of non-print resources: 15 tape recordings, ranging from a recording of a BBC Reith lecture to a primary school broadcast; three slide tape sequences, including the previous year's discipline problem sequence (see 6.2(1)); three films and a file of newspaper cuttings.

(5) The basic method of work was in small sub-groups, working under the general direction of the seminar tutor. These groups arranged a weekly programme of activity and met their tutor at intervals during the half term's course.

(6) Certainly there was the appearance of the kind of learning situation discussed by the Nuffield resources for learning project, with students working independently at a line of enquiry; with a range of resources in different media; with something approaching a resources centre; with the tutor more of a manager of the learning situation rather than a teacher in it. In retrospect, however, it appears a very loose structure, although it must be remembered that this was a first try at creating a different approach to learning from the lecture/seminar pattern of previous years.

6.2.1.2 Concluding Judgments on the 1969 Course

(1) In general, evaluation at the end of the course (see Appendix A) revealed student satisfaction with this approach, summed up possibly by this comment:

"I found this one of the most stimulating and productive of the education courses".

This same student went on, however, to indicate the key problem which affected the course over the years:

"Because ... I was a group by myself and there was no guidance, and there were other pressures, I did not do as much as was possible".

The 'other pressures' in these final weeks of their course were concerned with examinations and reflected the anxieties identified in the analysis of students' study habits (see 3.12.3(2, 3)).
(2) I was pleased with the general level of response, and with the willingness to use non-print resources, but was unhappy about the amount of reading done and the fact that relatively few students felt that they were achieving a 'reasoned position' with regard to their chosen area of study.

(3) I fed back the main findings from this evaluation to seminar tutors in the following term and concluded by saying:

"A much clearer picture of the strengths and weaknesses of the course has emerged. It is now possible to plan with much more certainty next year's course. It is not claimed the analysis went to any great depth".

6.2.1.3 The 1970 to 1972 Courses

(1) The first phase of the development of this course continued until 1972, and the basic shape, described above, was modified, with a gradual tightening of the overall structure of the seminar work, a steady expansion of the resources, a lengthening of the course into the summer term and a gradual clarification of the course objectives and the underlying philosophy behind the teaching method.

(2) There was only limited evaluation of the course in this first phase of its development, with no opportunity for students to make written comments until 1972, but I obtained considerable informal feedback from students and more formal feedback from the staff team at team meetings. Two key problems were identified, concerned with the operation of the small groups and the development of the resources collection.

(3) With regard to the former, there were distinct difficulties in getting the seminar groups to operate successfully (see also 5.4.2(1)) and to combat these problems, each year saw a clearer definition of the study pattern under which students were expected to operate, including more detailed timetabling of meetings and an earlier choice of problem area of study (see 6.5.2(1) and 6.3(2)).

(4) With regard to the latter, each year saw an expansion of the resources and the development, in 1972, of a number of self-instructional study units. This expansion led to comments by tutors in 1971 that they did not feel able to advise students about this large resource collection and this led to the development, in 1972, of a guide to the resources (see 6.6.2(3)).

(5) Gradually, the philosophical objectives of the course were teased out. In 1969, they were a vague 'reasoned position'; in 1970, they were slightly clearer as seen in this end-of-course essay title:
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
"Consider the philosophical, psychological and sociological factors influencing the area you have chosen to study, and within your own limits, attempt to arrive at some evaluation of this evidence".

By 1972, these objectives had been clarified to the point that I was able to develop and administer an end-of-course objective test (see Appendix V), based on the Watson Glaser Critical Thinking Appraisal (4), which used content from the various problem areas of study, to assess the achievement of underlying critical skills, such as the recognition of underlying assumptions. Parallel with this, each year saw the underlying philosophy of the teaching method being made clearer to the students, in my introduction to the course.

(6) Something of the strengths and weaknesses of this first phase of development of the course can be caught from these extracts taken from a long evaluative report given to me by one student:

"I have found the course confusing, frustrating and, in some ways wasteful ... a pointless attempt to be 'with it' .... one of the reasons why we come to College is that here we may find a structured learning situation, which allows us freedom to explore, but ensures that we are educated in the given areas of knowledge .... of skills and technique we will require as teachers .... not everyone is capable (of structuring their own learning) and, indeed, for those who are, it is highly inefficient .... badly or non-structured learning wastes time, effort and resources and, in addition, causes frustration and annoyance and possibly anxiety .... The sheer quantity of materials is overwhelming and its classification is misleading and unhelpful .... I have looked at the meanings of the basic concepts; I have examined several philosophies; I have related a growing philosophy to my own basic Christian beliefs .... and practical education ...."

Many of these points will be commented on later in this chapter (see Diagram 6.22(9), and Diagram 6.29).

6.2.2 PHASE TWO - THE 1973 TO 1976 COURSES

(1) 1973 saw the start of the second phase in the development of this resource-based course with the abandonment of the seminar tutor system. My reasons for doing this will be discussed later in this chapter (see 6.5.1) but it followed from a College administrative decision, described in discussing the simulation exercise (5.4.1(2, 3)) to allocate a set number of contact hours to every College course and enabled me to concentrate on resourcing these two courses.

(2) In 1973, I still attempted to use small group work, by asking the students to work in friendship groups (see 6.5.2(1)) and by using a similar method of open plan work (see Plate 6A) to that described in
discussing the simulation exercise (5.4.2 (10-11)). Evaluation showed the groups to be unsuccessful, although students appreciated the attempt at open plan teaching, and so from 1974 onwards students worked individually or in informal small groups (see 6.5.2 (2)). Parallel with the decline in structured small group work, I developed an optional programme of lectures, discussions, films and workshops, which students signed to attend (see 6.4).

(3) Each year, from 1974 onwards, the students received the following at the start of the course:

Theory of Education - "Aims and Values"

Spring/Summer Term, 1974

The purpose of this course, placed as it is towards the end of your total College programme, is to enable you to study an optional area of study to some depth.

The areas chosen are ones which students have identified as particularly relevant to them as teachers.

*** The programme is flexible.

*** I will arrange visiting speakers if requested.

*** I will arrange visits if justified and if feasible.

*** You must keep a close daily look on the course notice board by student pips* (NOT A WEEKLY LOOK!).

*** You are invited to take an active interest in the display material.

*** Please make every effort to sign the list so that we know the level of support for every event.

*** This is your final course in College. I am willing to make every effort to make it a success; I can only do so with your active enthusiasm.

*** By the end of this course you should:

a) Have incorporated into your thinking ideas gathered from a wide range of sources.

b) Have modified and clarified your thinking as a result of discussion with others.

c) Have identified what is fact and what is opinion in the area you have chosen to study.

d) Have identified underlying assumptions or value positions in your chosen area.

e) Have considered the relevance of psychological and/or sociological and/or philosophical findings to the area you have chosen to study.

f) Have developed your own ideas about the area you have chosen to study.

* student pigeonholes.
Diagram 6.4

**ESTIMATED AND ACTUAL**

**STUDY 1974 - 1975**

(Spread of time for 3/5s of respondents)

- = 1974 ESTIMATE
- = 1974 ACTUAL (N=174)
- = 1975 ESTIMATE
- = 1975 ACTUAL (N=59)

**HOURS**

0 1 2 3 4 5 6 7 8 9 10

(i) BOOKS

(ii) FILMS

(iii) PHOTOCOPIES

(iv) TAPES

(v) SET SESSIONS

(vi) SLIDE TAPES

(vii) DISCUSSION

(viii) MEDITATION

- N.S.
- N.S.
- N.S.
- N.S.
- N.S.
- N.S.
- N.S.
- N.S.
(g) Have organised all of the above into some form of provisional unity.

(h) Have experienced working with structured teaching materials (using the study units).

(i) Have gained some insights into the classification of a wide range of resource materials.

(4) In the absence of seminar tutors, I felt it essential to provide a central information point for the course and a large display board was placed near to the student mail boxes. As well as containing details of a weekly programme of meetings, the board also contained space for special displays illustrating particular philosophical points I wished to get across and these will be discussed later (see 6.7.2 and Appendix E).

(5) In order to help students to have a framework for their course they were given work schedules each year (see Appendices H, L) which also provided me with invaluable feedback. A detailed breakdown of the schedules for 1974 and 1975 is shown in Diagram (6.4) and this will be discussed later (see 6.6.2.1(2)).

(6) I continued to develop the resource collection by expanding the collection of tape-recordings and moving the emphasis from whole books to photocopies of shorter extracts, drawn from books as well as other sources (see Diagram 6.13). By 1975, all of the resources were housed in the library and were available on short term loan.

(7) The end-of-course evaluation test, first developed in 1972 and revised in 1973 and 1974 (see Appendices V, W, X), was given each year until 1976. It helped me to monitor the achievement of some of the critical skills (see para. 3 above) and provided a formal end to the courses, linked in with an extended evaluation of each course (see Appendices D and G). It was dropped in 1976 in order for a more open-ended evaluation to take place (see Appendix M, question 6).

Diagram 6.5

<table>
<thead>
<tr>
<th>FREQUENCY OF STUDENT COMMENTS</th>
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<tbody>
<tr>
<td>ON COURSE AS A WHOLE 1974 - 1976</td>
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<table>
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<tr>
<th>Frequency</th>
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<tr>
<td>10</td>
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<tr>
<td>70</td>
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<tr>
<td>80</td>
</tr>
</tbody>
</table>

(1) Method appreciated
(2) Open-ended good
(3) More structure
(4) Conflict-other courses
(5) No motivation
(6) More discussion
(7) More tutors needed
"... in 1974, 1976 and 1977, I provided some feedback to students in mid-course focusing particularly on the use of the resource collection".  

(6.2.2(9))
(8) I carried out detailed evaluations for each year of this second phase of the course, giving some feedback at the start of the following year's course. Also in 1974, 1976 and 1977, I provided some feedback to students in mid-course focusing particularly on the use of the resource collection (see Plate 6B).

(9) Despite all this careful development of the course, student response became less positive in 1975 and 1976, and it was not until after the 1976 course that I really came to terms with the reasons. From 1974 onwards, my evaluation was based on four things: subjective observations and conversations with students, rank order placement of the course against other theory of education courses (see 6.1(2)), responses to a semantic differential judgment on the course (see Diagram 6.6 and Appendices G question 10 and M question 5), and written comments, often unsolicited, made on student response sheets (see Diagram 6.5).

(10) The results of this evaluation revealed some ambivalence in student response. This can be seen in Diagram (6.5) comparing the first two comments with the others. It can also be seen when the semantic differential judgments of Diagram (6.6) are compared with the rank order judgments of Diagram (6.1). The semantic differential judgments were basically favourable, even in the poor 1976 year, whereas the rank order judgments clearly became less favourable between 1974 and 1976.

(11) A clue to the reasons for this ambivalence can be found in the following student letters, received during the 1974 and 1976 courses:

"... we would like you to know how much we are enjoying this piece of work."

"The choice of topic and of materials available leaves much to our personal needs and taste, and we enjoy the opportunity of working at our own level, interest and speed."

"We feel that congratulations are in order, as we have been dissatisfied with so many previous courses! The only drawback is that the present third year have so much other work to do at the moment that we cannot devote the time to the subject that we would like to give ..... thanks for giving us an interesting last fling".

(A letter from three students - 1974 - my underlining)

"We feel the content of the course could be valuable in the practical situation ..... and the study of these areas worthwhile ..... but ..... the majority of students are very busy at present on individual work ..... in main subject and education ..... Another area of mainly optional study is not welcome ..... we feel it would have been more acceptable to have ..... lectures, followed by discussions ....."

(A letter from nine students - 1976 - my underlining)
Diagram 6.6

Judgements on the Resource

Based Course 1974 - 1977


Good

Very Nice Only Slightly Neutral Only Slightly Bad

Active

Passive

Not Intellectual

Complex

Simple

Relaxed

Intense

Non-Responders

1974 = 3 average or 2 %
1975 = 7 " or 7 %
1976 = 5 " or 3 %
1977 = 9 " or 8 %

* Response of two thirds of all respondents
(12) Although the course was well received, it clearly occurred at a
difficult time for most students, resulting in conflict with other
courses (Diagram 6.5(iv)). In addition, it competed with the
independent studies produced at the end of their three year courses
in main subject and in education. This was no new phenomenon because
it will be recalled that even as early as 1969 I received a comment:

"... stimulating and productive ... there were other
pressures ..." (see 6.2.1.2(1)).

(13) In short, the course had come into conflict with the hidden
curriculum and this will be discussed more fully later (see 6.2.4 and
6.8.3.4).

6.2.3 PHASE THREE - THE 1977 COURSE

(1) We now move to the final phase of this course development. By
1977, I had unwillingly come to terms with the power of the hidden
curriculum, although I still did not fully understand its separate
aspects. I recognised, however, the need to modify the course even
further.

(2) Due to changes in final examination procedures (see 6.8.3.3)
it was no longer possible to allow the course to run on into the summer
term and so it was restricted to five weeks only in the spring term.

(3) I kept the basic pattern of previous years but imposed more
structure (see 6.4(4)) and reintroduced a written task (see Appendix N)
in the final week of the course. The written task was to be a mock
examination with a choice of questions, relating to the five areas of
study. Students were told that these would be marked over the Easter
Vacation according to the following criteria:

(i) a clearly developed argument;
(ii) originality and independence of arguments;
(iii) use of accurate factual support from practice and/or
the literature;
(iv) discussion of the implications of evidence used;
(v) identification and discussion of value questions;
(vi) ability to identify underlying assumptions behind
theory and practice;
(vii) elaboration of the meaning of concepts;
(viii) breadth of reading.

(4) These criteria clearly represented a change in emphasis in the
course in that 'iv' to 'vii' repeated the philosophical objectives
identified earlier in this chapter (see 6.2.1.3(5)), whereas 'i' to
'iii' represented my growing concern with the structure and independence
of student essay writing.
"... to encourage the use of the resources
... I placed a large display thermometer ...

(6.2.3(7))
Their answers, together with a feedback profile (see Appendix A), were given back to the students at the start of the summer term. The profile enabled them to set their personal scores on each of the criteria against the mean score and standard deviation of the year group as a whole.

Turning to the set programme of the course, in addition to signing lists indicating the sessions they wished to attend (see also 6.2.2(2)), they were also asked to sign lists when these sessions were actually run and to complete an evaluation of them (see Appendix P). I also sent out a mid-course circular to all of the students indicating that I was closely monitoring the way they were responding to the course.

In order to encourage the use of the resources, but clearly recognizing that borrowing need not imply studying, I placed a large display thermometer (see Plate 60) on the course notice board, which showed the overall issues on the 1974 and 1975 courses and showed, as the 1977 course progressed, the relative borrowing of that year group.

I have indicated above how a number of slight but significant changes were made to the course to give it a greater degree of structure in the light of the 1976 depressing evaluation. The response of the year group was out of all recognition and students appeared to be highly motivated throughout. This very positive response was again helped by the very unified nature of the College campus described in Part One (2.2), which helped in the forming of year group attitudes to these innovatory courses (see also 5.7(2)).

In drawing out the main thesis implications of the development of this resource-based course, detailed reference will again be made to Diagram (5.2) and attention is drawn to an earlier note (see 5.3.5(1)). Subsequent sections of this chapter will discuss these implications in detail and this present section will only provide a general discussion.

As with the development of the simulation exercise, the systematic model (see cylinder 'A' of Diagram 5.2) provided a basic framework for the development of the course, but again it was somewhat simplistic. Its strengths were that, at the design stage, I tried to match media and teaching methods, which were appropriate to my objectives (see e.g. 6.2.1(4)) ; that, at the evaluation stage, the course was closely monitored over the years, albeit somewhat irrationally during Phase One.
(see 6.2.1.2, 6.2.1.3(2), 6.2.2(8)); that, at the improvement stage, the course was modified over the years in the light of these evaluations (see 6.2.1.3(1, 3, 4), 6.2.3(1)); that tutors and students usually received feedback from the previous year's course and indeed while their own course was in operation (see 6.2.1.2(3), 6.2.2(8), 6.2.3(6, 7)).

(3) One of its weaknesses was in the area of definition of objectives. As with the simulation exercise, the objectives were initially unclear (see 6.2.1.1(2)) and were only gradually clarified (6.2.1.3(5), 6.2.2(3), 6.2.3(4)) as the years went by. The objectives, as finally formulated in 1977, represent the end product of the interactive development of the course over the years and the systematic model does not easily allow for this type of evolutionary development, functioning at its best in developing and revising a course to achieve pre-stated objectives.

(4) Probably more fundamentally, the model hindered the development of the course because of its lack of cognisance of the impact of the hidden curriculum, repeating the introspective process identified in the previous chapter (see 5.9(14)). This led to a situation in which the hidden curriculum was clearly a significant influence on the course over the years (see 6.2.1.2(1), 6.2.1.3(3), 6.2.2(9, 11-13)), but which I failed to appreciate fully until after the 1977 run of the course.

(5) Turning from the systematic model to the dynamic systematic explanation of Diagram (5.2) while the detail will be developed in later sections of the chapter, we need to note that many of the constraints shown in cylinder 'C' certainly influenced the course. Tutor and student norms were (m) tested by the teaching method used (6.2.1.3(3, 6)); logistical changes in staff work load allocation caused (q) a major change in the teaching method (6.2.2(1)); improved physical plant and equipment again (o) influenced the development of the course (6.2.2(6)) as did professional (u) changes in school building design (6.2.2(2)). All of these constraints had a greater or lesser influence ('e' and 'c') on the course, particularly through student and staff response ('j' and 'k') at the level of the hidden curriculum (f).

(6) This initial outline has opened up the main issues of this chapter, and the following sections will consider particular aspects of the course in order to highlight them more clearly, starting with an examination of the way students set about choosing one of the optional areas of study.
6.3 AREAS OF STUDY

(1) The course was originally conceived as having six optional areas of study (6.2.1.1(1)), but these were later modified to five by combining 'freedom' with 'authority'. Diagram (6.7) summarises the level of popularity of these different topics over the years, revealing an understandable student preference for topics concerned with the problem of control.

Diagram 6.7

(2) The most significant aspect of these areas of study was the way in which the choice of area was made by students. The course occurred in the second half of the spring term following a final school practice in the first half of the term. In the first year that the course was run, students chose their study area immediately after half term, at the start of the course itself. As course designer, I recognised that the choice really needed to be made before the school practice, in order to provide a firmer link between theory and practice, and I questioned students about this in the final evaluation (Appendix A, question 2).

(3) During the course of the next three years, as a result of feedback from students, the choice point gradually moved back from the start of the course itself to the end of the preceding autumn term. On paper this appeared to be an ideal curriculum development solution, with the course being modified in the light of student views. In practice, there was a gap between students' ideal judgments and their practical response and, although they made a choice of study area at Christmas, for as many as a
half of the year group the choice appeared to be quite arbitrary, with many changing their minds once the course was under way.

6.3.1 MAIN THESIS IMPLICATIONS OF THE CHOICE

(1) The way the area of study was chosen illustrates clearly the strengths and weaknesses of the systematic model and of a need for the dynamic explanation. Looking at the systematic model of Diagram (5.2 (cylinder 'A')), the stages of 'evaluation' and 'improvement' were used over the years to modify the timing of the choice until a theoretically ideal and mutually agreed choice-point was identified.

(2) The systematic model itself was not, however, able to predict students' actual behaviour, whereas Diagram (5.2) as a whole does explain this. The pre-Christmas choice-point meant that, in practice, the choice was in conflict with the social and academic processes (Diagram 5.2 'p') which occur at the end of term, namely, written work deadlines, festivities, packing and final school practice preparation. These led (e) to students making a choice ('k' and 'f') but, at the level of the hidden curriculum, it was often somewhat arbitrary.

6.4 THE TIME-TABLED PROGRAMME

(1) The hand-to-mouth immediacy of the choice of subject area applied to a certain extent to student response to the timetabled programme. In the early years of the course the work was almost totally done in small seminar based groups (see 6.2.1.1(ff)), but from 1973 onwards (Diagram 6.8), with the dropping of seminar tutors, the set programme was considerably expanded, rising to a peak in 1976 because of the very large number of students in that year group (see Diagram 2.3 (1973 column)).
This set programme of optional sessions, occurring, as it did, towards the end of their course, was well supported even in the poor 1976 year (see Diagram 6.3), with students appreciating its open-endedness (Diagram 6.1 'e'). It created, however, two problems for me as course designer, firstly in knowing the nature of student take-up of the programme in terms of attendance at sessions, and secondly in obtaining their evaluation of the sessions. My attempts to provide an answer to this course development question resulted, however, in a significant change in the nature of the course and this will be discussed later (see 6.4.1).

Between 1973 and 1976, students signed lists indicating their intention to attend particular sessions (see 6.2.2(2)). This signing of lists had two main purposes for me as course designer, in that it enabled me to match room accommodation to group size and, secondly to cancel any session which was going to be seriously undersubscribed. I was always aware, however, of considerable evidence of students changing their minds in the actual sessions they attended.

I felt that I needed to know more about the way students responded to this open-ended programme of sessions and I obtained limited feedback between 1974 and 1976 by analysing completed work diaries (see Appendices H and L) but more detailed feedback in 1977 (see Appendix P). In addition to the diary in 1977, students still signed lists, indicating an intention to attend and, in addition, signed an attendance sheet at the session itself.

Looking at this feedback in more detail, Diagram (6.9) summarises the 1977 course. The square represents the total number of attendance decisions possible if every student had attended or expressed interest in every session on the course programme, and it can be seen that just under 40% of the maximum possible decisions were taken up. However, while two thirds of these latter decisions were made by students who signed the lists and actually attended the sessions, nearly 12% were made by students who signed the lists but failed to attend, and a further 13% by students who did not originally sign to attend the sessions, but who actually attended, when it was run.

As with the somewhat arbitrary choice of their area of study
there was again evidence to indicate a similar arbitrariness in their support of the time-tabled programme, and it is quite likely that in earlier years, when students were not asked to sign attendance sheets (para. 4 above), this arbitrariness would have been even greater. We need to add to this the fact that, while the majority of students between 1975 and 1977 attended sessions directly related to their area of study, some 15% attended sessions which were of general interest and not related to their chosen study area.

(7) Turning to the evaluation of the individual sessions in the 1977 programme, this monitoring technique produced excellent feedback, summarised in diagram (6.10). On average, 80% of students attending each session provided some evaluation of it. The detailed evaluation will not be discussed, but will clearly be used in designing future programmes.
6.4.1 MAIN THESIS IMPLICATIONS OF THE SET PROGRAMME ANALYSIS

(1) This analysis has highlighted a limitation in the systematic model which is not self evident and which will occur again in a later section of this study (see 6.6.3.1(3)). The model rightly has 'evaluation' as one of its central stages, but this created an insurmountable problem in a course designed to promote open-ended enquiry (see 6.2.1.1(2), 6.2.2.2(3)).

(2) The philosophy behind the course aimed at student autonomy in learning and in its early years I was content to give this priority. My need for more detailed evaluation in 1977 (see 6.4(2)) made serious inroads into this autonomy (see 6.4(4)), fortunately without too much damage (see Diagram 6.1(e)).

(3) It may be worthwhile considering this in terms of the dynamic systematic explanation of Diagram 5.2 (but see 5.3.5(1)). My need, as course designer, for evaluation affected (f) the design of the course (6.4(4)), but my concern was also communicated both directly (h) to students (see e.g. Appendices H, L and P) and also indirectly ('l' and 'k') at the level of the hidden curriculum (see e.g. 6.2.3(6)). This, in turn, led to an interaction ('e' and 'm') for students between the teaching methods of the course and their college norms. There was strong evidence over the years that many students found the open structure of the course very demanding (see e.g. 6.2.1.3(6), 6.2.2.11 (second letter)), 6.8.3(4)), and the greater structure which resulted following my need to check the response to the set programme, in fact made the course coincide more closely with student norms by giving more direction to their study. It led (c) to the more positive overall response to the course previously described (see 6.2.3(8)).

(4) Summing up the argument, the concept of evaluation is central to the systematic model, but it creates major difficulties in less structured courses. It can be achieved, but this analysis has shown that this can only be done at some cost to the basic shape of the course.

6.5 THE SEMINAR TUTORS AND STUDENT WORK GROUPS

(1) Having looked at the response to the set programme the argument will now focus in the next two sections on the seminar tutors and the student groups. It will again highlight the somewhat simplistic nature of the systematic model in that it fails to take note of the psychological and sociological factors which influence the teaching of any course.
6.5.1 THE SEMINAR TUTORS

(1) The outline of the course has already indicated (6.2.1.1(1-2)) how seminar tutors were involved from the very beginning in the planning of this innovatory course and how, during its first four years, the course revolved round the seminar group. This meant that once the course was launched, I had very little contact with the year group as a whole, but had clear feedback from students indicating that all was not well in at least some of the seminar groups. I therefore dropped the tutors in 1973 (see 6.2.2 (1, 2)) and modified the teaching method as a consequence.

(2) In general, the problem was that tutors were, to a greater or lesser extent, alienated from the teaching method being used for the course. Several education department courses had run into this kind of problem which was summed up in a departmental discussion (5) in June 1971. Taking one example, a theory course which dealt specifically with educational technology, ran into difficulties with the seminar tutor system in 1970. The course broke new ground so far as seminar tutors were concerned, and therefore the course designer, Mr. N. Trowbridge, held regular meetings with the course team, but his evaluation at the end of the course revealed, however, severe problems with the use of seminar tutors.

(3) The following quotations from his end-of-course evaluation reveal the problem:

(i) ".... every attempt to make an appointment with the seminar tutor is ignored".

(ii) "It would have helped if:
(a) my tutor had shown some enthusiasm;
(b) he had known something about the course;
(c) he had replied to at least one of the three notes asking to see him at various times."

(iii) "The tutor was no wiser than the rest of the group".

(iv) "When there is blatant criticism from tutors who are supposed to be guiding students and consequently to have an understanding of the course's aims, something must be seriously amiss. It is either the course or the tutors".

(4) I received several similar comments in connection with this resource-based course, both orally and also written, by way of extra comment, on end-of-course evaluation sheets. It is understandable that students, just before finals, should be critical of their tutors, but the level of comment summarised in Diagram (6.11) and in the comments overleaf, gives food for thought:
"Slides of these comments were placed on a projector in a corridor independent learning area ..." (6.5.1(4f))

"... displays and structured work units ... set up in the main corridors ... open to all students ... outside the formal teaching courses". (6.7.2(1))
*Diagram 6.11

**Student Reaction to Open Comments About Tutors Made by Other Students**

N = 43

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) We are made to wonder if lecturers ever prepare</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Very few tutors impress as good teachers ... blind leading the blind</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) A small number ... work hard, while less ... active colleagues sit on their bums.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) I am disillusioned by the ... lecturers who seemed so promising in the 1st year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) I wish I could bluff like some of the staff here can.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Seminar tutors are renowned for criticising courses in which they have not actively been involved.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(i) "Every tutor ought to (put in a lot of work) but on the whole doesn't".

(ii) "Tutors do not feel a personal involvement ...." 

(iii) "A study of tutor contribution would certainly be profitable".

(iv) "Seminar tutors are renowned for criticising courses in which they have not been involved actively". (See Diagram (6.11)-6)*.

*References made in this section to student comments are reinforced in Diagram (6.11) which records the attitude of 43 other students to each of these comments. Slides of these comments were placed on a projector in a corridor independent learning area, and the 1977 year group were invited to fill in their response to them. 33% of the year group took this open opportunity to fill in the response sheet, although many more looked at the 34 slides out of interest. (See Plate 60).
There was, then, some evidence of tutor alienation from the teaching method used on this course and this will now be explored in more detail under five separate headings.

6.5.1.1 The Problem of a Student-Centred or Discipline-Centred Approach

(1) Michael Eraut, in a recent conference paper (6), very usefully highlighted four potential areas of conflict in any curriculum development, namely, subject matter, outcome and objectives, teaching method and assessment. He says:

"Since many teachers have aims that take them in all four directions, there is bound to be conflict" (p.3).

(2) I have already indicated (1.4(3), 2.2(6)) that the College worked in a child/student-centred tradition of teaching, typified in this comment from a 1971 Academic Board paper on the Sussex University report, 'Learning for Teaching' (7):

"Overall the effect of the Report of the Teachers' Certificate Working Party has been one of stimulation and motivation towards further exploration of learner-centred methods of education in this College". (8).

(3) Eraut argued that teachers working in a student-centred tradition were unlikely to be favourably disposed to courses emphasising objectives and skills. The resource-based course, while certainly attempting to be student-centred (see e.g. 4.5(5)), also emphasised objectives and skills (see e.g. 6.2.3(4)) and thus was slightly at variance with the College norms. It was also at some variance because of its emphasis on separate disciplines rather than on an 'integrated' approach to knowledge as can be seen by a study of the education department documents (9, 10, 11, 12). Put another way, the education department tended to emphasise professionally oriented 'integrated' teaching methods, with no clear place for the underlying disciplines, whereas I argued for a greater emphasis on underlying methods of enquiry.

6.5.1.2 The Problem of Tutor Attitudes to Educational Technology and Innovation

(1) The Education Department minutes record quite heated discussions about educational technology in September 1969 (13) and again in October 1970 (14) and these discussions highlighted a deep division in departmental thinking over the systems approach and the potential of the new media.
The College clearly saw itself as innovative (see 6.5.1.1(2), 2.2(7)), and was also seen to be innovative by other professionals, as evinced by this reported comment by a London lecturer, made completely away from any College context with reference to part of the foundation course (see 1.4(2, 3)):

"Only Bishop Otter College would have dared to attempt this type of teaching method".

I equally felt that some of its approaches had a high degree of originality and potential, but my own judgment was that they were often lacking in detailed resourcing and follow-through. Educational technology with its emphasis on explicit objectives and evaluation did not fit in to this 'innovative' climate and, in addition, the move to independent learning methods, implicit in the potential of the new educational hardware, was seen as a threat to the valued face-to-face contact with students in small groups, which was the College teaching norm.

It was understandable, therefore, that tutors should have some reservations about their role in this resource-based course, which was so closely associated with the new technology.

The sources of possible alienation, considered so far, have all been concerned with the teaching method itself, but there were three other sources, which need to be examined. These are the lack of staff philosophical expertise, their lack of knowledge of the resources and finally, the lack of a clearly defined role for the tutors.

6.5.1.3 The Problem of Non-Specialist Tutors

Ideally, a course in the philosophy of education needs the presence of a tutor with philosophical expertise, and it is significant that in 1968 the seminar tutors were asked:

"... to help students to think more clearly and critically. They should be encouraged to move away from a broad general statement to a more critical and specific analysis of terms we commonly use".

The problem was that the seminar tutors were recruited from within both the education and main subject departments and had little or no philosophical background. It is not, therefore, surprising to find that the evaluation of the 1969 course (Appendix A question 7) revealed that
only 23% of the responders felt that they had discussed some of the philosophical questions, which had been outlined on the work sheets (see 6.2.1.1(3)) at a formal seminar group meeting, although 39% claimed to have discussed these questions informally with friends.

(3) By 1972, when many of the philosophical objectives of the course were clear (6.2.1.3(5)), I was firmly convinced that many of the course tutors, partly because of their own initial academic background (see 2.4.3(3)), were ill-equipped to help students achieve these objectives, possibly accounting for the following student comment:

"I wish I could bluff like some of the staff here can".

(see Diagram (6.11) no. 5).

6.5.1.4 Tutors' Detailed Knowledge of the Resources

(1) The resourcing of the course will be considered in detail later (see 6.6) but undoubtedly one major source of difficulty for tutors was their lack of detailed knowledge of the resources (see 6.2.1.3(4)). The resource collection was fundamental to the course and undoubtedly assumed that tutors would have a knowledge of the resources but, in retrospect, it is possible to see that this was never a realistic possibility. Ironically my attempt in 1972 to meet this difficulty, by developing a classified guide to the resources as a student and tutor aid, succeeded in making the tutors superfluous, by giving students direct tutorless access to the resources.

(2) Although it can only be a tentative deduction, it may be that the low usage of the library by staff, discussed in Part One (see 2.7.2(2) and 2.7.3(4, 5)), may also have been a contributory factor.

6.5.1.5 The Tutor's Role in a Resource-Based Course

(1) Finally the tutor's role was not clearly prescribed (see 6.2.1.1(2)) and it relied on the tutors achieving their own definition of their role with some tutors finding this openness difficult. They realised that they were being asked to adopt a role which was, to a certain extent, un congenial, and tended, therefore, to adopt avoidance strategies to limit their involvement. In short, psychological problems of tutor as opposed to student motivation were at work. The review of the literature (4.3.2.6(1) and 4.3.2.7(6-18)) is clearly relevant here.
6.5.1.6  Main Thesis Implications of the Analysis of Seminar Tutors

(1) To sum up, this section has discussed five possible sources of alienation, which may have affected some of the seminar tutors. The analysis reveals another possible criticism of the systematic model in that it only really provides for student learning objectives and fails to take note of teacher objectives, which may well be different, particularly in a team-teaching situation.

(2) The dynamic systematic explanation (Diagram 5.2, but note 5.3.5(1)) helps to explain what happened more clearly. There was certainly an interaction (b) between the teaching method used in the resource-based course and the methods used on other education courses and some of the difficulties with using seminar tutors undoubtedly stemmed from these other courses (see 6.5.1(2)). Some tutors clearly experienced a lack of satisfaction with the seminar-based education work as a whole, and this led them (d, j) to take survival strategies during the resource-based course.

(3) Parallel with this, other factors such as the student-centred norms of the College (6.5.1.1(2, 3), 6.5.1.2(3)), the attitude of staff to the expanding audio visual equipment (6.5.1.2(1, 3)), the academic background of course personnel (6.5.1.3(3)), and their library borrowing habits (6.5.1.4(2)) interacted (m, o, n, p) to influence ('c' and 'e') staff response to the course both at the level of the overt curriculum (g, i, and 'f') and at the level of the hidden curriculum (j, k, l and 'f').

(4) This provoked a complex problem for any course designer to resolve, because at one level tutors were supporting the course, whereas at a hidden level they were either neutrally or negatively disposed towards it. The problem was even more complex in psychological terms, because many of the tutors would be partially unaware of their survival strategies.

(5) Diagram (5.2) does not provide a completely objective account of the way seminar tutors responded to the resource-based course, but it may be that it provides at least a deeper insight into the quality of their response.

6.5.2  THE STUDENT WORKING GROUP

(1) The somewhat simplistic nature of the systematic model will again be revealed in this analysis of the effectiveness of the seminar groups. In deciding to make small group work a central learning strategy for the course, I was using the 'design' stage of the model (see Diagram 5.2, cylinder 'A') and, in tightening the constraints under which the groups operated (see 6.2.1.3(1,3)), I used the 'evaluation' and 'revision' stages. Despite this, the groups still did not operate effectively, with
"In 1977 ... students were invited to show visually the groups they had operated in ...". (6.5.2 (4))
18% of the students making unsolicited comments to this effect in 1972. The 'design' stage of the model was again followed, in attempting to use informal friendship groups in 1973, but these groups were again unsatisfactory (see 6.2.2(2)), with only 28% of the students liking them and 45% of the students convinced that no form of structured group work would ever work (see Appendix D, question 2).

(2) Structured group work was therefore completely dropped from 1974 onwards (see 6.2.2(2)), leaving students to use informal groups if they wished, but I continued to follow the 'evaluation' stage of the model, by trying to monitor the way this informal group work operated in practice.

(3) In 1974 and 1975, students completed a written answer (Appendix G, question 12) and this appeared to show that the average student spent about 1.8 hours of time during the course working in an informal group with four other students. I attempted a more detailed analysis of the 1974 data to see if I could find out more about the composition of the groups. The size of the friendship matrix (194 x 194 students) precluded traditional sociometric techniques (15) being used, but plotting of choices showed that 39% were reciprocated by the student chosen, revealing some reliability in these results. Following this, students were allocated to what appeared to be their most natural group, but because I had reservations about the subjectivity of this method, the analysis was not repeated in 1975.

(4) In 1977 a different method was tried and students were invited to record visually (see Plate 6E) the informal groups they had operated in. Some 82% of the students responded to this request and recorded the information on a public display board, revealing that 59% of them had worked independently and that 30% had worked in groups of three or more students. There was common ground between the 1973, 1974 and 1977 analyses and it would appear that about 30% of each year preferred to work in groups, while many others preferred to work independently. This finding would appear to have some importance.

(5) Probably the most significant thing to emerge from this analysis of both 1974 and 1977 was the social composition of the groups shown in Diagram (6.12), which attempts to summarise the composition of the 31 student groups of 1974 and the 15 groups of 1977, looked at in terms of six criteria. Any group was deemed to have satisfied each criterion, if 75% or more of its members conformed with it. In practice, this meant
that a group of two or three students needed all of its members satisfying the criterion, before they could feature in this analysis, whereas a group of four students would just satisfy it if three out of its four members conformed.

(6) Looking at Diagram (6.12) in greater detail, the analysis is very revealing in that it shows the groups to be usually single-sex (1); often training for the same age-range of teaching (4); based in the same student hostel (3) and composed of students following a very limited range of main subjects (5). There was a tendency for the groups to have little homogeneity in terms of personality characteristics (6), but to have greater homogeneity in terms of social class composition (2), although this latter variable was only monitored in 1974.
(7) In short, the groups in which students worked were homogeneous in composition and often hostel based. The importance of the College hostels, in terms of student response to these innovatory courses, was noted in Part One (see 2.2(4)) and fourteen students remarked on the value of hostel group discussions in the open comments written at the end of the 1974 course (see 6.2.2(9)).

6.5.2.1 Main Thesis Implications of the Working Group Analysis

(1) It is again necessary to turn to Diagram (5.2) to understand the implications of the above analysis (but note 5.3.5(1)). My attempts to use small group work as a central learning strategy of the course and my modification of this strategy over the years (see 6.5.2(1)) reflected the fact that, in designing the course, I was highly dependent on the systematic model shown in cylinder 'A'. The fact that the strategy was never successful reveals the limitation of the model in its failure to take account of the rest of Diagram (5.2).

(2) As course designer, I had a defined set of expectations for the small group work (see e.g. 6.2.1.1(1, 3), 6.2.2(3)), and these were communicated (h) to the students, but whereas my expectations were mainly based within cylinder 'A', their interpretation of them (6.2.1.1(2), 6.2.1.3(3), 6.2.2(11)) was more complex, since it was based also within cylinders 'B' and 'C'. Their response to my demand for small group work was partly influenced by their experience of the method on other courses (d) and partly by their interpretation (e) of the interaction between seminar tutors (n), the total curriculum (r), academic processes, such as impending final examinations (p), College norms (m) and the resource based course itself (c) and this led to a response (k) at the level of the hidden curriculum.

(3) Put in more descriptive terms, I was placing students in an open-ended learning situation, in which they defined their own timetable and learning activities and where the leadership was to be student rather than tutor-centred. I implicitly hoped that in the final year of their three year course they would possess the self-discipline needed to follow through the logic of any argument; to tease out the meaning of terms; to challenge the views of others coherently and honestly and to attempt to synthesise their views. My objectives for the students were not realised in practice and were possibly unrealistic. The result was that, although theoretically
working in groups, the majority of the students worked independently. Undoubtedly the tendency for students to work a five-day week (2.7.1(3)), partly occasioned by the close proximity of many to their own homes (3.2), and the wide differences in the time allowed for independent study in different main subjects (3.12.2(3)), contributed to this move to independence.

(4) Drawing together the main argument of this whole section and focusing on the central triangle of Diagram (5.2), I have tried to show that both seminar tutors (6.5.1.6(3)) and students (6.5.2.1(2)) made a significant response (f) to the course at the level of the hidden curriculum and that this resulted in the final abandonment of small group work for the course in 1974. In addition, I have attempted to suggest that the systematic model proved to be too limited in failing to take account of the impact of the hidden curriculum.

(5) Finally, we should note that there were lessons to be learned from the review of the literature (4.3.2.7) in terms of the chemistry of small groups and, referring to Diagram (5.2), these factors clearly influenced the course (v) particularly in the area of group leadership, dynamics and norms, and I should have made greater use of the literature in designing the course.

6.6 THE RESOURCES

(1) The argument turns now to another major aspect of the course, the resource collection, and will again highlight some of the limitations of the systematic model. It will focus, first of all, on the interaction between resource provision and curriculum development, moving on to a consideration of the actual use and revision of the resource collection, once established.

6.6.1 THE INTERACTION BETWEEN THE COURSE AND RESOURCE PROVISION

(1) The 1977 version of the resource based course could not have been mounted in 1969, because the technological and library provision was just not available. After considering this interaction between curriculum development and resource provision descriptively, I want to assess the limitations of the systematic model in this process and then to look at it in terms of the dynamic systematic explanation of Diagram (5.2).
6.6.1.1 The Influence of the Technological Provision

(1) In 1967, the College audio-visual provision consisted of two old 16mm. projectors, three noisy slide projectors and a number of old, heavy tape recorders. Education department and College Academic Board minutes record the steady build up of modern audio-visual equipment (16, 17, 18, 19) and the gradual appointment of technicians (20, 21, 22).

(2) The audio-visual centre (see Plate 6F) was developed as a student/staff workshop with study carrels equipped with listening and viewing facilities, together with a reprographic area. The basic aim of the Centre was to provide facilities for staff and students to produce teaching materials for themselves, with technical advice available should they require it. A 'self-service' photographic darkroom was added in 1970 as was a mezzanine floor, which was designed to relieve some of the pressure on the room. These developments were further encouraged by a university decision (23) to accept slide or tapes as elements in course work, submitted as part of final assessments.

6.6.1.2 The Influence of the Library Provision

(1) When I joined the College in 1967, the library had a staff of two and was never closed, but by 1974, in addition to a principal lecturer acting as co-ordinator of all learning resources, it had a staff consisting of a tutor-librarian, two qualified assistant librarians, two full-time clerical assistants and three part-time assistants, and was operating a completely closed system of access (see Plate 6F).

(2) The change-over from the educationally 'ideal' open library to the 'realistic' closed library can be traced in College and departmental minutes (24, 25, 26, 27), as can the growth of a short term loan facility (28, 29).

(3) Parallel with the growth in library and audio visual provision over the years, there was a growing interest in bringing the two together. In January 1969, the Academic Board first discussed (30) a paper, proposing the development of a multi-media resource centre and in March of that year (31) discussed a memorandum from the education department, which proposed the development of open plan teaching spaces to house courses making use of multi-media teaching approaches. In 1971, the Academic Board agreed (32) to the establishment of a permanent Library and Resources Sub-Committee, and by 1972 agreed (33) to a recommendation from this committee to submit a draft outline of a proposed new Learning...
Resources Centre to the Department of Education and Science. Draft plans for the Centre were displayed for public comment in 1973, but final approval from the DES was not sought. Instead, the Academic Board decided in May of 1974 to convert one of the College halls into a resources centre, equipped with multi-media study facilities (see Plate 6F).

6.6.1.3 The Interaction with the Curriculum Development

(1) Diagram (6.13) classifies the range of resources available to students in each year that the course was run, and there is a clear interface between the developments just described and the types of resources used, with the growth in tapes and photocopies and the parallel

![Diagram 6.13](image-url)
reduction in the use of whole books. It is necessary now to consider this interface in greater detail.

(2) The new 1969 course exploited to a small extent the audio-visual facilities, which were then only just established, but it placed a very heavy demand on the few library staff, firstly in producing a large number of photocopies and secondly in handling the issue of these on short term loan. This undoubtedly was a factor behind the purchase of a self-service photocopying facility in late 1970.

(3) In 1969, only some of the books were kept on short term loan and feedback clearly indicated the need to keep all books on some form of short loan. 1970, therefore, created more pressure on the library issue system and prevented further expansion of the resources until the library had become fully staffed in 1972. The rise in the number of tapes reflects the effectiveness of the audio provision, whereas the lack of growth in slide-tapes reflected poor production facilities, with no technical help and unsatisfactory play-back facilities for students. The heavy use of audio facilities during the 1970 course was contributory to the expansion on the audio-visual room later that year.

(4) By 1973, the course was fully exploiting the available audio and reprographic facilities and was making full use of library and technical ancillary staff. The demands made by the course on the system had undoubtedly contributed to the resulting changes, which were then fully exploited in subsequent courses. The change from books to photocopies in 1973 was partly brought about by educational considerations and partly by the need to reduce the amount of space occupied by these resources at the library desk and by 1976 it was possible to house some 140 resources in just four pamphlet boxes, with each extract stored in standard sized and numbered folders.

6.6.1.4 Main Thesis Implications of the Interaction

(1) Detailed reference will again be made to Diagram (5.2), but attention is drawn to 5.3.5(1). I have already indicated (6.2.4(2)) that the 'design' stage of the systematic model (see cylinder 'A') was used in the selection of teaching media. This was true at the most basic level, in that I was trying to use a greater range of media and to obtain more appropriateness in the media used. Retrospectively, however,
I do not think that the model represented what really happened during the longitudinal development of this resource-based course because, rather than a theoretical design using appropriate media, the development was rather an exploitation of available technical provision, which, in its turn, created further pressure for change in resource provision.

(2) This essentially dynamic process will now be considered in the light of Diagram (5.2) as a whole. The growth in equipment, personnel and in room provision described in 6.6.1.1 and 6.6.1.2 were clearly interlinked ('o' and 'n') and were influenced indirectly (u) by professional developments in the use of resources and of teaching space in schools (see 1.3 (5, 6), 5.4.2(11)). These developments affected ('a' and 'c') other courses, including the resource-based course and, in turn, they responded to the demands of these courses over the years ('w', 'x' and 'y'). It is worth noting, in passing, that the early exploitation of these resource developments on the innovatory course undoubtedly influenced (b) the design of other education courses in later years.

(3) It is a matter of judgment, but this analysis appears to show the inability of the systematic model to represent the dynamic process of curriculum development which has just been described.

6.6.2 THE USE OF THE RESOURCES AND THE HIDDEN CURRICULUM

(1) This section will look in some detail at the way students actually used the resource collection and will reveal another facet of the hidden curriculum in terms of the gap between the way I hoped students would use the resource collection and the way they actually used it. Before examining this, however, it is necessary to describe the development of the guide to the resources.

(2) Diagram (6.14) shows the growth in the number of resources relevant to each area of study from 1969 onwards, and it is not surprising that seminar tutors expressed some diffidence in feeling able to advise students as to the best choice to make from them (see 6.5.1.4(1)).

(3) In 1972, I developed the first version of a resources guide
Diagram 6.14

Resource Provision for Each Area of Study

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
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<td>90</td>
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<td>130</td>
<td>150</td>
<td>170</td>
</tr>
<tr>
<td>Rewards/Punishment</td>
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<td>25</td>
<td>35</td>
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<td>170</td>
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</table>

Designed to help meet this difficulty and a composite sample page, taken from the slightly modified 1977 version of this guide (Table 6.1) will serve to illustrate it. Each resource was numbered (column 1); described in terms of its theoretical content (column 2); categorised as to its media (column 3); titled (column 4) and briefly described (column 5); assessed as to its suitability for individual or group study (column 6) and finally classified as to its relevance to the five areas of study (column 7). Within each area of study the resources were further subdivided with 'A' indicating that the resource should be looked at early on in the course; 'A' indicating that it was part of the inner core of study; 'B' indicating that it was recommended but optional and 'C' indicating relevant material but of greater breadth. The kind of material appearing in the 'C' category might be, for example, resources concerned with the penal system, whereas the main emphasis of the rewards and punishment optional set of resources would be on schools.
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
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**Table 6.1**

<table>
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<th>A</th>
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<th>C</th>
<th>D</th>
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<td>to be shown on March 17th</td>
<td>Composite Sample Page from the Resources Guide</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>H</td>
<td>I</td>
<td>J</td>
<td>K</td>
<td>L</td>
</tr>
</tbody>
</table>

**Notes:**
- *HSG* = Heavens and Habitation
- *HP* = Heavens and Parental
- *H* = Heavens and Parental
- *R* = Heavens and Parental
- *S* = Heavens and Parental
- *W* = Heavens and Parental
- *T* = Heavens and Parental
- *F* = Heavens and Parental
- *I* = Heavens and Parental
- *O* = Heavens and Parental
- *P* = Heavens and Parental
- *Q* = Heavens and Parental
- *R* = Heavens and Parental
- *S* = Heavens and Parental
- *T* = Heavens and Parental
- *U* = Heavens and Parental
- *V* = Heavens and Parental
- *W* = Heavens and Parental
- *X* = Heavens and Parental
- *Y* = Heavens and Parental
- *Z* = Heavens and Parental

**Composite Sample Page from the Resources Guide**

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(4) Students were then confronted with a very large collection of resources and their brief was to range widely through these resources, in order to arrive at an informed judgment about their chosen problem area of study. Adverse comments about the size of the collection were rare (but see 6.2.1.3(6)) and many comments expressed appreciation of its range.

(5) When students came, however, to use this collection, a different picture emerged (Diagram 6.15) and an analysis of the 188 resources which were present in every year between 1974 and 1977 showed that 10% of the resources (horizontal axis) accounted for 50% of all of the issues. In other words, only about nineteen of the resources were being intensively used.

(6) This might have been acceptable if the heavily used resources had been selected from different positions throughout the resources guide,
but a cumulated analysis (Diagram 6.16) of the issues for three of these years shows that 50% of the issues came from the first part of the resources guide only.

Diagram 6.16

(7) This analysis revealed an extremely skewed use of this large collection of resources, with the majority of students limiting their use of the resources guide to its first few pages. This trend was identified in my evaluation of the 1974 course and was remedied slightly in later years. Firstly by pointing out this trend to students and secondly by giving each student a one page index (Appendix J), which presented, at a glance, the numbers of all of the resources relevant to their area of study.

* Diagram (6.16) shows no information for the first fifty items in the guide and shows that 50% of the issues came from items numbered 51 to 100 in the guide. This was because the first 49 items in the guide were, in fact, tape recordings for which loan records were not available in 1974. These tape recordings only accounted for some 11% of the issues in 1975 and 1977, and so their exclusion from the diagram does not significantly alter the findings presented.
A more detailed analysis of the 1974 and 1975 issues revealed another facet of this borrowing pattern and this can be clearly seen in Diagram (6.17). All resources were classified in terms of their use.

**Diagram 6.17**

**Resources Guide Analysis**

**1974 and 1975**

**Use of Classifications**

- **"A" Classification** (early priority)
- **"B" Classification** (relevant but optional)
- **"C" Classification** (resources having breadth)

<table>
<thead>
<tr>
<th>Class</th>
<th>1974</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;A&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;B&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;C&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

All resources were classified in terms of their use, and the diagrams illustrate the percentage of resources borrowed across different areas of study for both 1974 and 1975.
relevance to each area of study (see 6.6.2(3)) and this diagram summarizes a very detailed analysis, which firstly compared each student's area of study with the appropriateness of the resources borrowed to that area and, secondly, examined the student's use of the classification system. Looking, for example, at the 'A' classification, 32% of the 1974 students (horizontal axis) used none of the 'A' classified resources for their area of study and a further 30% used only 20% of the five available resources (vertical axis).

(9) It must be remembered, in looking at the diagram as a whole, that this analysis only concerned itself with the active borrowers of resources and ignored those who borrowed no resources at all (see Diagram 6.2(c)). Of these active borrowers, few made use of the wider range of resources, classified as 'B' and 'C' and many did not even fully cover the basic inner core of suggested reading ('A*' and 'A').

Diagram 6.18

<table>
<thead>
<tr>
<th>RESOURCE ISSUES - 1974, 1975, 1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEEK</td>
</tr>
<tr>
<td>%</td>
</tr>
</tbody>
</table>

TOTAL ISSUES

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1974</th>
<th>1975</th>
<th>1977</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSUES</td>
<td>974</td>
<td>500</td>
<td>920</td>
</tr>
<tr>
<td>N. of STUDENTS</td>
<td>193</td>
<td>144</td>
<td>131</td>
</tr>
<tr>
<td>MEAN</td>
<td>5.1</td>
<td>3.5</td>
<td>7.0</td>
</tr>
</tbody>
</table>

(10) Before commenting on this, reference will be made to an analysis which was made of the resource issues for three years of the course (Diagram 6.18). This shows that the heaviest borrowing of resources occurred early on in the course and tailed off in its later weeks, with students borrowing, on average, somewhere between \( \frac{3}{2} \) and 7 resources. Most of these resources were short extracts, probably averaging less than twenty pages, which a 1976 analysis (see Appendix L) showed to take about 43 minutes each to study.
(11) Any judgment made about the above analysis must be cautious because, firstly, this analysis takes no account of the established fact that many resources were borrowed by one student but read by a number of others as well. It also takes no note of the reading of books already possessed by the students and of other library books not included in the resources guide. Despite this, however, this picture of low resource usage has to be set alongside the pessimistic library analysis of Part One of this study, both in terms of the number of books borrowed (see 2.7.2(4)) and their range (see 2.7.4(5)). In addition, it needs to be noted that the course was ranked in second place (Diagram 6.1(d)) against all other education courses in 1974 and 1977, in terms of the amount of reading done. This would appear to reinforce an overall picture of extremely limited reading on all College education courses.

Diagram 6.19
In order to check if these deductions were justified, a validation analysis was made on the 1974 data to see if the students who rated the course highly in terms of reading (see Diagram 6.1(d)), or who claimed, in their work diaries (Appendix H) to have put in a lot of reading during the course, actually borrowed an above average number of resources. The results displayed in Diagram (6.19) give support to the validity of the conclusions.

### 6.6.2.1 Main Thesis Implications of the Resource Usage Analysis

1. This analysis of resource usage showed a gap between my 'objectives' (see Diagram 5.2, cylinder 'A', but see 5.3.5(1)), which were communicated (h) to students as an expectation for wide study of the resources (see 6.2.2(3)) and students actual response (f) which, in addition to being limited to only the first few pages of the resources guide (6.6.2(5,6)) was also highly selective within these few pages (6.6.2(9)). In addition, whereas I expected the study of the resources to take place throughout the course, it was, in fact, limited to the early weeks only (6.6.2(10)).

2. A close study of an earlier Diagram (6.4) suggests that, as the course progressed, the original time estimates for the course were reduced by students and that the study of the resources (Diagram 6.4 (1, 3, 4, 6)) suffered more than the set programme of timetabled activities (Diagram 6.4(2, 5,7)). It can be argued that this was again because of the intervention (k) of the hidden curriculum, which was again not accounted for by the introspective nature of the systematic model (cylinder 'A'). The model worked, in the sense that its evaluation stage identified the problem and that its 'improvement' stage was used (6.6.2(7)), but the real problem of limited reading on the course remained and it needed the broader dynamic explanation of Diagram (5,2) as a whole to account for this.

3. A number of inter-related factors probably contributed to this limited response and these will be discussed in detail later (see 6.8.3). Focussing on the reading, however, the somewhat limited use of the library discussed in Part One (2.7.2) undoubtedly interacted ('p' and 'm') with the reading norms established ('a' and 'w') on earlier courses followed by the students, and these influenced (e) student response.
6.6.3 THE REVISION OF THE RESOURCES GUIDE

(1) The analysis of the set programme for the course (6.4.1) revealed some of the dangers inherent in using the 'evaluation' stage of the systematic model, in terms of the encroachment it makes on student autonomy and this also applied to the revision of the resources guide.

(2) Diagram (6.20) summarises the growth and revision of the resources guide between 1972 and 1976, with new resources being added at the top of the bar graph, and obsolete resources being deleted at the bottom.

Diagram 6.20

[Diagram showing the growth and revision of resources guide from 1972 to 1976, with labels for revised entries in guide and deleted resources]
A resource collection of this type ideally needs regular revision, but despite considerable effort on my part, this proved to be extremely difficult and the resource guide entries for 74% of the total resources remained unaltered throughout this time, although 23% of the entries were revised once and 3% were revised twice.

(3) The skewed distribution in the use of the resources (6.6.2(7)) made it difficult to arrive at a judgment to delete a resource simply because it was under-used and my only alternative was to rely on evaluations of particular resources made by individual students. I attempted to obtain these in 1972 and between 1975 and 1977 (Appendices T, K, L, S), but students showed some reluctance to make judgments and I only received 1,026 evaluations of individual resources which, between them, contained some 2,406 discrete judgments.

Diagram 6.21

These evaluations were equally skewed (Diagram 6.21), resulting in 62% of all evaluative judgments being focused on only 10% of the total resource collection. A summary of the judgments (Diagram 6.22) reveals that they were basically approving (1, 2, 4, 10, 12, 13) rather than critical and indicated satisfaction with the collection as a whole.
Diagram 6.22

**EVALUATIONS OF RESOURCES**

1972, 1976 - 1977

<table>
<thead>
<tr>
<th>EVALUATION</th>
<th>%0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) GOOD CONTENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) ADEQUATE CONTENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) BAD CONTENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) GOOD QUALITY TAPE SOUND</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) POOR SOUND BUT USEABLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) VERY POOR TAPE SOUND</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) TOO INTELLECTUAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(8) TOO LOW LEVEL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(9) WRONGLY CLASSIFIED</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(10) USE ANOTHER YEAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(11) DO NOT USE ANOTHER YEAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(12) INTERESTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(13) USEFUL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(14) IRRELEVANT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(15) THOUGHT PROVOKING</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

6.6.3.1 Main Thesis - Implications of the Resources Guide Revisions

(1) This analysis has revealed a somewhat unsuccessful attempt to follow the 'evaluation' and 'design' stages of the systematic model (Diagram 5.2, cylinder 'A', but note 5.3.5(1)) in revising the resources guide. The pressure of the hidden curriculum affected these attempts at two levels. Firstly, it produced a skewed use of the resources (6.6.2(7)) and this limited the number of resources which were likely to receive evaluation (6.6.3(4)), but it made a second inroad ('k' and 'f') at the point where students actually borrowed resources.

(2) No student over the years disagreed with the ideal of evaluation, but in practice it did not receive high priority at the point where students had studied the resource and were ready to return it to the library. This was probably because of the pressure (d) of other, more urgent work from other courses and also because systematic evaluation of resources was at variance ('m' and 'e') with the established College norms.
(3) It would certainly have been possible to have structured the evaluation more tightly but, as was the case with the timetabled programme (see 6.4.1), this would have made too great an inroad into the open-endedness of the course. This again illustrates the need for extreme sensitivity in the application of the systematic model.

6.6.4 THE OTHER MEDIA

(1) The argument now turns from the resources as a whole to focus in more detail on the non-print media of film, slide-tape and audio-tape, which together composed 29% of the total resources (see Diagram 6.13). I have already indicated (6.2.4(2)) that the 'design' stage of the systematic model was used to select media and will again argue in this present section that it was too simplistic.

(2) The use by students of a range of media (6.2(2), 6.2.1.1(6)) was fundamental to the professional objectives of the course. Tapes were used because they provided first hand experience of other people's views or enabled students to listen to a high level exchange of ideas. The

Diagram 6.23
slide-tapes sequences were developed in order to provide a teaching input for the course in the area of philosophical, psychological and sociological concepts. Film was used essentially to provide access to professionally relevant material not easily obtainable at first hand. As the course developed, Open University films became increasingly available and judgments in the following analysis about the use of film were specifically related to these.

(3) From 1973 onwards the attitude of students to some of these media was monitored, initially (Appendix D, questions 5-8) by a crude three point rating scale, but later (Appendices U; G, question 10 and R, question 2) by the use of a semantic differential (see 5.5.3.(13)).

(4) Diagram (6.23) attempts to display the findings on three of the scales used in 1973 and shows that the new non-print media were viewed differently from the traditional print media, being seen as easier, slightly more down to earth and less intellectual than books or the somewhat surprising judgment about journals.

(5) The more comprehensive and long-term analysis of Diagram (6.24) replicates these findings in terms of the simplicity and the relaxed nature of the audio and slide tapes and equally sees them as less intellectual than books. These findings are reinforced by this judgment, made quite seriously by one student:

"I enjoyed listening to tapes as I could do my sewing at the same time."

(6) Looking at each of these newer media in turn, the popularity of tape recordings may be deduced from the fact that some 19% of the total resource issues in 1977 were of tape recordings, but there was evidence over the years to suggest that while 20% of students found the study of tapes particularly rewarding, equally 25% were extremely unfavourably disposed towards them. There was also a growing recognition of the study problems associated with them:

"There is no such thing as dynamic listening. A tape of thirty minutes takes thirty minutes to listen to."

(7) The slide tape sequences, although positively received, were not used extensively by the students. In part, this was a reflection on
their quality, but it was also a reflection of the difficulties experienced by students in operating the equipment. The use of both the audio-tapes and also the slide-tape sequences over the years proved to be highly
dependent on their physical location. Until 1974, they were located in the audio-visual centre (see 6.6.1.1(2)) which, although noisy and crowded, provided study conditions which many students liked. In 1975 and 1976 they were moved to the newly established resources centre (see 6.6.1.2(3)), which was not well liked by students and there was a fall-off in the use of these non-print resources, which was only rectified when they were re-housed in 1977 in the main library itself.

(8) In overall terms, films proved to be a valuable addition to the course and students were favourably disposed towards them with over sixty students in 1974 and 1975 commenting on their value as a stimulus. There was evidence (Diagram 6.24) to suggest that some of the Open University films proved to be particularly successful in opening up the more-complex and intellectually demanding issues of the course, although these films were clearly too 'esoteric' for some students:

"I missed the last because I fell asleep ...."

6.6.4.1 Main Thesis Implications of the Non-Print Media Analysis

(1) The systematic model was followed (Diagram 5.2, but note 5.3.5(1)) in selecting apparently suitable media at the 'design' stage (6.2.4(2)) and was also followed at the 'evaluation' stage by the use of evaluation sheets (6.6.3(3)) and by monitoring resource issues (6.6.2(5)). It was finally followed at the 'improvement' stage by my attempts to revise or delete the resources (6.6.3(2)).

(2) The model probably does not, however, provide an accurate representation of what actually happened. Changes over the years (x) in library and audio-visual personnel, linked with changes in where the audio and slide tapes were accommodated (6.6.4(7)) influenced the course both directly (n, o, and 'c') and also indirectly (e, k and 'f') at the level of the hidden curriculum. The direct influence affected where the resources were located and how they were handled and resulted from my negotiations with key library and audio-visual personnel. The indirect influence was more difficult to identify, but was associated with students' response to these changing conditions and also to library staff support of these same changes.

(3) Finally, it needs to be noted that there was possibly a more subtle influence of the hidden curriculum, affecting the course. My course objectives (see 6.2.2(3)) demanded (h) very active critical and philosophical skills, whereas students saw the tapes and slides (but not the films) as passive, simple and intellectually neutral (Diagrams 6.23 and 6.24).
and this may have led to a hidden and somewhat negative response ('k' and 'f') at the level of the hidden curriculum. We should note in passing that as with the analysis of the student working group (6.5.2.1(5)), there are lessons to be learned from the literature (see 4.2.6.3) in terms of the impact of attitudes on teaching methods and the findings of the literature ('v' and 'c') may well have an effect on the design of any learning situation and the selection of appropriate media.

6.6.5 CONCLUDING JUDGMENTS ON THE RESOURCES

(1) This complex analysis again highlighted the somewhat introspective nature of the systematic model. The various stages of the model proved useful in developing the resource collection and in monitoring its use but, as a model or representation of what really happened, it proved to be somewhat limited. It failed to account for the dynamic interaction between professional developments in schools, a growing sophistication in resource provision and the growth of the resource based course (6.6.1.4); it again failed to take account of the pressure of the hidden curriculum and of College norms (6.6.2.1 and 6.6.3.1) on the use and the evaluation of the resources; and finally, it failed to take note of the subtle impact of changing personnel and patterns of organisation on the course, as well as the influence of hidden attitudes (6.6.4.1).

6.7 THE INDEPENDENT LEARNING AREAS

6.7.1 THE PROBLEM

(1) Probably the most innovative approach in the resource-based course was the gradual development of independent learning areas, designed to encourage critical thinking. Early in the development of the course (6.2.1.2(5)), I came to a realisation that it was necessary to look seriously at the lack of critical attack in the work of many of the students, a judgment backed up by external examiners in 1971 (36), 1973 (37) and 1977 (38).

(2) The analysis of the students in Part One of this study (3.13(5)) portrayed many as being academically insecure and I felt that it was unlikely that many such students would have been brought up in a strong critical tradition, as evinced by the following student comment:
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
"I am muddled by the two differing views and than can neither
write nor support either view convincingly".

(3) Put another way, many of the students such as the one above were
likely to be in the early or middle stages of Perry's (39) classification
of intellectual and ethical development (see also 6.2.1.3(6),
Diagram 6.29 and also in the simulation 5.5.3.(9)). The students
arrived then on this third year course lacking basic critical skills and
since it was not possible to modify their earlier courses, I was driven
to seek ways outside of the formal course structure to develop these
abilities.

6.7.2 THE SOLUTION

(1) In order for students to develop the philosophical skills identified
earlier (6.2.2(3)), I decided to make use of displays and structured
work units, which are more fully described in Appendix E. These were set
up in some of the main corridors of the College (see Plate 6D), and were
open to all students and staff, totally outside all formal College courses,
but serving as a back-up to the resource-based course. The displays
appeared at irregular intervals throughout the academic year, but were
intensively used as a teaching strategy during the time when the course
was actually running. In outline, the displays presented problems and
tasks, using a range of media, and often gave students the opportunity
to make and record a public response (see Plate 6G) to the problems posed.

Diagram 6.25
Diagram (6.25), which collates the many open comments received over the years about these displays, and Diagram (6.26), which summarises semantic differential judgments made between 1973 and 1977 (see Appendices Diagram 6.26)
U3; G, question 10; M, question 5; R, question 2) help to show how the displays were judged by students. Basically the 'good-bad' and 'active-passive' dimensions of Diagram (6.26) show that they were increasingly well received and many students indicated (Diagram 6.25(c)) that they were attracted to them. These display areas, nick-named 'Stodderama' by some students, gave rise to a lot of feedback from both staff, when questioned (see 5.6(9)), as well as students, and the range of the replies reveals something of the problem of interpreting this evidence:

"Displays are often too gimmicky ..."
"Displays which tell you things that could be put in a more simple way - typed sheets".
"... a bit of a joke ... keep trying because some people obviously enjoy them and get something from them".
"Stoddery ..."; "... a sledgehammer to crack a nut ..."; "... too fierce ..."; "... too advanced ..."; "... threatening ...".

6.7.3 MAIN THESIS IMPLICATIONS OF THE INDEPENDENT LEARNING DEVELOPMENT

(1) Reference will again be made in this section to Diagram 5.2 (but note 5.3.5(1)). In discussing the early stages in the development of the simulation exercise (5.3.5.1), I discussed the problem of matching the creative development of a course in which objectives will not necessarily be clear, with the demands of the systematic model, and these same comments could be applied to this development of independent learning areas. The learning system was experimental and, although I was clear about the kind of critical skills I wished to develop, the precise objectives I wanted to achieve could rarely be stated and thorough evaluation of their achievement was almost impossible, because of the openness of the learning.

(2) The four stages of the systematic model (cylinder 'A') were certainly used, resulting, for example, in the poor standard of some of the displays, commented on by students in 1974, being improved in 1975 (see Diagram 6.25(e, f)); and in the complexity of displays, noted in 1975 and 1976, being lessened in 1977 (see Diagram 6.25(b) and Diagram 6.26 (simplex-complex scale)). The model again did not provide a full representation of the way this particular teaching strategy evolved.

(3) Looking at Diagram (5.2), the initial identification of the lack of critical attack in students (see 6.7.1) came from formal and informal feedback (b) over the years (w) from other education courses and from the external reports of the final examination process (p, x and 'c').
It was also based on the results (c) of my analysis of the students (n) in Part One of this study (see Chapter Three). These factors interacted (a) and created a set of norms (m) against which (e) the resource based course had to be taught.

(4) My solution (6.7.2) needs to be set in this dynamic context, as a sub-set of cylinder 'A'. The displays affected (f) students and staff in the central triangle and there was a resulting interaction (g, h and 'i') between them and myself as designer of the displays (see 6.7.2(2) and Diagram (6.25)). There was also a more subtle interaction (b) between the displays and other courses, resulting (Diagram 6.25(a)), in students commenting that they had been unable to study the displays because of the pressure (d) of other work. Finally, there was probably an interaction between the teaching methods used in these displays and the normal teaching methods experienced by the students (c, m, a and 'e').

(5) If the above analysis is correct, then it is likely that student response to these independent learning displays would be likely to be influenced ('k' and 'f') by the hidden curriculum. This diffuse analysis makes the following student comment understandable:

"(I am) frightened to stay too long (looking at the displays in the corridor) in case anyone comes along and asks me what I am doing - I just don't know".

6.7.4 CONCLUDING JUDGMENTS ON THE INDEPENDENT LEARNING AREAS

(1) The true significance of this aspect of the course was that it moved the learning outside of any formal course structure. It is clearly impossible to arrive at a conclusive judgment about such an experiment, but equally it is possible to say that the displays were studied; that where participation was required it usually, but not always, happened, and that they appeared to be well received by students.

(2) I felt that I was justified in spending a lot of time working up these displays and felt that the end result was just as useful as any other more formal teaching strategy.

6.8 THE COURSE AS A WHOLE

6.8.1 INTRODUCTION

(1) The previous sections of this chapter outlined the development of this course over a nine year time span and then considered certain
aspects such as the set programme, the choice of problem area of study, small group work, the development and the modification of the resource collection and the independent learning areas, in more detail.

(2) I now want to attempt an evaluation of the course as a whole and will do this under a number of headings. First of all (6.8.2), the process of evaluation will be considered, together with staff and student reaction to it, and this will be followed by a detailed consideration of two attempts to monitor the achievement of the course objectives (6.8.2.1, 6.8.2.2). An attempt will then be made to set this course against the illuminative perspective of Part One of this study (6.8.3), followed by a judgment on the course as a whole (6.8.4).

6.8.2 THE PROCESS OF EVALUATION

(1) The initial evaluation of the course in 1969 (Appendix A) and all subsequent evaluations (Appendices D, G, M and R) took place in a College climate which ranged between neutrality and hostility in its attitude towards educational technology (see 6.5.1.2) and was probably seen as threatening by some staff. Aware that my evaluations might produce hidden side effects, I regularly monitored students' attitudes towards them, both objectively (Appendices G, question 10; M, question 5 and R, question 2) and by allowing for open-ended comment (Appendices A and D end; M, question 6; R, question 3).

(2) The evaluations were generally well received (Diagram 6.27), being seen as good and active, if somewhat complex, and intellectual. Over the years, 42 'open' comments described them as 'useful', 'vigorous', 'comprehensive' and 'flattering' and I received revealing comments such as:

"... at least someone takes an interest".
"Course evaluation should be done for main subject too".
"Good to see someone realistic in evaluations and who will accept criticism himself".

(3) Not all students, however, responded well to the evaluation process and over the years seventy students commented critically, seeing them as clinical or unfair and noting the danger of dishonest replies, of feeling like guinea pigs:

"... feel vaguely like a battery hen - bombarded with questionnaires".
"Evaluations are to me things which must be completed, nothing more, although they are sometimes humorous. Quite often I feel bored when completing them and sometimes uptight (panic on some occasions, when questions are complex)."
There was also the problem of chasing up non-responders:

"As a 'non-responder' may I apologise ... the label non-responder is a little misguided ... it is important to evaluate ... stimulated by a sense of guilt ... I shall fill it (the evaluation form) in with pleasure".

(4) These hidden depths which lie behind any evaluation need to be noted, since they clearly influenced the apparently clear-cut raw data on which all my judgments, in this chapter, have been based.
(5) One very significant point came up, which I did not expect, and that was the fact that fifty students noted that evaluation of courses was not seen to produce change. This, of course, reflects the eternal conflict between the three year student life-cycle and the often longer cycle which is necessary for informed curriculum change to be brought about. These judgments, however, undoubtedly created a hidden curriculum pressure which affected the development of the course.

(6) Turning from the evaluation process itself to the course objectives (see 6.2.2(3)), earlier sections in this chapter, which looked at the resources (6.6.2) and the student working group (6.5.2), have both shown that objectives 'a' and 'b', wide reading and creative small group discussion, were not fully achieved. I want to look in the next two sub-sections at the specifically philosophical objectives 'c' and 'd', which were monitored firstly by means of an objective test (see 6.2.1.3(5)) and secondly by a content analysis of written answers.

6.8.2.1 The Objective Test

(1) This test was similar in format to the Watson Glaser Critical Thinking Appraisal (40), but also made use of a trial test approach developed for study unit (G.2086) of the Schools Council General Studies Project. The test, which used content drawn from the five problem areas of study, monitored such skills as: inference, deduction, interpretation of evidence, evaluation of arguments, recognition of assumptions, and the distinction between fact, value and concept. It was piloted in 1972 (Appendix V), item analysed and revised for 1973 (Appendix W) and again revised before being run unchanged in 1974 and 1975 (Appendix X).

(2) Theoretically this represents the textbook way to pilot and revise an objective test, but I was not satisfied with the final version, which was deliberately run unchanged in 1975. In 1972 and again after revision in 1973, the item analyses revealed only 44% of the questions as acceptable (usually with a point biserial correlation greater than .16), with a further 15% of the questions needing minor alteration. In spite of these two revisions, however, item analyses of the 1974 and 1975 results still revealed that 40% of the questions were unacceptable and that about 15% needed some modification. In addition to this, however, there was only limited consistency between the 1974 and 1975 analyses and the results for 33% of the questions analysed varied so much as to have led to opposite judgments as to their validity in each year.
(3) Summing up, my first attempt to provide a satisfactory checking of the achievement of course objectives proved abortive, because of the extreme variability in the analysis from one year to the next. I have not discovered, in the literature, any evidence of long term item analysis such as this and it may be that these results raise wider questions about the development of any objective test and the use of item analysis procedures.

6.8.2.2 Content Analysis of Written Answers

(1) Parallel with the use of the objective test, content analyses were carried out on all written final examination questions, related to the resource based course in 1974 and, with a smaller sample, in 1975, while in 1977 a similar analysis was carried out on an end-of-course written task (see 6.2.3(3)). The analysis was based on a cumulated frequency count for each time the various criteria listed in (6.2.3(3)) were met.

(2) A breakdown of the resulting analysis is shown in Diagram (6.28), although comparison across the years is not possible because, whereas the 1974 and 1975 answers were of a self-selecting group of students, the 1977 answers were for a whole year group and were likely to be less satisfactory. The key point to emerge from the analysis is the low average frequency on all of the criteria, implying rather generalised answers, which lacked critical attack.

(3) This content analysis was inevitably somewhat subjective, and it failed to provide conclusive answers as to the achievement of objectives, but it did, however, enable me to see the problem more clearly. Critical skills of this kind cannot be developed in a short half term course, just before final examinations and the analysis, therefore, revealed a problem which affected the total College course.

6.8.2.3 Main Thesis Implications of the Evaluation of the Course

(1) The process of evaluation is a central stage in the systematic model and this section has recorded my specific attempts to evaluate the achievement of the main philosophical objectives of the course. In following the model, two methods were used to carry out the evaluation,

* Criteria (i) and (ii) were not included in the analysis and two additional criteria, 'evaluation of evidence' and 'professional application of evidence' were added later.
ANALYSIS OF PHILOSOPHY

QUESTION - 1974, 1975, 1977

FACT

RECOGNITION OF ASSUMPTIONS

DISCUSSION OF VALUE QUESTIONS

DISCUSSION OF CONCEPTS

EVIDENCE OR BREADTH OF READING

DISCUSSION OF IMPLICATIONS

TOTAL

EVALUATION OF EVIDENCE

PROFESSIONAL APPLICATION OF EVIDENCE

Diagram 6.28
an objective test test and a content analysis. Results were obtained for both of these methods but, in fact, those for the objective test were discarded (6.8.2.1(3)) because of reservations about their validity. It is important to note that although the results of the second method, the content analysis, were used for evaluation, no validity check was carried out on the method, and this must limit the findings. This may point to a weakness in the systematic model in that it makes no requirement for any check of validity.

(2) The dynamic systematic explanation (Diagram 5.2, but note 5.3.5(1)) again needs to be considered in looking at the process of evaluation in cylinder 'A'. The evaluations took place in a climate in which the College norms (m) were hostile to evaluation (6.8.2(1)) and where few other courses (cylinder 'B') were evaluated (6.8.2(2)) and these two factors had an impact ('d' and 'e') on students. In addition, some students were influenced ('y' and 'f') by the process of evaluation of these innovatory courses, which had taken place in previous years (6.8.2(5)). In addition to these factors, other pressures influenced some students (6.8.2(3, 4)) and all of these led (k) to a response (f) to the evaluation process at the level of the hidden curriculum.

(3) The overt evaluation of the course objectives needs therefore to be treated with some caution. In terms of the successful development of the course, however, this evaluation of the achievement of precise objectives proved somewhat irrelevant, because the overall response to the course was influenced by other factors, which can only be explained by detailed reference to the dynamic systematic explanation, and these will now be considered.

6.8.3 AN ILLUMINATIVE VIEW OF THE COURSE

(1) I attempted in Part One of this study to provide an overall view of the College (2.8) and of the students (3.13) and will attempt now to set the growth of this resource-based course against this perspective.

(2) This innovatory course, with its analytic and philosophically critical emphasis, needs to be set against the 'child-centred' and 'integrated' norms of the College (1.4(2), 2.2(6)) and this probably accounted for the rather conservative reaction of seminar tutors (6.5.1.2(4)). It is also worth noting that such factors as age and mobility (2.4.1, 2.4.2), as well as qualifications (2.4.3) may also have contributed to this conservative response.
Undoubtedly the fact that most students were resident on the campus (2.2(4)), sharing hostels with close friends, militated against my attempts to use unstructured seminar groups (6.2.1.3(3)), which cut across this pattern. It also accounted for the hostel-based work groups which emerged from 1974 onwards (6.5.2(6)).

Diagram 6.29

**STUDENT REACTION TO OPEN COMMENTS ABOUT THE RESOURCE BASED COURSE, MADE BY OTHER STUDENTS**

**N = 43**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Rather stupid to pump..., ideas into (impressionable) students for 2 years and attack them in year 3 for not questioning ..., theory.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Throughout the College course we have been left to ourselves to work. Some... can... but is it good generally?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) ... course should be more directed... I did not quite know where I was going...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) ... he is not aware of the difficulties of self-motivation that exist within his courses;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) A small number... are able to work independently... we... need to be spoonfed and constantly remotivated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Little enthusiasm is left for any course, because finals are round... corner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(7) ... feel the experience gained in self-discipline and motivation of a self-designed course is ... valuable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Response of two thirds of respondents*
(4) It has already been noted (6.7.1(2, 3)) that many students were academically insecure and intellectually underdeveloped and Diagram (6.29, but see footnote to p. 254) gives more support to this. For many of these students this course created genuine difficulties:

"I found myself swimming in a sea of facts, opinions, theories etc., and not quite knowing where I was going! Thus I feel I tended not to go anywhere, but just float in case I drowned."

Diagram 6.30

<table>
<thead>
<tr>
<th>B. E. D. Students</th>
<th>Year Selection (by Cert.)</th>
<th>Course Paper Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied but did not satisfy university minimum qualifications</td>
<td>Final Examination</td>
<td>B. E. D. course paper</td>
</tr>
<tr>
<td>= Other Education Courses</td>
<td>= Option Course</td>
<td>= Resource Based Course</td>
</tr>
</tbody>
</table>
(5) It is possible, however, to see more serious implications stemming from the pen-portrait of chapter three (see 3.13(5)) as this student noted, in commenting on the course:

"Potentially better than other approaches - unfortunately has had to do battle with that dank measure of apathy and indifference, which is college of education studenthood".

An extreme comment, but it does highlight some of the hidden problems which affected students.

(6) So far in this illuminative perspective we have considered background factors which influenced the course, but there were also other more immediate pressures and these will now be discussed by reference to Diagram (6.30), which summarises the essential elements of the third year course between 1970 and 1977.

6.8.3.1 Selection for the Fourth Year B.Ed. Course

(1) Column 'b' shows the growth in the number of students staying on for a fourth year, to study for the B.Ed. degree (2.6). This growth of interest needs to be set, however, against the picture of academic insecurity, painted in Part One (3.8.1(1), 3.12.3(2, 3), 3.13(5)), an insecurity brought alive by the following comment:

"In the first year ... I did not have much faith in my intellectual abilities - this is still the case, but has changed by attitude to that of wanting a degree to prove myself against the standards at school and in my home area, where a college place is a 'failure' compared with that of a university place - and if I can come out with a degree perhaps some of my confidence in my own intellectual ability will come back".

My judgment is that, as with the simulation exercise (5.7(7)), the selection processes for this fourth year increasingly tended to polarise student involvement in the resource-based course into a complete involvement or a 'nil' one.

6.8.3.2 Changes in the Third Year Timetable

(1) Column 'b' of Diagram (6.30) showed how changes in the academic processes of the College influenced the course and this present section will show how it was also affected by changing education course structure. Column 'c' highlights the growth of one particular course, in which tutors offered a number of options, and which lasted for half a term in 1970 and for one and a half terms from 1973 onwards. It is important for the argument, because from 1973, students appeared to make a conscious decision at the start of the resource-based course, in terms
of the time priorities they intended to allocate between this option course, which they had started in the previous term and the newly started resource-based course and this again led to some polarisation of levels of involvement in the resource-based course.

6.8.3.3 The Final Assessment Pattern

(1) So far I have argued that the general selection process for the B.Ed. influenced response to the course, as did the students' reconciliation of the conflicting demands of two parallel timetabled courses. They were equally influenced by the approach of final examinations, explained partly by some lack of confidence (3.12.3(2)); partly, in the case of some students, by the pressures of studying a totally new main subject (3.9) and partly by a broader uncertainty over College assessment standards (2.5.1).

(2) Columns 'd' and 'e' show an overall change in the way the total education course was assessed, ranging from a balance of one element of course work and two examination papers between 1970 and 1973, to one of two elements of course work and one examination paper from 1974 onwards. These changes had a number of effects on the resource-based course.

(3) From 1974 onwards, with only one examination paper ahead of them, students became more selective in their assessment of the resource-based course's perceived examination utility. In addition, the increased emphasis on course work, which was also paralleled in several main subject departments, was additionally linked with an overloaded timetable (41) and led to conflict between these clearly defined pressures and the open demands of the resource-based course. This conflict was noted by 149 students between 1974 and 1976 and Table (6.2) below shows the 1976 comments in more detail (see Appendix M, question 6(b)):

<table>
<thead>
<tr>
<th>REASON</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Pressure of other courses</td>
<td>40</td>
</tr>
<tr>
<td>2) Pressure of main subject special study</td>
<td>22</td>
</tr>
<tr>
<td>3) Pressure of education extended study</td>
<td>9</td>
</tr>
<tr>
<td>4) Gave priority where the grades lay</td>
<td>17</td>
</tr>
<tr>
<td>5) No incentive</td>
<td>16</td>
</tr>
</tbody>
</table>

(4) Column 'e' is of particular interest, because it summarises the lay-out of the final examination paper(s), indicating in which section
of the paper(s) the resource-based course and option course questions occurred. Students were provided with information about which courses would be examined in each section of the paper(s) early in the spring term, and this again influenced their response to the resource-based course.

(5) From 1970 to 1973 there was no problem for the resource-based course, even with the extending of the option course into term seven, because students could answer a question on both the resource-based course and the option courses. Again, there was no problem in 1974, even with only one examination paper, because the questions occurred in separate sections of that paper, and 57% of that year group attempted a question on the resource-based course.

(6) In 1975 and 1976, however, the questions occurred in the same section of the paper and, in addition, the option course was also assessed as part of the second element of course work (see Column 'd'), and understandably only 38% and 16% of students respectively attempted the resource-based course question, compared with the 60% of students in 1976, who answered the option course question. In 1977, a structural change was made in the examination paper, and students were required to answer a seen question on their option course in the equivalent of section 'A' of their paper, meaning that for many, the possibility of answering a question on the resource-based course again became a realistic possibility and contributed to the better response to the 1977 course.

(7) In addition, therefore, to the B.Ed. selection process (6.8.3.1) and the conflicting demands of other courses (6.8.3.2), the nature of final assessment (6.8.3.3) also affected student response to this course. These were all external pressures to the course and the illuminative perspective of Part One helped to achieve an understanding of the students' overall response. Although I have suggested that these pressures polarised student response, most of them participated but with lower levels of involvement and this led to the further hidden curriculum strategies identified in 6.6.2.1, 6.6.3.1 and 6.7.3(3).

6.8.3.4 Main Thesis Implications of the Illuminative Perspective

(1) This illuminative view of the development of the resource-based course reinforces the need to consider the breadth offered by the dynamic systematic explanation of Diagram (5.2). The resource-based course (cylinder 'A') was clearly affected by the rest of the students' course and by other constraints (cylinders 'B' and 'C').
(2) Within cylinder 'C' the interaction (m, n, o, p and 'r') between the child-centred norms of the College and the academic background of staff (6.8.3(2)), the physical occupation of buildings (6.8.3(3)), the social and academic processes which affected students (6.8.3(4, 5), 6.8.3.1, 6.8.3.3), and the changing curriculum (6.8.3.2), affected ('a' and 'c') all College courses over the years (x) and this, in turn, led to some limited interaction between these courses (see 6.8.3.3(3)). In addition, however, part of this interaction was at the level of the hidden curriculum ('d' and 'e') and I have tried to describe how, in retrospect, I feel it influenced ('k' and 'f') this innovatory course.

(3) In talking about the evaluation of the course (6.8.2.3(3)), I suggested that its successful development rested more on factors external to the course itself and I have tried in this present section to develop this theme.

6.8.4 THE RESOURCE-BASED COURSE IN RETROSPECT

(1) This chapter has recorded the growth of a course, using an innovatory teaching method, over a nine year period of time. It is a measure of the complexity of the evaluation process that no confident claims for the effectiveness of this teaching method can be made even after this length of time.

(2) The reason is that, as this chapter has shown, the student response to the course is as much governed by the changing macrostructure of all College courses as by the teaching method itself. If this is true, it may be that a fresh look needs to be given at the whole literature of evaluation. The method of this course was modified, but not fundamentally changed between 1974 and 1977, but that four year cycle revealed dramatic changes in the response from one year to the next.

(3) The main argument of the chapter has been that the systematic model, while assisting in the development of this course, was somewhat simplistic and introverted, failing to take account of the broader dynamic context of Diagram (5.2). Taking the various stages of the systematic model in turn, its insistence on the specification of objectives may be too limited because, while concentrating on objectives appropriate to students, it failed to take account of staff objectives (see 6.5.1.6). Equally my premature focusing on the achievement of objectives (see 6.8.2.3) led to me paying insufficient attention to
broader questions affecting student response to the course (see 6.2.4(4,5)) and, until these were successfully resolved (6.2.3) in Phase Three of the course's development, it was inappropriate to concentrate on the achievement of specific objectives.

(4) The second element of the model, the selection of appropriate teaching strategies and media, again proved to be somewhat simplistic. This chapter has shown, in looking at the use of small groups (6.5.2.1) and the use of the media (6.6.1.4, 6.6.4.1), that the theoretical analysis of what was desirable is not enough. In practice, it was the constantly changing dynamic context in which the chosen strategies and media were used, which modified this ideal.

(5) Evaluation fits centrally into the systematic model, but the model fails to allow for the process of evaluation's psychological and sociological effects on the learner and the institution (6.8.2.3). It also fails to take note of the potential distortion effect on a course caused by the need to evaluate, and this was seen with regard to my monitoring of the set programme (6.4.1) and the evaluation of the resources (6.6.3.1(3)).

(6) The overall cycle of development and evaluation, hypothesised in the systematic model, is probably too mechanistic. The curriculum developments described in this chapter, such as the development of the independent learning areas (6.7.3) and the interaction between library and technological provision (6.6.1.4) were far more creative or pragmatic than the theory of the model would allow.

(7) In the review of the literature (4.4.2.5), I discussed three books by Stenhouse (42), Socket (43), and the London University Teaching Methods Unit (44), all produced in 1975 and 1976, which, alongside others, highlighted the limitations of the systematic model. They stressed the need to concentrate on the process of curriculum development, rather than on its end results, viewing this process institutionally, as well as from the point of view of the students.

(8) The developments, discussed in this chapter, represent my own instinctive move to this type of curriculum model, initially unsupported by the literature, but gradually finding myself to be in a main-stream tradition.

(9) In overall terms, this resource-based course was always well received (see Diagram 6.6) in essence, but student participation varied from year to year as the College macrostructure changed. More importantly, however, student response was always much more limited than my ideal,
with students appearing to seek a way through the course which would enable it to be successfully completed with the least effort. This is probably what the real curriculum has always been about.
REFERENCES TO CHAPTER SIX

(1) College Education Department Minutes. 26/11/68-9 and 4/12/68 - 3.


(3) College Education Department Minutes 22/1/69 - 3(b) and 4/2/69 - 5.


(5) College Education Department Minute 17/6/71 - 4.


(8) College Academic Board Minutes AB/1/71 (Revised) - Paper: The Effect of 'Learning for Teaching' on the Professional Thinking and Practical Work of Bishop Otter College - last paragraph.

(9) College Education Department Minutes 22/10/70 - 4.2 - and 5/11/70 - 3.

(10) College Education Department Minute 14/1/71 - 3b.


(13) College Education Department Minute 23/9/69 - 3.

(14) College Education Department Minute 15/10/70 - 3.


(17) College Education Department Minute - 1/2/68 - 3.

(18) College Education Department Minute - 15/2/68 - 5.

(19) College Education Department Minute - 26/2/70 - 5(b).

(20) College Academic Board Minute AB/57/71 - 1.2

(21) College Academic Board Minute AB/33/72 - 4.2

(22) College Academic Board Minute AB/36/73 - 2.1
(23) College Education Department Minute 25/2/71 - 3(ii).
(24) College Academic Board Minute AB/12/3/69 - 2(c).
(25) College Education Board (Staff and Students) Minute 19/3/69 - 1.
(26) College Academic Board Minute AB/26/3/69 - 5.
(27) College Academic Board Minute AB/59/71 - 8.
(28) College Academic Board Minute 13/3/68 - 2(b).
(29) College Academic Board Minute 12/3/69 - 2(c).
(30) College Academic Board Minute 15/1/69 - 4.
(31) College Academic Board Minute 12/3/69 - 7(e).
(33) College Academic Board Minute AB/21/72 - 6.4.
(34) College Academic Board Minute AB/36/73 - 12.
(35) College Academic Board Minute AB/36/74 - 5.
(41) College Academic Board Minutes AB/3/70 - 2.5 and AB/12/70 - 2.3.
PART FOUR

SYNTHESIS AND CONCLUSIONS
CHAPTER 7: SYNTHESIS AND CONCLUSIONS

7.1 INTRODUCTION

(1) My emphasis in this final part of the study will be on developing a personal appraisal of the content of the earlier chapters. This emphasis will enable me to tease out points of significance which have not yet been made and to reinforce points already made, but from a slightly different perspective.

(2) First of all, two factors which influenced the initial development of these innovatory courses will be examined, namely the nature of student learning (7.2) and developments in teaching methods (7.3), and these will be followed (7.4) by a brief outline of the two courses themselves. Having developed the courses I was faced with the problem of evaluating them and this will be discussed in some detail (7.5). The main thesis of this study emerged retrospectively as a result of this evaluation and the next section of this chapter (7.6) will draw together the main strands of this thesis, while the final section (7.7) will attempt to draw some general conclusions from the study and to suggest future lines of research.

7.2 STUDENT LEARNING

(1) The first factor which undoubtedly influenced the development of these courses was an interest in the nature of student learning, stemming from my work in the College education department. Chapter One outlined (1.3(3, 4)) how some teachers in both primary and secondary schools were attempting, during the 1960s, to move from a teacher structured to a learner centred curriculum, and how Bishop Otter College was making parallel moves with its foundation course (1.4(2, 3)).

(2) These developments at both school and College level were essentially intuitive responses by experienced teachers to meet the needs of learners, and had only a limited theoretical underpinning. The two innovatory courses, which are the subject of this study, were developed with an awareness of the need for a stronger theoretical base, which I attempted to establish in the review of the literature (4.2).

(3) In that section of the review I suggested that despite the range of methods used by philosophers and psychologists to look at human
learning (4.2.3), the explanations produced were inevitably relative (4.2.2) and were essentially metaphors rather than models. In other words they were approximations of the process of human learning and did not yet offer a sufficiently firm foundation on which practising teachers might build (4.2.2(7)), although attempts have been made (4.2.7) to make use of some aspects of the theory.

(4) Many authors saw concept formation as central to the learning process (4.2.4) and although it might be occasionally linear, which is the underlying assumption behind some didactic teaching, it was more likely to be evolutionary and uneven (4.2.4(11)). In addition to looking at the formation of concepts, I also discussed the growth of abstract ideas from a base in concrete reality (4.2.4.1), as well as the development of the higher levels of formal thought (4.2.5) and, even more importantly, what is meant by 'deep-level processing of ideas' (4.2.5.1).

(5) Although it was not discussed in depth, I made some reference (4.2.6) to the study of the psychology of individual difference, focussing on learning styles (4.2.6.1), motivation (4.2.6.2) and the importance of attitudes (4.2.6.3). The key point which I felt was established was that, because of the complexity of any learning situation involving a group of students, no single teaching approach was ever likely to satisfy the whole group.

(6) I did not make detailed use of this theory in developing the innovatory courses because of the reasons outlined above (para. 3), but in varying degrees, I did try to allow for individual differences in students; to enable the student to move from the concrete to the abstract and finally, to encourage the development of high level processing of ideas (see e.g. 5.9(4, 5), 6.2.1.1, 6.2.2(3(c, d, f))). It may be possible to apply the theory more rigorously in other disciplines, or content areas, but it was not possible to do this in the areas of the administration or the philosophy of education.

7.3 TEACHING METHODS

(1) Parallel with the interest in student learning, described above, I was also interested in the broader question of curriculum development. It was understandable that, as a newcomer to college of education work in 1967, I should be particularly interested in curriculum development,
because there was a growing interest in teaching methods both in schools (see 1.3(5, 6)) and in higher education (see 4.1.2).

(2) Because of this growing interest, I felt it necessary to explore ways of introducing students to these developments as they affected schools (see 4.5(6, 7)) and also to deepen my own insights into the literature (4.3).

(3) In reviewing the literature, I considered the following methods: the lecture (4.3.1) groups (4.3.2), individualised learning (4.3.3), programmed learning (4.3.4), PSI and Keller plan (4.3.5), multi-media courses (4.3.6) and finally, simulations and gaming (4.3.7). The coverage of these different teaching methods in the literature is somewhat uneven, with a wealth of material about the lecture and about group work, but relatively little about some of the other methods, largely accounted for by their relative youthfulness. Viewed as a whole, the research evidence is unsatisfactory because of weakness in methodology (see 4.4.3.2) and this will be discussed in detail later (7.5.1(2, 3)). The literature does, however, describe many attempts to move away from traditional patterns of teaching, even though the majority of the attempts appear to have little theoretical underpinning in terms of ideas about the nature of student learning.

7.4 THE INNOVATORY COURSES

(1) Part Three of this study outlined the development of these courses between 1969 and 1977 and the development was described in outline in Chapter One (1.5.1, 1.5.2).

7.4.1 THE SIMULATION EXERCISE

(1) I first started to use simulation in 1970 (5.2(1)), but the exercise was only run in its extended form of half a term, between 1972 and 1974. It was basically concerned with giving students an experience based introduction to the area of the economics and administration of education, by involving them in making decisions about educational reorganisation proposals for a number of villages and market towns (5.3.2). In order to deepen the quality of the decision making, particular attention was paid in 1973 to the development of a set of very detailed back up resources (5.4.1(5)).
In the first year that it was run the exercise was extremely successful, producing a high level of involvement in many students (5.3.3(1)), but in later years, the proportion of students who were highly involved in the exercise decreased (5.5.3(6)).

My own analysis of this fall-off in support for the exercise was developed towards the end of the chapter (5.6). I concluded that many students, having been highly involved in the first year of the full exercise, later realised that it had little final examination utility. Feedback from these students to subsequent year groups resulted in these latter students making a more cautious judgement about their level of involvement in the course (5.6.7).

7.4.2 THE RESOURCE-BASED COURSE

The second of these two innovatory courses was initially mounted in 1969 and this study followed its development through until 1977. Chapter Six traced the three main stages in the development of the course, discussing (6.2.1) its initial phase, in which students were based in seminar groups, followed by its second phase (6.2.2), in which the students worked independently with a great deal of freedom, and its final phase (6.2.3), in which the independent work continued but with slightly more structure.

The resource-based course was described in outline in Chapter One (1.5.2). It allowed students to choose to follow one of five optional areas of study (6.3) for about five weeks, using a classified guide (6.6.2(3)) to help them to select appropriately from some three hundred multi-media resources (see Diagram 6.13). Parallel with this study of resources, they could choose to attend an optional set programme of seminars and workshops (6.4). Although the precise emphasis varied over the years, they were encouraged to develop critical skills as they handled the resources and to attend time-tabled sessions, in order to arrive at a 'reasoned position' with regard to the topic they had chosen to study (6.2.2.(3)).

Attitudes to the course changed subtly over the years (6.1), and while the set programme of optional sessions continued to be well supported (6.4(2)), the use of the resources was much more uneven (see Diagrams 6.1 (col.'d') and 6.18). The reasons for the changes in attitudes to the course were complex and were discussed in depth in Chapter Six (6.8.3), but in essence they centred on the influence of
changing academic and social processes outside of the course itself on
the hidden curriculum (6.8.3.4).

(4) Detailed analysis of student choice of study area (6.3(3)),
support of the set programme (6.4(5, 6)), use of the resources (6.6.2(7-0)
and their evaluation (6.6.3(4)), all showed a greater sense of immediacy
and pragmatism in student response than teachers ideally allow for.
All of these analyses revealed only too clearly the survival strategies
adopted by students in response to the demands of the course.

7.5 EVALUATION

7.5.1 THE PROBLEM OF THE PARADIGMS

(1) Both innovatory courses were developed using the systematic model
(1.1(1)), but their evaluation created difficulties. By 1972, I was
involved in the development of two courses in the theory of education,
which I felt were distinctive and I started to look for ways of arriving
at an informed judgment about them. My studies, however, of other
reports of innovatory teaching gave me some cause for concern.

(2) Time and again (4.3.1.4(1), 4.3.2.4(3, 8), 4.3.4.2(8), 4.3.5.4(3)
and 4.3.7.2(2)), in reviewing the literature, I was forced to note that
most of the studies reported short term innovations, running for one or
two years only, which were often somewhat partisan. I also noted the
smallness of sample size in many studies and the limitations imposed by
pseudo-scientific attempts at research design. In addition, I
commented on the difficulties imposed by the lack of comparability between
the studies, together with their lack of replication. I found myself
unconsciously, therefore, searching for an alternative research paradigm.

(3) In the final part of my review of the literature, I summarised
(4.4.3.2) an unsatisfactory picture of the art of evaluation, noting
that, although part of the problem lay in the traditional research
paradigm (4.4.3.3(1)), which I had originally intended to use in
evaluating these courses, much also lay in a lack of rigour in the
reported research. I then examined criticisms of the paradigm in more
detail (4.4.3.3) and considered the literature (4.4.3.4), which argued
for a broader approach to the whole problem of evaluation.

(4) As a result of this reading, I felt it necessary to adopt such
an approach to my own evaluation of these innovations, but it must be
stressed that the literature just described did not offer a clear
alternative research paradigm. Initially, therefore, my broader look, which is summarised in the illuminative perspective of Part One of this study, was not clearly located in an overall evaluation rationale or strategy and was essentially an intuitive approach.

7.5.2 THE ILLUMINATIVE PERSPECTIVE

(1) The illuminative perspective looked at both the College as a whole (Chapter Two) and the students within it (Chapter Three). The approach was deliberately broad-based, but I attempted (Diagram 2.1) to establish clear links between this perspective and the innovatory courses.

(2) In Chapter Two, I examined the College in terms of its historical growth (2.3), its physical appearance and social norms (2.2), its staffing (2.4), its curriculum (2.5) and the quality of its academic life (2.6, 2.7), while in Chapter Three I considered the students in terms of their origins (3.2), their sex, age and previous schooling (3.3 to 3.5), their family background (3.6, 3.7), qualifications (3.8), personality and academic aptitude (3.10, 3.11) and finally, their study habits (3.12). In order to enable more informed judgments to be made about the curriculum developments presented in this study in terms of their relevance for Higher education, very careful cross-comparisons were established with current practice and the literature (2.5(3), 2.7.2(3, 4), 2.7.3(2), 3.11(5), 3.12.1(3); Diagrams 2.4, 2.5, 2.17, 2.19, 3.2, 3.3, 3.5, 3.7, 3.9 to 3.14, 3.16; Tables 3.2, 3.3; Appendices Y, Z, AA).

(3) The general findings of this illuminative perspective were set out in sections 2.8 and 3.13. A picture was presented of a distinctive, close knit college, which was affected by all of the pressures for rapid expansion and contraction in the 1960s and 1970s. The College still retained its historical middle class image, although it no longer recruited so many students from the professional classes and 60% of them were 'first generation' higher education. The majority of the students came from the South of England, tended to be somewhat extrovert and, although some were extremely well qualified, others had experienced only moderate success at school, resulting in a lack of academic confidence. Many found in the fourth year B. Ed. degree course an opportunity to make good earlier failure, and the growth of interest in this course was of particular importance. Differences were noted between the various main subject departments in terms of teaching methods and assessment procedures. Finally it was noted that the College library
did not appear to be as well used as the libraries of many other institutions of higher education.

(4) This broader analysis, summarised in the illuminative perspective, continued alongside the systematic development of these two innovatory courses. Initially, they were relatively discrete from each other, because I was only trying to provide a descriptive back-cloth against which to set these curriculum developments, but gradually I came to realise that they were dynamically interlinked, an idea which was further developed in my main thesis. This realisation came about because of the problems I experienced in developing both of the innovatory courses (see 7.4.1(2, 3), 7.4.2(3, 4)), which resulted in my becoming increasingly aware of the limitations of the systematic model and the need to look at the external constraints which were affecting the course.

7.6  THE MAIN THESIS

(1) Any model should be an attempt to simplify or to idealise an actual situation or social process (see 4.2.2(6)), in order for further investigations or for predictions to be made, and I tried to argue in this study that the systematic model met none of these criteria fully.

(2) As a representation of reality, the model is correct in highlighting 'objectives', 'design', 'evaluation', and 'improvement' as essential facets of the curriculum development process and these proved useful as focal points in the development of the courses (see 5.3.5.1(1), 5.4.5.1(1), 6.2.4(2), 6.7.3(2)). In practice, however, their use proved to be far more complex than the model would seem to allow for. The definition of objectives was shown to be a complex activity, involving creativity and gradual evolution (5.3.5.1(2), 6.2.4(3), 6.7.3(1)). I also noted (6.5.1.6(1)) that, in emphasising student learning objectives, the model failed to pay sufficient attention to tutor objectives, which became important in a 'team-teaching' situation. The design-stage selection of suitable learning strategies, was often more a pragmatic exploitation of, or of experiment with, media and methods as they became available, rather than a theoretical identification of an ideal teaching approach, designed to achieve particular objectives (6.6.1.4(1)). I showed that the process of evaluation ran a serious danger of warping the shape of the course as a whole and of possibly destroying some of its original objectives (6.4.1.2(2), 6.6.3.1(3)) and I also noted (6.8.2.3(1)) that, although evaluation is stressed in the model, no emphasis is given to checking the validity of the evaluation, which I felt to be essential
Finally, turning to the whole process of improvement, while it was possible to see that it worked in improving some of the specific objectives of the course, it tended to be far too introspective (5.4.5(1, 2), 5.5.5, 6.5.2(1), 6.6.2.1(2)), resulting in my concentrating on improvements within the course itself, whereas I should have been looking at factors beyond the immediate course.

In practice, therefore, the model did not prove to be an accurate representation of the curriculum development reality and gradually, as I indicated above (see 7.5.2(4)), I started to evolve the dynamic systematic explanation of Diagram (5.2) which attempted to link the systematic model with the illuminative perspective of Part One of this study.

The introduction to Part Three outlined the dynamic systematic explanation (pp. 175 to 178) and showed (Diagram 5.2) the innovatory course (cylinder 'A') in a state of interaction both with other College courses (cylinder 'B') and many other constraining factors (cylinder 'C') over a number of years. As well as affecting each other directly, they also interacted through students, staff and myself as course designer, at the level of the hidden curriculum (Introduction: Part Three, para 3).

In the main thesis sections of Chapters Five and Six of this study I attempted to test the validity of this dynamic systematic explanation, by setting it against the development of the two innovatory courses and Diagram (7.1) summarises this attempt. Looking at the flow lines of the explanation, one can see that certain lines of interaction were more strongly used than others, with the constraining factors of cylinder 'C' affecting the innovatory course strongly, particularly at the level of the hidden curriculum. Within cylinder 'C', norms (m) and processes (p) proved to be particularly significant. The norms were partly general College ones (see 6.5.1.6(2), 6.6.3.1(2), 6.7.3(3), 6.8.2.3(2) and 6.8.3.4(2)) such as its child/student centred tradition, or underlying attitudes to educational technology; partly teaching and learning ones (see 5.3.5.2(2), 6.2.4(5), 6.4.1(3) and 6.5.2.1(2)) of both staff and students, and partly attitudinal (6.6.4.1(3)) and behavioural ones (5.7.4(8), 6.6.2.1(3)), concerning study. The processes were partly academic, concerned with assessment (5.4.5(4), 5.6.10, 5.7.6, 6.5.2.1(2), 6.7.3(3)) or, more specifically with selection for the fourth year B.Ed. degree course (5.4.5(4), 5.7.7, 6.8.3.1) or
with student wastage (5.7(4)), and partly social, concerned with end-of-term festivities (6.3.1(2)) or with the length of the working week and the social week-end (5.7(9), 6.5.2.1(3)).
(7) Still looking at cylinder 'C', constraints concerning both the staff and student personnel (n) of the College also affected the innovatory courses. These constraints resulted from staff turn-over (5.7(5)) and their previous academic experience (6.5.1.6(3), 6.8.3.4(2)), together with student academic and social background (5.7(12), 6.7.3(3)).

(8) The courses were also affected by logistical constraints (q) such as staff input to the course (5.4.5(6), 6.2.4(5)) and the uneven size of year groups (5.7(3)); by the constraints (o) imposed by changes in plant and equipment (5.3.5.2(3), 6.2.4(5), 6.6.1.4(2), 6.6.4.1(2)), and finally, by professional constraints (u) coming from outside of the College (5.4.5(6), 6.2.4(5) and 6.6.1.4(2)).

(9) Turning from the constraints which affected the innovatory course to the interaction with other courses (cylinder 'B'), there was evidence that there was strong interaction between the innovatory courses and other parallel courses the students were following (5.3.5.2(1), 5.4.5(3), 5.6(10), 5.7(6), 6.6.3.1(2) and 6.7.3(4)) and this particularly affected the simulation exercise. There was also evidence of interaction across the years ('w' and 'y') between the innovatory courses and earlier courses followed by the students and earlier courses taken by preceding year groups of students (5.6(7) and 6.5.1.6(2)).

(10) I would like to suggest that the quantity of evidence presented in the previous paragraphs supports my contention that the systematic model is far too limited as a representation of the curriculum development reality. I would also like to suggest that the dynamic systematic explanation of Diagrams (5.2 and 7.1) is a much closer approximation to that reality.

7.7 GENERAL CONCLUSIONS AND FUTURE RESEARCH

7.7.1 INTRODUCTION

(1) This final section of the study will present my general conclusions under three headings, namely about the courses themselves, about my research methods and about my central thesis. It will then discuss the possibilities for future research.

7.7.2 GENERAL CONCLUSIONS

7.7.2.1 Conclusions about the Innovatory Courses

(1) A significant aspect of the development of these two courses was
their attempt to make use of my studies in the psychology of learning
and of individual difference (7.2) and to apply the theory to practice.
A final judgment, however, would be that the theory is still incomplete
and that therefore any attempt to apply it must be tentative.

(2) The problem in attempting any judgments about the courses is that
they can be made at three different levels. Judgments can firstly be
made at the level of the active participants in the course, focusing
on the quality of their response to factors within the course itself;
judgments can also be made about the course set in a social context,
focusing on the constraints affecting the course and the students,
and examining their overt and hidden responses to these constraints.
Finally, judgments can be made at the level of the course itself,
focusing on the successful achievement of a set of course objectives.

(3) Applying the concept of three levels of judgment to the innovatory
courses, the simulation could be said to have been broadly successful
at the first level, for those students who actually participated
(5.3.3(1), 5.4.2(12), 5.4.3(2, 3), 5.4.4(2); Diagrams 5.9, 5.10).
At the second level of its context, although it was seen to be fairly
relevant professionally (5.4.3(8)), it was not completely so, mainly
because of its location just before a school practice (5.3.5.2(1)),
but more importantly because of its heavy time demand and its lack
of tangible assessment (5.3.3(11), 5.4.3(15), 5.4.5(3, 4), 5.6(4 to 7)).
In terms of the third level of judgment, the achievement of precise
objectives, the exercise was again only partially successful (5.3.4(3, 5),
5.4.3(11), 5.4.4(1) and Tables 5.1, 5.2), with uneven monitoring of
objectives on my part and only partial achievement of many of them.

(4) Applying the same three levels of judgment to the resource-
based course, the response to the course as a whole by the participants
was positive (6.2.1.2(1), 6.2.2(11)), as was the response to the
independent learning areas (6.7.2(2)) and to the process of evaluating
the course (6.8.2(2)) and even in the poor 1976 year, response to the
timetabled part of the programme remained good (6.4(2)). At the
second level of 'context', however, the response became more complex
with reservations being expressed at the overt level, in terms of
the conflict between the resource-based course and other parallel
courses (6.2.1.2(1), 6.2.2(11)), and at the hidden curriculum level,
by the constraints of Diagram (5.2) (see 6.5.1.6(2, 3), 6.6.2.1(2, 3),
6.8.3.4(2)). At the third level of the achievement of objectives,
the course was again not completely successful (6.2.1.2(2), 6.8.2(6)),
partly due to the problems identified at the second level; partly due
to the difficulty of obtaining validity in the instruments used (6.8.2.1, 6.8.2.2(3)) and partly due to inherent weaknesses in its open-ended design (6.2.3(1, 3), 6.8.3(4)).

(5) No single judgment can therefore be made about these two courses. They were both extremely complex and innovatory in design and it was understandable that they should have initial weaknesses. It is to their credit that, at the first level of judgment, they were so successful, particularly when it is remembered that they were extremely open-ended and relied on student response rather than on tutor direction (5.9.(7), 6.2.2(2, 3)). The reservations expressed at the second level of judgment, concerning the context in which the courses were taught, were generally valid and clearly affected the courses. They were, however, generally capable of resolution in principle, although, in practice, this was not always achieved. My own judgment would be that, providing the context could have been modified, both of the courses would have been even more successful. The courses were not completely effective at the third level of the precise achievement of objectives, but it may be that innovatory courses of this kind can only really focus on this more sophisticated level of operation, when first and second levels of judgment have been successfully resolved.

(6) The true significance of the courses was probably the fact that they were innovatory in design, attempting to explore alternatives, to the traditional pattern of lecture and seminar (1.5.(2)); that their development was carefully and systematically monitored over a number of years; that they emphasised independence in student learning, involving virtually no tutor direction in later years, thus leaving me free to concentrate on resource provision and management of the learning (5.4.1(2, 3), 6.2.2(1)); that they gave students first hand experience of professionally relevant approaches to learning (7.3(2)), and that they had a theoretical base in the psychology of learning (7.2(6)).

7.7.2.2 Conclusions about the Research Methodology

(1) This research study could be criticised because its central thesis only emerged retrospectively (see page 175 para. 4) and because it had no clear cut research design (5.8.(1)). The research strategy itself needs, however, to be seen in the context of the dynamics of Diagram (5.2). It changed, as did the courses, in response to the constraints of cylinder 'C' and was influenced ('v' and 'o') over the years (x) by
my readings in the literature of evaluation (see 7.5.1(3, 4)) and by increases in computer facilities (1.6.2).

(2) I have tried (7.5.1(1, 4), 7.5.2(4), 7.6) to trace how the central thesis emerged and I think have justified my use of an inductive approach. The lack of a clear cut research design can, I think, be equally defended by the unsatisfactory state of the literature (7.5.1(2)) and the resulting need to develop new evaluation techniques, which I linked where possible with the literature (7.5.2(2)).

(3) The range of techniques and analyses used in the research is summarised in Table 7.1. It is difficult to make any general comment about them as a whole, but I want to draw attention to a few of them.

(4) Firstly, accepting the limitations of quantitative data in all evaluation, one significant aspect of the course was my use of the SPSS computer program (see 1.6(2)) to monitor the longitudinal development of these courses. For the purposes of this research I established nineteen separate computer files, which between them contained 2,116 variables, ranging from basic data about each student, to such things as a response to a survey question, a work diary response (6.4(4)), an issue of a resource (6.6.2(5)), a sociometric response (6.5.1.5(3)), a standardised (3.10, 3.11) or an attitudinal (6.2.2(9)) test response. These files could be processed either separately or in combination, using the 'archive' facility of SPSS, and within each file, the data could be processed in subfile form, either for each year group separately, or in any combination, depending on the availability of data.

(5) This powerful computer program was used extensively from mid 1974 onwards and the computer analyses, listed in Table 7.1, explored its potential to the limit. The results recorded in this study, are the synthesised end products of extended and often frustrating analyses, which generated 459 abortive as well as successful computer processing runs and 155 file maintenance runs between September 1975 and May 1978 (see Acknowledgment - County Hall, Chichester).

(6) The second point which needs to be noted is the establishment of the data base for each year-group of students, which formed the foundation for much of the analysis in Part One. I tried to show in developing my main thesis, that the changing nature of this data base over the years constrained the development of both of the innovatory courses. Perhaps, even more importantly, the resulting 'illuminative perspective', linked as it was with the literature (7.5.2(2)), will enable other teachers to make informed judgments about these courses.

* This takes no note of extensive data processing prior to September, 1975
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<tr>
<th>DESCRIPTION OF ANALYSIS/TECHNIQUE</th>
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<td>Analyses of 'Statistics of Education' Series</td>
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<td>Analyses using the Computer</td>
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<tr>
<td>Assorted Surveys</td>
<td>2.7.1(1-2), 2.7.2, 2.7.3(3), 2.7.4, 3.12.1(2), 3.12.2, 3.12.3(1), 5.5.3(1), 5.5.2(3, 4), 6.6.2(5), 6.6.3(5); Diagram 3.6; page 254: footnote</td>
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<td>Validity Checks</td>
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(7) I found the semantic differential (see 5.5.3(13)) extremely useful as an instrument for monitoring certain facets of the development of these courses, but I became very aware of the relativity of many of these judgments (see 5.6(5, 6)). My use of the course rating scale (5.6(2, 3) proved to be exceptionally useful as an instrument for assessing these courses, because students were asked to rate courses against each other and this overcame many of the problems of relativity noted above, although
the proximity of final examinations clearly distorted some of the judgments.

(8) Not all of my research instruments were so successful and one, the objective test designed for the resource-based course (6.8.2.1), was extremely unsatisfactory. The important point to emerge from this attempt to develop such a test was that it raised some validity questions about the whole technique of using item analysis in their development (6.8.2.1(3)).

(9) Turning from the quantitative techniques to the less structured surveys and more impressionistic analyses, they were somewhat lacking in rigour in terms of their lack of forward planning and open-endedness, but they gained in vigour because they exploited opportunities, which might otherwise have been missed. Evaluation can at times destroy the very thing it is seeking to monitor (see 6.6.3.1(3)) and my final judgment would be that this study had about the right balance of structured and less structured investigations. The important thing is that I attempted, in developing the main thesis, to make use of all the findings, both objective and impressionistic.

7.7.2.3 Conclusions about the Main Thesis

(1) I have already indicated (7.7.2.1(2)) how my central thesis was gradually teased out and this was reflected in the fact that most chapters in this study ran to at least three rough drafts before a final one could be written.

(2) The thesis concentrated on a critical appraisal of the systematic model and has tried to argue for a broader based paradigm of development and evaluation. It may be that this implies a basic attack on the concept of a technology of education. Clearly the underlying behavioural emphasis of the systematic approach (see 4.4.2.1) is more easily applied to fields of study with greater structure and it may be that even in these, it has limitations because of its somewhat mechanistic nature. Equally clearly, the broader dynamic paradigm, presented in this study, is just as relevant to more structured as to the innovatory courses chronicled here.

(3) It is possible that alternative concepts will have to be developed and it may be that an ecological analogy may be more useful, seeing these innovatory courses as part of an ecosystem (the College), in which there is a constant interchange, not only between the organisms (students, tutors, course designer), but also between the organic and the inorganic (the courses and the constraints of Diagram 5.2, cylinders 'A', 'B',
Such an analogy would certainly account for the results recorded in this study and would not preclude the use of a technology to manage parts of the ecosystem (see 4.4.3.3(2)).

(4) In developing my main thesis, I made constant reference to Diagram (5.2), linking the curriculum developments which I charted, with the flow-lines of this diagram. This type of analysis is inevitably subjective and runs the danger of reading too much into events as recorded. Accepting these reservations, I think that the patterning summarised in Diagram (7.1) is still conclusive and am therefore satisfied that the central thesis is complete and advances our insight into the dynamic process of curriculum development. It cannot, however, be easily slotted into an established research tradition and is very much a product of a part-time student, working in relative isolation (but see Acknowledgments - para. 1).

(5) A picture emerged in this study of two attempts at curriculum development, taking place against a constantly changing flux. Given this, no final evaluation is possible, because of the relativity of the judgments and the pragmatic immediacy of student response to the overt and the hidden curriculum.

7.7.3 FUTURE RESEARCH

(1) Turning to the future, this study has highlighted the need for more clearly established research traditions (7.5.1(2)) and has attempted to tease out an alternative paradigm (Diagram (5.2)), which needs to be validated by being applied to the long term development of other courses in other institutions and modified in the light of these analyses.

(2) There is also a need to take stock of many of the instruments and techniques of enquiry, reported in the literature, and to attempt some provisional judgments as to which appear to have potential. Having done this, they need to be intensively used in later pieces of research in order to see if their early promise was justified. In connection with this, it would also help if there could be greater agreement about the variables to be monitored as standard practice and also about the way such variables might be categorised, in order for greater ease of comparison between studies. It is only by this kind of more informed

* Paraphrase of the Oxford English Dictionary (1972 Supplement) definition of an 'ecosystem'. 
replication that this field of knowledge can advance further.

(3) In view of the limitations in the literature of evaluation, I hope that there will be an increase in long term monitoring of courses in the future, because significant findings can only come as a result of this type of approach. Unfortunately the present academic system does not encourage the development of this type of mature approach.

7.8 POSTSCRIPT

(1) In reviewing the literature, I have been struck by the lack of literature about most aspects of teaching in colleges of education, and I suggest that this study, as presented, makes a significant contribution to the literature.

(2) It is important to note that all of the innovations, recorded here, were carried out in courses validated by the University of Sussex. It is to the credit of the University that it allowed such a degree of flexibility in course design that such innovatory approaches could be attempted; it is to the credit of the College that it provided the climate and the resources for their implementation.
APPENDICES
APPENDIX A

APPENDIX - A

Evaluation form given out at the end of the 1969 Resource-Based Course (see 6.2.1.2, 6.3.1(1), 6.8.2 (2,3)).
BISHOP OTTER COLLEGE, CHICHESTER

THEORY OF EDUCATION - PHILOSOPHY

Modern curriculum theory states the need to evaluate courses of study to assess their effectiveness. The education department would like to evaluate this course, and would welcome your cooperation in this. We would like you to complete this questionnaire, and to return it to Mr. Stodd's pip before the end of term.

Please answer as many questions as are relevant by ticking the appropriate answer.

1. Which area of study did you choose?
   a - Moral Education  
   b - Authority in Education  
   c - Freedom in Education  
   d - Rewards and Punishments  
   e - Streaming and Non-Streaming  
   f - Comprehensive Education  
   g - An area of your own choice.

2. Many students were interested in several of these areas. In order to make an effective choice, would you have preferred to have an outline of the different areas of study?
   a - Before Final School Practice.  
   b - A week before (i.e. before half term)  
   c - On the first day (as this year).

3. In the case of the work sheet for your area of study was the book list -
   a - Too detailed.  
   b - Satisfactory  
   c - Not detailed enough.

4. Several of the work sheets contained a section suggesting approaches to the area of study. Did your group
   a - Follow any of these in detail?  
   b - Use them as a starting point for its own pattern of work?  
   c - Disregard them completely?

5. The work sheets were all deliberately open-ended. Would you have preferred a sheet giving a much more detailed pattern of work from week to week?
   a - Yes  
   b - No.

6. Several of the work sheets indicated questions which the group might discuss. Did you
   a - Arrange a formal group meeting to discuss these?
   b - Discuss them informally or incidentally?
   c - Just think about them yourself?
   d - Disregard them completely?
7. Reasoned Position. At the start of the course, you were asked to attempt to arrive at a 'reasoned position' with regard to your area of study. Do you feel you did this?
   a - Yes [ ]  b - No. [ ]

8. Work with Children. Bearing in mind that it may well be more convenient for schools to send children to college, rather than having students into the schools, owing to lack of space, which of the following would you consider to be the most effective?
   a - Meeting and working with a small group of children in College? [ ]
   b - Meeting and working with a small group of children in school? [ ]

9. Teachers. It was proposed to bring in a group of heads and teachers so that students could question them. There was, in fact, little support for this. Was this
   a - Because the group had no questions. [ ]
   b - Because the group never considered this possibility. [ ]
   c - Because it was an inappropriate method of work for the group. [ ]

10. Books. In connection with this course, how many books did you borrow from the Library?

   1 2 3 4 5 6 7 8 9

11. How many of the books and articles kept by the library assistants did you borrow?

   1 2 3 4 5 6 7 8 9

12. Tape recordings/slides/tapes/films/newspaper reports. Did you find these useful, adequate, not useful. Please tick the appropriate column.

   TAPES
   Authority and freedom PLEASE ONLY
   Streaming TICK AGAINST
   Courtship and marriage TAPES YOU HAVE
   Sex before marriage USED. LEAVE
   Young marriage OTHER SPACES
   If things go wrong BLANK
   The Junior School
   Religion and the primary school
   Finding out
   Primary maths and science
   Reith Lecture. Men & Morality
   Children with special needs
   The disturbed & the disturbing
   The exceptionally gifted
   Ordinary or special schools
SLIDE TAPE SEQUENCE
A discipline problem
It makes you think
Classical conditioning

FILMS
Putting the law into action
Such as you
Learning to live
The sentence of the court
The last bus

Newspapers
The L.S.E. Student dispute

Thank you very much for completing this evaluation sheet. We realise that it may not have opened up areas you wish to comment on so please add your additional comments here. PLEASE PLACE THIS FORM IN MR. STODD'S PIP BEFORE THE END OF TERM.
APPENDIX - B

Evaluation Form given out at the end of the 1972 Simulation Exercise (see 5.3.3).
Evaluation of Simulation Exercise

It will help in looking critically at this exercise if all students would complete the questionnaire and return it to seminar tutors at the follow-up session on Friday February 4th.

Please tick the appropriate box. There is room for additional comment at the end of the questionnaire.

1. If there had been a choice, which of the following would you have preferred for this simulation exercise:
   a) The simulation as it was set in Ambridge and District
   b) The simulation set in a completely imaginary district with no reference to Ambridge.

2. Did you find the Archers file which you read in the first week of term (the letters, memoranda etc.):
   a) Very helpful
   b) Average
   c) Not Helpful

3. Before the introductory session in the Hall had you from the file, the pink booklet, and the notice board in the corridor:
   a) Gained a clear idea of the simulation
   b) Gained a hazy idea of the simulation
   c) No idea what it was about.

4. Was the slide tape sequence shown in Hall One setting the scene at County Hall and interviewing the Norfolk headmaster:
   a) Useful
   b) Not useful

5. Did the Hall lecture give you a clearer idea of the dynamics of the committee structure; the path a decision follows through committees before it is made,
   Yes
   No
6. Were the overhead projector transparencies
   - Legible
   - Illegible

   Please comment if you wish:

   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

7. Was the sound recording:
   - Clearly audible
   - Average
   - Inaudible

8. Did you see the link between the self instructional teaching
   methods used on this course and their possible application in
   the open plan school?
   - Yes
   - Uncertain
   - No

9. a) How much of the documentary material did you read:
   - None
   - One or two articles
   - Quite a lot
   - All of it

   b) How many books did you read in some depth.
      (Place a circle round the appropriate number)
      0 1 2 3 4 5

   c) How many books did you consult (dip into)
      0 1 2 3 4 5

   d) How many of the tape recordings did you listen to
      (Excluding the Archers tape).
      0 1 2 3 4 5
10. Did you find the study unit "The Economics of Education"?
   - Useful
   - Average
   - Not useful

11. Did you work through the questions in detail?
   - Yes
   - No

12. Did you find the comments in the slide tape sequence, 'The Economics of Education' about the different sections of this study unit?
   - Helpful
   - Not helpful

13. If your answer to 11 was 'no' can you give reasons?

14. Did you find the slide tape sequence "The Economics of Education":
   - Very difficult
   - Difficult
   - Average
   - Fairly easy
   - Easy

15. Were the diagrams and pictures in it:
   - Helpful
   - Not helpful

16. How many times did you look at this slide tape sequence?
   - Once
   - Twice
   - More than twice
17. Did you consciously try to play out a role in the simulation, different from your own?  
   Yes  
   No  

18. Indicate if you feel you have achieved a clear understanding of the way the following work:  
   a) The County Council, its committees and its sub-committees  
      A clear insight  
      Uncertain  
      Not clear  
   b) Parish Council, R.D.C., U.D.C.  
      A clear insight  
      Uncertain  
      Not clear  
   c) Teachers Association.  
      A clear insight  
      Uncertain  
      Not clear  
   d) Diocesan Education Committee,  
      A clear insight  
      Uncertain  
      Not clear  
   e) School Management Committees.  
      A clear insight  
      Uncertain  
      Not clear
20. Have you gained a clear insight into the way pressure groups can operate e.g. 
   a) Political
   b) Educational
   c) Religious

   Yes
   Uncertain
   No

21. Have you gained some insight into the mechanics of how one particular kind of simulation exercise can operate? (e.g. the use of memoranda)

   Yes
   Uncertain
   No

22. Have you consciously applied any of the concepts listed under 3a, b, c, d on page 3 of the pink booklet to the problem of closing the schools.

   Yes
   Uncertain
   No

23. Have you, as a result of the course, gained greater confidence in your own ability in committees

   Yes
   Uncertain
   No

These questions inevitably limit your answers please add extra comments below:
APPENDIX - C

Evaluation form given out at the end of the 1973 Simulation Exercise (see 5.4.3)
Evaluation of Simulation Exercise - 1972

We have very little evidence as to the effectiveness of an exercise such as this. We know that some students were highly involved, that others were partially involved and that others probably minimally.

The replies of ALL of the above groups of students are important and the more critical they are, the more accurate our evaluation.

You are asked to give your name, not so that you can be identified PERSONALLY but so that we can link this in with all the other data collected during your college course.

1. The exercise was designed to provide opportunities for leadership of Committees, Councils, pressure groups or local organisations. Chairmen are not necessarily leaders and the leader of a group does not have to be the chairman.

Did the exercise give you this opportunity for leadership?

2. This exercise was designed to provide you with an opportunity for decision-making, as to the best course of action to take when a series of alternatives were possible.

Did the exercise give you this opportunity?

3. The exercise was designed to give students INCREASED SELF CONFIDENCE in oral discussion.

Did the exercise give you such an increase? (N.B. if you already were confident before the exercise please indicate in the fourth box).

4. The exercise was designed to give you the chance to develop your powers of initiative. If you felt completely frustrated by the exercise and opted out, it was not successful. If, on the other hand, you felt some frustration but, in fact, succeeded in finding an aspect of the exercise which you could give a lot to, it was successful.

Did the exercise develop your powers of initiative?

5. The exercise was designed to extend your understanding of what happens inside a group when it tries collectively to solve a task. Was your understanding DEEPENED? (N.B. If you had this understanding before the exercise, please indicate in the fourth box).

6. The exercise was designed to give you experience in role-playing. Did you:

(a) Successfully put yourself into the role you were allocated.

(b) Have difficulty in imaginatively developing the role beyond what was initially given.

(c) Feel the need for some basic training in the techniques of role-playing.
7. The exercise was designed to give you a clear understanding of the way committees work. Please indicate if the exercise was successful in the case of the following:
   (a) County Council
   (b) Parish Council
   (c) Rural District Council
   (d) Teachers Association
   (e) Diocesan Education Committee
   (f) School Management Committee/School Governors
   (g) Parent Teachers Association
   (h) The role of the permanent officers at County Hall.

8. Have you gained a clear insight into the way the following pressure groups operate as a result of this exercise? (N.B. If you already had this insight indicate in the fourth box).
   (a) Political
   (b) Religious
   (c) Teachers Unions
   (d) Local opinion.

9. Would you see this simulation exercise as:
   (a) Developing your social awareness
   (b) Professionally relevant
   (c) Intellectually valid
   (d) Giving you experience of open plan methods of work.

10. The next two questions refer to the study unit "The Economics of Education".
    Did you apply the concept of 'cost effectiveness' to the problems posed in the exercise?

11. Did you apply the concept of 'labour intensiveness' to the problems posed in the exercise?

12. A lot of background material was provided to help you tackle the exercise. Did you make some use of? (please indicate in the fourth box if you used them in great detail).
   (a) The School Population Booklet
   (b) The 1971 Census Return
   (c) The 6" maps displayed in Halls One and Two
   (d) The Revenue Budget for Worcestershire
   (e) The Forward Capital Programme and Capital Budget
   (f) Section 13 of the 1944 Act
   (g) Standing Orders
   (h) The bus timetables

13. Even if you disagreed, did 12 above give you some insight into some of the factors behind educational decisions?

14. Did the exercise force you to look afresh at the aims of the first/middle/secondary school?

15. Did the exercise force you to look afresh at the age of transfer between these schools?

16. Did the exercise force you to look at the internal organisation of schools (e.g. timetabling, departmental structure, setting/streaming)?

Thank you for completing this, it will help us to develop future courses successfully.
### Evaluation of Simulation Exercise (1973)

**NAME .................................................................**

Place a tick in the appropriate box

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APPENDIX D

Evaluation form given out at the end of the 1973 Resource-Based Course (see 6.5.2(1), 6.6.4(3), 6.8.2 (2,3)).
It would help greatly in the modification of the course for future years if you would answer the following questions as carefully as possible.

It is very important that you give critical answers where this is necessary, because such critical answers are essential if the course is to be modified.

(1) Was your small sub-group successful?

(2) If you answered NO or NOT SURE to (1) above:
   (a) Would the provision of timetabled meeting times for sub-groups have helped in making it successful?
   (b) Would the groups have been more successful if they were given detailed tasks to carry out at each weekly meeting?
   (c) If conditions (a) and (b) above had actually been met on the course, would your answer to (a) above probably still have been 'NO' or 'NOT SURE'?

(3) The materials in the Resources Guide were classified: 'A' Inner Core, 'B' Relevant but not part of the inner core, 'C' Of wider interest.
   (a) Did you basically limit yourself to the 'A' classification (inner core)?
   (b) Did you basically limit yourself to the 'A' and 'B' classifications?
   (c) Did you use all three classifications?
   (d) Did you ignore or virtually ignore the Resources Guide completely, preferring to use your own resources?

(4) Were you satisfied with the Temporary Reference System for this course, bearing in mind that if the items were on ordinary loan one student might keep a book for up to three weeks?

(5) Do you find studying tapes:
   (a) Easy
   (b) Intellectually satisfying
(5) (c) Thought provoking
     (d) Down to earth (practical as opposed to theoretical).

(6) Do you find reading books:
     (a) Easy
     (b) Intellectually satisfying
     (c) Thought provoking
     (d) Down to earth.

(7) Do you find research reports and journal articles:
     (a) Easy
     (b) Intellectually satisfying
     (c) Thought provoking
     (d) Down to earth.

(8) Did you find the slide tape sequences on this course:
     (a) Easy
     (b) Intellectually satisfying
     (c) Thought provoking
     (d) Down to earth.

(9) Slide Tape Sequences on the course.
     If you listened to NONE put a tick in the 'NO' column.
     If you listened to ONE ONLY put a tick in the 'NOT SURE' column.
     If you listened to more than one put a tick in the 'YES' column.

(10) If it were possible to develop more slide tape sequences to put
     over particular concepts in psychology, sociology and philosophy,
     would you think this worth doing?

(11) There were a series of displays on the board in the long corridor.
     If you did not look carefully at any of the displays tick the 'NO'
     column; if you locked carefully at only one of the displays tick the
     'NOT SURE' column; if you locked carefully at more than one of the
     displays tick the 'YES' column.

(12) Were these displays effective as a TEACHING strategy?
(13) Were these displays effective in terms of display techniques?

(14) Were they a source of irritation?

(15) Did they make you aware for the first time of some of the A.V.C. equipment in College?

(16) Level of motivation on the course.

Tick 'YES' if it was high.
Tick 'NOT SURE' if it was satisfactory.
Tick 'NO' if it was low.

(17) Given that a loosely structured course suffers when in competition with the definite demands of more tightly structured courses running at the same time, should this course be made much more highly structured another year?

(18) Is it worth continuing to explore the possibilities of OPEN PLAN methods of working at student level on this course next year?

If you would like to write a general comment about any aspect of the course, please do so on the back of the answer sheet.

Thank you again for your cooperation over this.

G.J. Stodd
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Independent learning approaches used to develop critical thinking. (see 6.7.2).
MATERIAL REDACTED AT REQUEST OF UNIVERSITY
Independent Learning Approach - Critical Thinking

The paragraphs which follow are intended to give a brief idea of the range of these approaches, which were developed from 1973 onwards.

(a) Structured Experiments

Students were asked to time themselves as they completed tasks involving visual perception or verbal reasoning and then to record the result.

(b) Visual Answer Study Units

A problem was posed in the display, such as distinguishing between statements of fact and value, or deciding whether a particular piece of evidence was strong or weak. Students tackled the problem and recorded their result by sticking coloured circles on to appropriate sections of the display, thus giving public feedback of the answer and often revealing publicly the inability of the student body to operate these critical skills. On one such occasion this was achieved by literally weighing conflicting opinions, with students placing a dried bean on the side of the scales which they felt contained the correct answer.

(c) Teaching Feedback

A problem posed on a display board and the answer provided for the student, either by lifting a flap on the display, or on a tape recording linked to the display.

(d) Philosophical Treasure Hunt

Students were given the opportunity to take part in a treasure hunt with the clues placed in difficult positions, high in a tree, on the underside of a high fire-escape, high enough up a wall to mean they would need to form a human pyramid to reach the clue, hidden away in a dark cellar. Before they could move on to the next clue, they had to solve a philosophical problem such as recognising underlying assumptions.

(e) Teaching Displays

Displays containing a simple teaching point about a particular philosophical skill often just asking a simple question such as 'does statement 'A' necessarily follow from statement 'B'?'

(f) Critical Interest Displays

Displays containing no particular message but designed just to stimulate curiosity and powers of analysis. An example would be a flow chart, accompanied by appropriate sound effects on a tape loop, of the process of getting up, washing, having breakfast and going to work. The problem: to identify one key process (getting out of bed), missing from the flow chart.

(g) Simulation

The outline of the resource-based course referred (6.2.1.1(4)) to the development in 1969 of a self-instructional study unit,
based on the slide tape sequence illustrating a school discipline problem, used in the previous year's course. In this study unit, students were given outline roles of the staff of a secondary school to role-play. They were informed that they had been called into the headmaster's study at break-time, because there had been a disturbance in the sixth form centre. They were then told to listen to the slide tape sequence, and were told afterwards that break-time would finish in five minutes and the headmaster required them to achieve a solution. At the end of the five minutes, they restarted the tape and listened to a short informal lecture analysing, philosophically, the conceptual problems involved and were asked to discuss how their solution matched with the philosophical analysis. Some idea of the potential of this approach may be found in the following extract from a letter received from a small group of students who had tried out one of these sequences:

"We found this a valuable session for involving ourselves in cases which became very real to us. In fact, the ... case continued long after we'd stepped out of our roles".
Evaluation form given out at the end of the 1974 Simulation Exercise (See 5.5.3(13) and 5.8(6)).
The purpose of this form is to measure the meanings of certain parts of this Simulation. Please make your judgments on the basis of what these things mean to you. On each page of this booklet you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales:

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

fair __X__ : ___ : ___ : ___ : ___ : ___ : ___ unfair

OR

fair ___ : ___ : ___ : ___ : ___ : ___ : X unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

strong : __X__ : ___ : ___ : ___ : ___ : ___ weak

OR

strong ___ : ___ : ___ : ___ : ___ : __X__ : ___ weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active ___ : ___ : __X__ : ___ : ___ : ___ : passive

OR

active ___ : ___ : ___ : ___ : ___ : __X__ : passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe ___ : ___ : ___ : ___ : ___ : ___ : X dangerous

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

THIS NOT THIS

(2) Be sure you check every scale for every concept — do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the test. This will not be the case; do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgment. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

(1) The Simulation Exercise as a Whole

Good ____________________________ Bad
Active ____________________________ Passive
Not Intellectual ____________________________ Intellectual
Simple ____________________________ Complex
Intense ____________________________ Relaxed

The above judgments were repeated for the following:

(2) The Slide Tape Study Unit: "The Economics of Education".
(3) You as a Leader in the Exercise.
(4) Your Self Confidence in the Exercise.
(5) Your Most Important Group or Committee in the Exercise.
(6) Pressure Groups in the Exercise.
(7) Professional Relevance of the Exercise.
(8) The Parish Notice Board, Maps and Photographs.
(9) The Support Background Material (e.g. population booklet).
(10) School Reorganisation.
(11) The Economics of Education.

A lot of background materials was provided to help you tackle the exercise. What use did you make of it?

<table>
<thead>
<tr>
<th>(a) The School Population Booklet</th>
<th>Great Deal</th>
<th>Average</th>
<th>Limited</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b) The 1971 Consensus Return</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) The 6&quot; maps displayed in Halls 1 &amp; 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) The Revenue Budget for Worcestershire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) The Forward Capital Programme and Capital Budget</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(f) Section 13 of the 1944 Act</td>
<td></td>
<td></td>
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<tr>
<td>(g) Standing Orders</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(h) The bus timetables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Education Statistics 1970-71</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Evaluation form used, basically unchanged, at the end of the 1974 and 1975 Resource-Based courses (see 6.2.2(9), 6.5.2(3), 6.6.4(3), 6.7.2(2), 6.8.2(1)).
It would help in the modification of this course for future years if you would answer the following questions as carefully as possible on the answer sheet.

It is important if the course is to be effectively developed, that your answers should be very critical where this is appropriate.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Don't Know</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) I liked the way the materials were classified in the Resources guide to the course.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) I wish the Resources Guide had not contained so many items.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) I do not like being 'spoon-fed' with classified resources and would rather find books for myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) The course stretched me intellectually</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) My ideas in the area of study I chose are still confused.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6) Make an assessment of the courses below on the criteria shown and set it out as in the example. (French Students to place asterisk in 'c')

| a) Term 3 course in Education (1st Year) | 4 |
| b) Psychology Course as a whole, i.e. Personality, Creativity, Intelligence, Language | 1 |
| c) Simulation Exercise (Ambridge) | 5 |
| d) Sociology Course (excluding collecting data) | 2 |
| e) Collecting Data (computer) | 6 |
| f) Term 7 theory (including learning packages) | 3 |
| g) 'Aims and values' | 7 |

<p>| 7) Place a tick in the column which most appropriately answers the questions below. Again it is stressed these answers will NOT BE DIVULGED and will, in fact, be processed by non teaching staff. |
|---|---|---|---|---|
| a) When reading on this course did you find you reached a point when the pages seemed blank and empty of meaning? | Always | Frequently | Sometimes | Seldom |
| b) Is your written work in education normally handed in on time? | | | | |
| c) Are you prevented from study by visitors or friends dropping in? | | | | |
| d) Do you have facilities for undisturbed study? | | | | |
| e) Did you study resources classified as 'B' and 'C' on the Resources Guide? | | | | |
| f) Do you study on other courses related subjects outside the immediate requirements of your course? | | | | |
| g) Did you have difficulty in settling down to study? | | | | |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>h) Did personal problems interfere with your studies on this course?</td>
<td>Always, Frequently, Seldom</td>
</tr>
<tr>
<td>i) Did you find yourself too tired or listless to study efficiently?</td>
<td></td>
</tr>
<tr>
<td>k) While studying on this course did you daydream?</td>
<td></td>
</tr>
<tr>
<td>l) Did you ask questions during any of the set sessions on this course?</td>
<td></td>
</tr>
<tr>
<td>m) Do you find difficulty expressing your ideas orally?</td>
<td></td>
</tr>
<tr>
<td>n) Do you find difficulty expressing your ideas in writing?</td>
<td></td>
</tr>
<tr>
<td>o) Do you ask advice from members of staff when you meet a difficulty in your study?</td>
<td></td>
</tr>
<tr>
<td>p) Do you follow up references given in courses?</td>
<td></td>
</tr>
<tr>
<td>q) Do you re-read and complete any notes made by you during lectures/seminars in education soon after the lecture?</td>
<td></td>
</tr>
<tr>
<td>r) Do you find difficulty in concentrating on the subject matter of education lectures?</td>
<td></td>
</tr>
<tr>
<td>s) Do you find difficulty in concentrating on the subject matter of seminars?</td>
<td></td>
</tr>
<tr>
<td>t) Do you revise throughout the year rather than just before examinations?</td>
<td></td>
</tr>
<tr>
<td>u) Do you have difficulty in getting into your stride at the beginning of an examination?</td>
<td></td>
</tr>
<tr>
<td>v) Do you feel confident in the examination room?</td>
<td></td>
</tr>
<tr>
<td>w) Do you find more difficulty in expressing ideas under examination conditions than in ordinary written work?</td>
<td></td>
</tr>
<tr>
<td>x) Are you troubled by the time limits imposed by examinations?</td>
<td></td>
</tr>
<tr>
<td>y) Do you look over examination papers set in previous years?</td>
<td></td>
</tr>
<tr>
<td>z) Do you work better under a fairly rigid timetable imposed from above as opposed to planning your own study times?</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Options</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>aa) Do you try to organise your knowledge of a subject rather than memorise a collection of facts?</td>
<td></td>
</tr>
<tr>
<td>bb) Are your studies in education more of a grind than a pleasure?</td>
<td></td>
</tr>
<tr>
<td>cc) Do you have a study routine which you stick to, rather than studying when your feel like it?</td>
<td></td>
</tr>
<tr>
<td>dd) Do your studies in education come before Main Subject?</td>
<td></td>
</tr>
<tr>
<td>ee) Do your studies as a whole come before your other interests?</td>
<td></td>
</tr>
<tr>
<td>ff) Did you find the lectures/tutor spots on this course a stimulus to further reading and study?</td>
<td></td>
</tr>
<tr>
<td>gg) Do you find education lectures in general a stimulus to further study and reading?</td>
<td></td>
</tr>
<tr>
<td>hh) Do you apportion your study time according to your achievement in different sections of the total College course?</td>
<td></td>
</tr>
<tr>
<td>jj) Do you apportion your study time according to its professional relevance?</td>
<td></td>
</tr>
<tr>
<td>kk) Do you spend a disproportionate amount of time on your favourite subject?</td>
<td></td>
</tr>
<tr>
<td>ll) Do you have difficulty with mathematics?</td>
<td></td>
</tr>
<tr>
<td>mm) Are you systematic in making notes during lectures/seminars?</td>
<td></td>
</tr>
<tr>
<td>nn) Do your notes form a useful basis for revision and further work?</td>
<td></td>
</tr>
<tr>
<td>oo) Do you draw up a timetable of your studies?</td>
<td></td>
</tr>
<tr>
<td>pp) Do you stay up late studying the night before an examination?</td>
<td></td>
</tr>
<tr>
<td>qq) Do you systematically file your notes?</td>
<td></td>
</tr>
</tbody>
</table>
6. How many hours last week did you spend on your own work? (i.e., not in contact with a tutor) The grid below has been designed to help you remember. Please include all types of studying (reading, writing-up practicals, essays etc.) We are interested in your typical study pattern. If last week was unusual, or if you don't remember exactly when you worked, indicate your approximate study pattern without exaggerating. Ring the number of hours you worked (even if it was 0) in each part of each day.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of Hours Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Morning</td>
</tr>
<tr>
<td>Sunday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Monday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Tuesday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Wednesday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Thursday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Friday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Saturday</td>
<td>0 ½ 1 2 3</td>
</tr>
<tr>
<td>Grand Total</td>
<td>0 4 1 2 3 4</td>
</tr>
</tbody>
</table>

Total hours worked:
<table>
<thead>
<tr>
<th>Morning</th>
<th>Afternoon</th>
<th>Evening</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Please answer this question with reference to the last long vacation (August 1974).

a) Paid employment unconnected with study
   weeks

b) Paid employment connected with study
   weeks

c) Estimated weeks' holiday
   weeks

d) Estimated week's study
   weeks
10. Please place a tick in the most appropriate box for the following.
LIMIT YOUR JUDGEMENT TO THIS COURSE ONLY.

<table>
<thead>
<tr>
<th>The Slide Tape Sequences in the School Practice Library.</th>
<th>Very</th>
<th>Quite</th>
<th>Only Slightly</th>
<th>Neutral</th>
<th>Only Slightly</th>
<th>Quite</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bad</td>
</tr>
<tr>
<td>Active</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Passive</td>
</tr>
<tr>
<td>Not Intellectual</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Intellectual</td>
</tr>
<tr>
<td>Simple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Complex</td>
</tr>
<tr>
<td>Intense</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Relaxed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Open University Films (NOT THE OTHER FILMS SHOWN)</th>
<th>Very</th>
<th>Quite</th>
<th>Only Slightly</th>
<th>Neutral</th>
<th>Only Slightly</th>
<th>Quite</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
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<td>Bad</td>
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<td>Active</td>
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<td>Passive</td>
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<tr>
<td>Not Intellectual</td>
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<td></td>
<td></td>
<td>Intellectual</td>
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<tr>
<td>Simple</td>
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<td>Complex</td>
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<tr>
<td>Intense</td>
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<td></td>
<td></td>
<td></td>
<td>Relaxed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The course as a whole.</th>
<th>Very</th>
<th>Quite</th>
<th>Only Slightly</th>
<th>Neutral</th>
<th>Only Slightly</th>
<th>Quite</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
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<td>Bad</td>
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<td>Active</td>
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<td>Passive</td>
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<tr>
<td>Not Intellectual</td>
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<td>Intellectual</td>
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<tr>
<td>Simple</td>
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<td>Complex</td>
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<tr>
<td>Intense</td>
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<td></td>
<td></td>
<td>Relaxed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The tapes used on the course</th>
<th>Very</th>
<th>Quite</th>
<th>Only Slightly</th>
<th>Neutral</th>
<th>Only Slightly</th>
<th>Quite</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Bad</td>
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<tr>
<td>Active</td>
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<td></td>
<td>Passive</td>
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<tr>
<td>Not Intellectual</td>
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<td></td>
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<td>Intellectual</td>
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<tr>
<td>Simple</td>
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<td></td>
<td>Complex</td>
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<tr>
<td>Intense</td>
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<td></td>
<td>Relaxed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Displays Opposite Student Pips</th>
<th>Very</th>
<th>Quite</th>
<th>Only Slightly</th>
<th>Neutral</th>
<th>Only Slightly</th>
<th>Quite</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
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<td></td>
<td>Bad</td>
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<tr>
<td>Active</td>
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<td>Passive</td>
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<tr>
<td>Not Intellectual</td>
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<td></td>
<td></td>
<td>Intellectual</td>
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<tr>
<td>Simple</td>
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<td>Complex</td>
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<tr>
<td>Intense</td>
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<td></td>
<td>Relaxed</td>
</tr>
</tbody>
</table>
11. Please make comments on the following using not more than FIVE sentences for each: (write answers overleaf).

i) The course evaluation carried out by G.J.S. during the last two years.

ii) The displays opposite student pips and which appeared in the long corridor last year.

iii) The teaching approach used on this course.

iv) The fact that G.J.S. has been paying particular attention to your year group.

v) Any other comments you wish to make - the more honest the better!

12. We would like to get some idea of the informal group work which takes place outside of this course. Will you please write down the names of the students with whom you have had serious discussions about the course. It would help if you would mark particular friends with an asterisk (*).

<table>
<thead>
<tr>
<th>Time</th>
<th>½ hr. - 1 hr.</th>
<th>1 hr. - 2 hrs.</th>
<th>2 hrs. - 3 hrs.</th>
<th>3 hrs. plus</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
Work card given out at the beginning of the 1974 and 1975 courses (see 6.2.2(5), 6.6.2(12)).
There are 6 weeks available for the course of 2 hours time-tabled and 2 hours independent study.

You should therefore give a minimum of 24 hours study time to it and you may choose to give more study time to it, you may choose to give less.

The purpose of this work card is to help you set a realistic target for yourself.

<table>
<thead>
<tr>
<th>TYPE OF RESOURCE (You do not need to study all kinds)</th>
<th>FOR YOUR GUIDANCE</th>
<th>INITIAL ESTIMATE IN HOURS</th>
<th>ACTUAL TIME TAKEN (in hours)</th>
<th>ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOKS</td>
<td>Allocate a block of time for this</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FILMS</td>
<td>Allow 1/2 hour per film</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAPERS</td>
<td>These are never more than 1 chapter long. Allocate a block of time for this</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAPES</td>
<td>Allow 1/2 hour per side</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TUTOR SPOTS</td>
<td>Programme &amp; length of time for these will be found on course notice board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLIDE/TAPE SEQUENCES</td>
<td>Allow 15 minutes per sequence (average)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMALL GROUP DISCUSSIONS</td>
<td>A programme of these will be found on the course notice board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEDITATION</td>
<td>A set period of time when you deliberately try to sort out ideas</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX - J

Each student in 1975 received an index, similar to this, related to their chosen area of study (see 6.6.2.(7)).
**INDEX TO RESOURCES GUIDE - 1975**

**STREAMING, an Index of Resources**

<table>
<thead>
<tr>
<th>'A' AND 'A*' MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>16, 48, 58, 61 ....</td>
</tr>
<tr>
<td>152, 154 .... 196, 300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>'B' MATERIALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10, 11, 14 .... 97, 98, 99, 103 .... 264, 272, 275, 276</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>'C' MATERIALS</th>
<th>These materials are relevant but tend to be of a wider ranging nature. THEY CERTAINLY SHOULD BE CONSIDERED FOR STUDY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15, 17, 21 .... 143, 148 .... 282, 292, 301</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE**

The numbers refer to column (1) of Table (6.1.)
Resource evaluation sheet given to all students at the start of the 1975 course (see 6.6.3(3)).
This is a guide to the Resources List you will find in A.V.C., in the Resources Library and at the desk in the main library.

The purpose of this sheet is to help you to set yourself a purposeful study plan for the next few weeks and to provide me with some useful comment on the effectiveness of these materials.

The numbers refer to the numbers in the Resources Guide.

Column 'A' should be filled in as you complete your study of the resource.

Use the following letter code to evaluate the resource. Use more than one letter if appropriate.

A - Good  E - Poor Quality but still useable  I - Wrongly classified should be (A*)
B - Adequate  F - Impossible to listen to  J - Wrongly classified should be (A)
C - Bad  G - Too Intellectual  K - Wrongly classified should be (B)
D - Good Quality Sound  H - Too low level  L - Wrongly classified should be (C)
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBERS OF RESOURCES YOU INTEND TO STUDY</td>
<td>TIME T. KEN TO STUDY RESOURCE</td>
<td>EVALUATION FOR C. T. CATEGORIES SEE OVERLEAF</td>
</tr>
<tr>
<td>EXAMPLE 91</td>
<td>20 mins</td>
<td>B, E, I.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUMBER OF RESOURCES TO STUDY</td>
<td>TIME T. KEN FOR RESOURCE C. T. CATEGORIES</td>
<td>EVALUATION SEE OVERLEAF</td>
</tr>
</tbody>
</table>
Course analysis sheet and resources request form - 1976. (See 6.2.2(5), 6.6.2(10), 6.6.3(3)).
There are six weeks available for this course with two hours timetabled time and two hours for independent study. On average, therefore, students will give 24 hours of study time to it.

The purpose of this work card is to help you to set a realistic target for yourself in the open-ended course.

Please hand the completed card in at the final evaluation session for the course in the second week of the summer term.

<table>
<thead>
<tr>
<th>Week Beginning</th>
<th>ACTIVITY</th>
<th>Time Spent in Minutes</th>
<th>ANALYSIS. Please make critical comments on any particular aspect.</th>
</tr>
</thead>
<tbody>
<tr>
<td>23rd February</td>
<td>Reading</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Listening to Tapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TUTOR SPOTS</td>
<td>etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>etc.</td>
<td>etc.</td>
<td></td>
</tr>
</tbody>
</table>

**RESOURCES REQUEST FORM - 1976**

**EVALUATION CODES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>GOOD CONTENT</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>ADEQUATE CONTENT</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>BAD CONTENT</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>GOOD QUALITY SOUND</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>POOR QUALITY SOUND, BUT STILL USEABLE</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>VERYpoor QUALITY SOUND</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>TOO INTELLECTUAL</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>TOO LOW LEVEL</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>CLASSIFY AS A*</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>CLASSIFY AS A</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>CLASSIFY AS B</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>CLASSIFY AS C</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>USE ANOTHER YEAR</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>DO NOT USE ANOTHER YEAR</td>
<td></td>
</tr>
</tbody>
</table>

**PLEASE COMPLETE AN EVALUATION FOR EACH ISSUE**

<table>
<thead>
<tr>
<th>Resource Number</th>
<th>Date</th>
<th>Study Time</th>
<th>Evaluation Codes</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 201</td>
<td>29/2/76</td>
<td>54 mins.</td>
<td>A, G, A.</td>
<td>Good but can you suggest an alternative viewpoint?</td>
</tr>
<tr>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
<td>etc.</td>
</tr>
</tbody>
</table>
APPENDIX M

Evaluation form used at the end of the 1976 Resource-Based Course (see 6.2.2(9), 6.7.2(2), 6.8.2(1)).
BISHOP OTTER COLLEGE  
CHICHESTER  

Education Department  

NAME:  

Theory of Education - Year 3  

Spring/Summer, 1976

It would help in the modification of this course for future years if you would answer the following questions as carefully as possible on the answer sheet.

It is important if the course is to be effectively developed, that your answers should be very critical where this is appropriate.

1. You have taken the following theory of education courses:

(A) Term 3 course (1st Year)  
(B) Psychology (Term 4)  
(C) Administration (Chichester 1980)  
(D) Sociology (Term 6)  
(E) Term 7 (Educational Objectives)  
(F) Aims and Values (Term 8)

Please place them in rank order according to the following criteria. (The two examples may help. Note that in the second example, two courses have tied for second place).

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Motivation</td>
<td>A</td>
<td>D</td>
<td>E</td>
<td>B</td>
<td>C</td>
<td>F</td>
</tr>
<tr>
<td>Intellectual Difficulty</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional Relevance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breadth of Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Endedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thought Provoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Relevance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EXAMPLE A: A D E B C F  
EXAMPLE B: B E F C D A
2) Place a tick in the column which most appropriately answers the questions below. Again it is stressed these answers will NOT BE DIVULGED and will, in fact, be processed by non-teaching staff.

<table>
<thead>
<tr>
<th>Question</th>
<th>Always</th>
<th>Frequently</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) When reading on this course did you find you reached a point when the pages seemed blank and empty of meaning?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Is your written work in education normally handed in on time?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) Are you prevented from study by visitors or friends dropping in?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) Do you study on other courses related subjects outside the immediate requirements of your course?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) Did you ask questions during any of the set sessions on this course?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) Do you find difficulty expressing your ideas orally?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g) Do you find difficulty expressing your ideas in writing?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h) Do you ask advice from members of staff when you meet a difficulty in your study?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Do you follow up references given in courses?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j) Do you revise throughout the year rather than just before examinations?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>k) Do you feel confident in the examination room?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) Do you work better under a fairly rigid timetable imposed from above as opposed to planning your own study times?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m) Are your studies in education more of a grind than a pleasure?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n) Do your studies in education come before Main Subject?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o) Do your studies as a whole come before your other interests?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p) Do you apportion your study time according to your achievement in different sections of the total College course?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>q) Do you apportion your study time according to its professional relevance?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r) Are you systematic in making notes during lectures/seminars?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>s) Do your notes form a useful basis for revision and further work?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. How many hours last week did you spend on your own work? (i.e. not in contact with a tutor). The grid below has been designed to help you remember. Please include all types of studying (reading, writing-up practicals, essays etc.) We are interested in your typical study pattern. If last week was unusual, or if you don't remember exactly when you worked, indicate your approximate study pattern without exaggerating. Ring the number of hours you worked (even if it was 0) in each part of each day.

<table>
<thead>
<tr>
<th>Day</th>
<th>Morning</th>
<th>Afternoon</th>
<th>Evening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Monday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Tuesday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Wednesday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Thursday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Friday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Saturday</td>
<td>0 1 2 3</td>
<td>0 1 2 3</td>
<td>0 1 2 3 4</td>
</tr>
</tbody>
</table>

Grand Total

Total hours worked: Morning | Afternoon | Evening

4. Please answer this question with reference to the last long vacation (August 1975)

<table>
<thead>
<tr>
<th></th>
<th>weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Paid employment unconnected with study</td>
<td></td>
</tr>
<tr>
<td>b) Paid employment connected with study</td>
<td></td>
</tr>
<tr>
<td>c) Estimated weeks' holiday</td>
<td></td>
</tr>
<tr>
<td>d) Estimated week's study</td>
<td></td>
</tr>
</tbody>
</table>
5. Please place a tick in the most appropriate box for the following.

<table>
<thead>
<tr>
<th></th>
<th>Very Good</th>
<th>Quite Good</th>
<th>Neutral</th>
<th>Quite Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chichester 19801</td>
<td>Good</td>
<td></td>
<td>Bad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active</td>
<td>Passive</td>
<td>Intellectual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Intellectual</td>
<td>Intellectual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple</td>
<td>Complex</td>
<td>Relax</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intense</td>
<td>Relax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aims Values Course</td>
<td>Good</td>
<td></td>
<td>Bad</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Active</td>
<td>Passive</td>
<td>Intellectual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Intellectual</td>
<td>Intellectual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple</td>
<td>Complex</td>
<td>Relax</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intense</td>
<td>Relax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation of Courses</td>
<td>Good</td>
<td></td>
<td>Bad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>by G.J.S.</td>
<td>Active</td>
<td>Passive</td>
<td>Intellectual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Intellectual</td>
<td>Intellectual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple</td>
<td>Complex</td>
<td>Relax</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intense</td>
<td>Relax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Displays opposite</td>
<td>Good</td>
<td></td>
<td>Bad</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Pips</td>
<td>Active</td>
<td>Passive</td>
<td>Intellectual</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not Intellectual</td>
<td>Intellectual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Simple</td>
<td>Complex</td>
<td>Relax</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intense</td>
<td>Relax</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Please write notes for as many of these headings as you feel able. If you prefer to detach this page in order to write anonymously, please do so.

(a) The teaching approach used on this particular course.

(b) If you did not give much time to this course, please say why.

(c) Traditional lecture/seminar taught courses.

(d) Innovatory courses such as Chichester 1980.

(e) Independent Learning areas in the long corridor and opposite student pips.

(f) The presence or absence of seminar tutors in a course.

(g) The relevance of educational theory to you as an intending teacher.

(h) B.Ed. selection procedures as they affected you on this course.

(i) If you were following a main subject for which you had no 'A' level how, if at all, this influenced your work in education.

(j) The effect of students leaving on you or your friends (with reference to work only)

(k) Academic standards in different departments. (DO NOT NAME THE DEPARTMENTS!)

Thank you for doing this.

Graham Stodd
APPENDIX N

Written test given at the end of the 1977 Resource-Based Course (See 6.2.3(3)).
You have 60 minutes to prepare and answer ONE of the questions below. Your answer will be looked at in terms of the following criteria:

(i) a clearly developed argument.
(ii) originality and independence of arguments.
(iii) use of accurate factual support from practice and/or the literature.
(iv) discussion of the implications of evidence used.
(v) identification and discussion of value questions.
(vi) ability to identify underlying assumptions behind theory and practice.
(vii) elaboration of the meaning of concepts.
(viii) breadth of reading.

1. You have been looking at one of five optional areas of study on this course, develop an argument about one aspect of this chosen area, drawing on theory and practice.

2. Education is concerned with ideologies. Critically discuss this statement with particular reference to your chosen area of study on this course.

3. Make a critical assessment of the relevance of the theory of education to the practicing teacher, focusing on some aspects of your chosen area of study.

4. Values in education are relative to the values of a teacher - discuss.

5. Attempt a discussion of some of the ethical questions (questions of value) raised by your study of your chosen area.
Feedback profile given to students following the marking of the written test (Appendix N) in 1977. (See 6.2.3.(5)).
STUDENTS NAME: ....................................................

The following are your scores on my content analysis of your written question, together with the average score (mean) and variation from the average of two-thirds of the year group (standard deviation).

I feel it is important that you DO NOT REGARD THIS ANALYSIS AS AN ASSESSMENT, but rather use it as a way of identifying aspects of your written work, which might be improved.

Two of the criteria are based on the following subjective criteria:

**Argument**:  
0 = No shape at all  
1 = Either a very poor shape or meandered  
2 = Some shape, but not very clear OR there was no conclusion to the argument  
3 = Satisfactory Shape to the argument  
4 = Clear  
5 = Extremely clear

**Originality**:  
0 = No evidence of students own ideas or development of an independent position  
1 = Slight evidence of students own ideas, but very little or no independence of position  
2 = Evidence of students own ideas, but only limited independence of position  
3 = Good evidence of own ideas and some independence  
4 = Very good evidence of ideas and independent position  
5 = High Originality

<table>
<thead>
<tr>
<th>Argument</th>
<th>Originality</th>
<th>Fact</th>
<th>Implication</th>
<th>Value</th>
<th>Assumption</th>
<th>Concept</th>
<th>Breadth</th>
<th>Evaluation of Evidence</th>
<th>Professional Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.9 (1.1)</td>
<td>2.2 (1.0)</td>
<td>4.9 (2.8)</td>
<td>1.2 (1.2)</td>
<td>0.7 (1.0)</td>
<td>1.5 (1.4)</td>
<td>1.7 (1.2)</td>
<td>0.3 (0.6)</td>
<td>4.3 (2.2)</td>
<td>2.9 (1.8)</td>
</tr>
</tbody>
</table>

-1-
I have used two additional criteria, the evaluation of the evidence used and the application of the theory to the practical situation, and I hope they will be useful.

In order to get these results into perspective, you may care to examine the diagram which compares the results of your year group with similar analyses carried out in 1974 and 1975. There is, however, one important difference. In 1974 and 1975, the analysis was of those students answering the philosophy question on the final examination whereas this year all students answered the question.

In order to interpret the diagram, consider your own year group performance in the value criterion. 57% of the answers contained no discussion of value questions, 27% only contained one example of this type of discussion, 11% two, 3% three and 2% 4 examples of this type of discussion. I suggest that this diagram provides food for thought.

COURSE PROFILE (PLEASE LET ME KNOW IF I HAVE MADE ANY MISTAKES!)

<table>
<thead>
<tr>
<th>0</th>
<th>1-5</th>
<th>6-10</th>
<th>11 plus</th>
</tr>
</thead>
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<tr>
<td>6-10</td>
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<td></td>
</tr>
<tr>
<td>11 plus</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

of the set resources were borrowed from the library. It may be that others were used of which I have no record.

of the time-tabled sessions on the course were attended, but in one or two cases, students failed to sign the list or produced an illegible signature

You may wish to discuss some of these points and I will be in the Conference Room at 9.15 a.m. on the first Wednesday of term to do this.

Finally, may I say thank you for your response to the course. I hope to provide detailed feed-back on it before you go down.

Graham Stodd
21/4/77
ANALYSIS OF PHILOSOPHY

QUESTION - FINAL EXAMINATION

1974, 1975, 1977

FACT

RECOGNITION OF ASSUMPTIONS

DISCUSSION OF VALUE QUESTIONS

DISCUSSION OF CONCEPTS

EVIDENCE OF BREADTH OF READING

DISCUSSION OF IMPLICATIONS

APPENDIX - P

Work Diary given to students at the start of the 1977 Resource-Based Course. (see 6.2.3 (6)).
In order to provide you with some structure on this open ended course, you are required to keep this work diary. Please SIGN UP for the sessions you intend to go to on the Notice board by student pips and make a note on this diary of these sessions. Having attended them please make an evaluation of them using the following codes.

A = GOOD CONTENT
B = ADEQUATE CONTENT
C = POOR CONTENT
D = PROFESSIONALLY RELEVANT
E = PROFESSIONALLY IRRELEVANT
F = STIMULATING
G = BORING
H = PERSONALLY USEFUL
I = TOO LOW LEVEL
J = TOO INTELLECTUAL

IF YOU WISH TO COMMENT SPECIFICALLY ON A FILM/TAPE PLACE A '1' before the letter (e.g. 1A or 1F).

IF YOU WISH TO COMMENT SPECIFICALLY ON THE DISCUSSION place a 2 before the letter (e.g. 2A, 2F).

FOR GENERAL COMMENTS APPLYING TO THE WHOLE SESSION use letters on (e.g. A or F).

THIS DIARY MUST BE COMPLETED AND Brought ALONG TO THE FINAL SESSION OF THIS COURSE ON WEDNESDAY, 23rd MARCH 1977 AT 2:15 A.M.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TITLE</th>
<th>TIME</th>
<th>ROOM</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>23/2/77</td>
<td>Pebbles into Diamonds</td>
<td>10.40</td>
<td>Hall</td>
<td></td>
</tr>
<tr>
<td>23/2/77</td>
<td>1944 and After</td>
<td>11.10</td>
<td>Hall</td>
<td></td>
</tr>
<tr>
<td>24/2/77</td>
<td>Summerhill</td>
<td>4.15</td>
<td>Conf.</td>
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<tr>
<td>26/2/77</td>
<td>Moral Education Project 8-13</td>
<td>2.00</td>
<td>Conf.</td>
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</tr>
<tr>
<td>2/3/77</td>
<td>The Problem of Control</td>
<td>9.15</td>
<td>Ed.2</td>
<td>11.05</td>
</tr>
<tr>
<td>2/3/77</td>
<td>Philosophy - The Concept of Freedom</td>
<td>9.20</td>
<td>Conf.</td>
<td></td>
</tr>
<tr>
<td>2/3/77</td>
<td>Police Juvenile Liaison Bureau</td>
<td>11.05</td>
<td>Conf.</td>
<td></td>
</tr>
<tr>
<td>2/3/77</td>
<td>Streaming and Setting</td>
<td>11.10</td>
<td>Geog.2</td>
<td></td>
</tr>
<tr>
<td>3/3/77</td>
<td>'Play' - Research and Development</td>
<td>2.00</td>
<td>Ed.2</td>
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</tr>
<tr>
<td>3/3/77</td>
<td>Philosophy - Conditioning in the Classroom</td>
<td>2.00</td>
<td>Conf.</td>
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</tr>
<tr>
<td>7/3/77</td>
<td>Social Class</td>
<td>2.00</td>
<td>Conf.</td>
<td></td>
</tr>
<tr>
<td>7/3/77</td>
<td>The Philosophy of the Primary School</td>
<td>2.00</td>
<td>Ed.2</td>
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<tr>
<td>9/3/77</td>
<td>Counselling and Guidance</td>
<td>9.15</td>
<td>Conf.</td>
<td></td>
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<tr>
<td>9/3/77</td>
<td>The Philosophy of the Infant School</td>
<td>9.15</td>
<td>Ed.3</td>
<td></td>
</tr>
<tr>
<td>10/3/77</td>
<td>Democracy in the Secondary School</td>
<td>2.00</td>
<td>Conf.</td>
<td></td>
</tr>
<tr>
<td>16/3/77</td>
<td>Socialisation</td>
<td>9.15</td>
<td>Conf.</td>
<td></td>
</tr>
<tr>
<td>16/3/77</td>
<td>The Core Curriculum</td>
<td>9.15</td>
<td>Ed.2</td>
<td>or Hall</td>
</tr>
<tr>
<td>16/3/77</td>
<td>The Teacher/Pupil moral Relationship</td>
<td>11.05</td>
<td>Conf.</td>
<td></td>
</tr>
<tr>
<td>23/3/77</td>
<td>Written Task</td>
<td>9.15</td>
<td>Hall</td>
<td></td>
</tr>
<tr>
<td>23/3/77</td>
<td>Evaluation discussion of Course</td>
<td>11.05</td>
<td>Hall</td>
<td></td>
</tr>
</tbody>
</table>
Year group's evaluation of individual comments made by students in earlier years - 1977 (see 6.5.1(4) - footnote).
EVALUATION OF STUDENT COMMENTS

Over the years students have made written additional comments as part of the formal evaluation of this course. It is always difficult to know how representative these are of general student opinion and so I would welcome your reactions to these comments.

Please switch on the projector and work through the slides, filling in your reactions in the form below. IT IS IMPORTANT TO WRITE IN THE NUMBER OF THE SLIDE YOUR COMMENTS REFER TO,

PLEASE RETURN THE FORM TO MY PIP BEFORE THE END OF TERM AND TICK OFF YOUR NAME ON THE YEAR LIST. I will display the results early next term.

THANK YOU VERY MUCH.

Graham Stodd

<table>
<thead>
<tr>
<th>SLIDE NUMBER</th>
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<th>AGREE</th>
<th>NEUTRAL</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
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</tbody>
</table>
APPENDIX - R

Evaluation form completed at the end of the 1977 Resource-Based Course (see 6.6.4(3), 6.7.2(2), 6.8.2 (1)).
It would help in the modification of this course for future years if you would answer the following questions as carefully as possible on the answer sheet.

It is important if the course is to be effectively developed, that your answers should be very critical where this is appropriate.

1. You have taken the following theory of education courses:
   (A) Term 3 course (1st year)  (D) Term 7 (Education Objectives)
   (B) Psychology (Term 4)  (E) Aims and Values (Term 8)
   (C) Sociology (Terms 5 & 6)

Please place them in rank order according to the following criteria. (The two examples may help. Note that in the second example, two courses have tied for second place.)

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
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</thead>
<tbody>
<tr>
<td>Personal Motivation</td>
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<tr>
<td>Intellectual Difficulty</td>
<td></td>
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<tr>
<td>Professional Relevance</td>
<td></td>
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<tr>
<td>Breadth of Reading</td>
<td></td>
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<tr>
<td>Open Endedness</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Thought Provoking</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Personal Relevance</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**EXAMPLE A**

| A | D | E | B | C |

**EXAMPLE B**

| B | E | A | C | D |
Please place a tick in the most appropriate box for the following.

<table>
<thead>
<tr>
<th></th>
<th>Very</th>
<th>Quite</th>
<th>Only Slightly</th>
<th>NEUTRAL</th>
<th>Only Slightly</th>
<th>Quite</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(1)</strong> Aims Values Course</td>
<td>Good</td>
<td></td>
<td></td>
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<td></td>
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<td>Bad</td>
</tr>
<tr>
<td></td>
<td>Active</td>
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<td></td>
<td></td>
<td>Passive</td>
</tr>
<tr>
<td></td>
<td>Not Intellectual</td>
<td></td>
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<td></td>
<td></td>
<td>Intellectual</td>
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<tr>
<td></td>
<td>Simple</td>
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<td>Complex</td>
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<td></td>
<td>Intense</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Relaxed</td>
</tr>
<tr>
<td><strong>(2)</strong> Evaluation of Courses by G.J.S.</td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Bad</td>
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<tr>
<td></td>
<td>Active</td>
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<td></td>
<td>Not Intellectual</td>
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<td>Intellectual</td>
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<td>Simple</td>
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<td>Intense</td>
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<td></td>
<td>Relaxed</td>
</tr>
<tr>
<td><strong>(3)</strong> The displays opposite student pips</td>
<td>Good</td>
<td></td>
<td></td>
<td></td>
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<td>Bad</td>
</tr>
<tr>
<td></td>
<td>Active</td>
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<tr>
<td></td>
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<td>Relaxed</td>
</tr>
<tr>
<td><strong>(4)</strong> The tape recordings on this particular course</td>
<td>Good</td>
<td></td>
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<td>Bad</td>
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<td></td>
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<td>Not Intellectual</td>
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<td>Relaxed</td>
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</tbody>
</table>
The open university films used on this particular course

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<th>(5)</th>
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<th>Active</th>
<th>Not Intellectual</th>
<th>Simple</th>
<th>Intense</th>
<th>Bad</th>
<th>Passive</th>
<th>Intellectual</th>
<th>Complex</th>
<th>Relaxed</th>
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</thead>
</table>

The slide tape sequences on this course

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<th>Bad</th>
<th>Passive</th>
<th>Intellectual</th>
<th>Complex</th>
<th>Relaxed</th>
</tr>
</thead>
</table>

Thank you for completing the sheet and entering into the spirit of this course. I hope you will come back to the Hall after coffee this morning at 11.05 a.m. to take part in a more informal discussion of the course. I know that you will come if you have found the course worthwhile; I hope you will come if you did not find it worthwhile so that I can find out why and do something about it another year.

Graham Stodd
Resource evaluation sheet - 1977
(see 6.6.3(3)).
EVALUATION

It will be most helpful in modifying these resources if you would use the following codes to indicate your views.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Good Content</td>
</tr>
<tr>
<td>B</td>
<td>Adequate Content</td>
</tr>
<tr>
<td>C</td>
<td>Bad Content</td>
</tr>
<tr>
<td>D</td>
<td>Good Quality Sound</td>
</tr>
<tr>
<td>E</td>
<td>Poor Quality Sound but still usable</td>
</tr>
<tr>
<td>F</td>
<td>Poor Quality Sound - remove tape</td>
</tr>
<tr>
<td>G</td>
<td>Too intellectual</td>
</tr>
<tr>
<td>H</td>
<td>Too Low Level</td>
</tr>
<tr>
<td>I</td>
<td>Re-classify in Guide as A*</td>
</tr>
<tr>
<td>J</td>
<td>Re-classify in Guide as A</td>
</tr>
<tr>
<td>K</td>
<td>Re-classify in Guide as B</td>
</tr>
<tr>
<td>L</td>
<td>Re-classify in Guide as C</td>
</tr>
<tr>
<td>M</td>
<td>Use resource another year</td>
</tr>
<tr>
<td>N</td>
<td>Do not use resource another year</td>
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<th>EVALUATION CODES</th>
<th>OTHER COMMENT</th>
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</table>
APPENDIX - T

Resource evaluation sheet - 1972 (see 6.6.3(3)).
BISHOP OTTER COLLEGE
CHICHESTER

THEORY OF EDUCATION

AIMS VALUES - 1972

In order to assess the value of all of the resource material provided for this course, it will be very helpful if you would complete this sheet and place in my pip.

Thank you for your co-operation.

G.J.Stodd.

Title of resource (e.g. "A Discipline Problem 107A")

Usefulness

a - Very useful
b - Adequate
c - Not useful.

Title of the Course you are following

a - Comprehensive Education
b - Streaming
c - Rewards and Punishment
d - Freedom and Authority
e - Moral Education.

Classification of the Resource

If you feel the classification needs amendment, please indicated below.

Any other comments
Teaching methods semantic differential
given to 1971-1974 year group (see 5.1(4),
5.4.3(12), 5.5.3(13), 5.8(5) and 6.7.2(2)).
Semantic Differential

Typical Instructions

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In taking this test, please make your judgments on the basis of what these things mean to you. On each page of this booklet you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales:

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your check-mark as follows:

\[
\text{fair } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{unfair}
\]

OR

\[
\text{fair } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{X unfair}
\]

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

\[
\text{strong } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{weak}
\]

OR

\[
\text{strong } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{X weak}
\]

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should check as follows:

\[
\text{active } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{passive}
\]

OR

\[
\text{active } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{X passive}
\]

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

\[
\text{safe } \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \text{dangerous}
\]

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

\[
\text{THIS NOT THIS}
\]

\[
\bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc
\]

\[
\bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc
\]

\[
\text{X}
\]

\[
\bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc \quad \bigcirc
\]
(2) Be sure you check every scale for every concept - do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. Make each item a separate and independent judgment. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate 'feelings' about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

Hall Lectures

<table>
<thead>
<tr>
<th>Good</th>
<th>Passive</th>
<th>Diffuse</th>
<th>Stimulating</th>
<th>Not Intellectual</th>
<th>Complex</th>
<th>Successful</th>
<th>Intense</th>
<th>Negative</th>
<th>Secure</th>
<th>Bad</th>
<th>Active</th>
<th>Concise</th>
<th>Boring</th>
<th>Intellectual</th>
<th>Simple</th>
<th>Unsuccessful</th>
<th>Relaxed</th>
<th>Positive</th>
<th>Insecure</th>
</tr>
</thead>
</table>

Repeated for: Open-ended tasks
Group Discussion (students only)
Studying a book
Group Discussion (tutor-led)
Studying a Tape Recording
The Simulation Exercise
Studying a slide tape sequence
Studying Newspaper Articles
Group Work
Studying Education Journals
The Cassette Tape Recorder
Individual Work
Statistical Findings.
Objective test - version 1 - 1972
(see 6.8.2.1).
PROBLEM AREAS IN EDUCATION (PILOT STUDY)

Your co-operation is asked for in this trial test and any comments you have to make about it will be very helpful.

Test 1: Statements of Fact, Value and Concept

A STATEMENT OF FACT can be clearly verified by reference to some external point of reference, such as a book. A STATEMENT OF VALUE is not capable of verification in this way; it tends to reflect personal opinion or a particular point of view. A STATEMENT OF CONCEPT is completely different from the above two; it attempts to clarify the meaning of the terms we use.

In this test you will find a series of statements. For each statement you will find spaces on the Answer Sheet labelled F (Fact), V (Value), C (Concept). Place a cross in the appropriate circle after each statement.

Example

<table>
<thead>
<tr>
<th>Statements of Fact, etc.</th>
<th>F</th>
<th>V</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) There are 120 immigrants in this school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) There are too many immigrants in this school.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) The term 'immigrant' is taken to mean ...</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Sex education is solely the parent's responsibility.
2. A.S. Neil is an advocate of the freedom of the child.
3. A.S. Neil is the greatest advocate of the freedom of the child.
4. There is all the difference in the world between freedom and licence.
5. Mathematics is taught in this school to sets of children of homogeneous ability ...
6. ... this means that, in these sets, all of the pupils are at a similar stage in their understanding of mathematics.
7. In comprehensive schools all pupils have the same opportunities.
8. In recent years, corporal punishment has been used decreasingly in schools.
9. Corporal punishment is very harmful to children.
10. Punishment is sometimes used as a deterrent and sometimes by way of retribution.

/Test 2 .....
Test 2: Inference

An inference is a conclusion that a person draws from certain observed or supposed facts. The inference drawn may be true or false.

In this test you will find a series of conclusions. In the light of your studies in education, examine each of the conclusions and make a decision as to its DEGREE of truth or falsity.

For each inference you will find spaces on the Answer Sheet labelled T, PT, ID, PF, F. For each inference make a cross on the Answer Sheet under the appropriate label as follows:

T - If you think that the inference is definitely TRUE; that it properly follows beyond a reasonable doubt from the evidence you have studied.

PT - If, in the light of your studies, you think the inference is PROBABLY TRUE; that is that there is better than an even chance that it is true.

ID - If you decide that there is INSUFFICIENT DATA in your studies to tell whether the inference is likely to be true or false; if your studies provide no basis for judging one way or the other.

PF - If, in the light of your studies, you think the inference is PROBABLY FALSE; that there is better than an even chance that it is false.

F - If you think the inference is definitely FALSE; that it is wrong either because it misinterprets the evidence, or because it contradicts the evidence.

11. The headmistress has decided that there is no clear cut research evidence to make her abandon streaming in her school.

12. A child-centred approach is important in all matters concerning education.

13. Psychological findings have had little effect on the current emphasis on freedom in education.

14. It is clear that the social sciences are about to make a breakthrough in our understanding of all areas of education.

15. State education is paid for by society, therefore, in all of these problem areas, education should take account of the wishes of the majority.

16. The only important psychological evidence which is relevant to a study of rewards and punishment comes from studies in conditioning (such as those of Pavlov).

17. Increasingly in these problem areas, the teaching profession is being allowed to make autonomous professional decisions, whereas in the past it was often the servant of society.

18. Much of the sociological evidence for establishing comprehensive schools has been biased on the side of equality.
19. Because there are at least as many divergent as convergent thinkers in schools today, we should . . . .

20. It is indeed fortunate in tackling these problem areas in education that there is general support for the Christian Ethic in the profession.

21. These problems are essentially practical ones. There is clear agreement as to what theoretical concepts, such as equality, freedom, morality, punishment, mean.

22. Fortunately, a child of eight has a clear idea of what is right and wrong.

Test 3: Recognition of Assumptions

An assumption is something pre-supposed, or taken for granted. Look at each of the statements below and decide whether they make assumptions or not.

<table>
<thead>
<tr>
<th>Example</th>
<th>Test 3 Recognition of Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Mr. Jones will take 3A for Religious Studies. (Assumes Mr. Jones is a Christian)</td>
<td>Made</td>
</tr>
<tr>
<td>b) 3A has one Religious Studies period a week. (Just a statement of fact about the number of periods, it is not concerned with the value of Religious Studies)</td>
<td>0</td>
</tr>
</tbody>
</table>

23. Pupils are placed in sets for mathematics teaching.

24. The school is considering the possibilities of non-streaming.

25. The Counsellor is responsible for moral education in the school.

26. The school has a system of house points.

27. The children take a keen interest in getting house points.

28. In a neighbourhood comprehensive school, all of the children from a given area go to the same school, no matter what their ability.

29. Children delight in making their own discoveries.

30. Read the following passage and then write a list on the Answer Sheet of all the main assumptions which are being made in it.

"There are nine primary schools in the town feeding two comprehensive schools, one purpose-built, and the other an amalgamation of the old grammar school with a secondary modern school a mile away.

The purpose-built school has splendid equipment, large grounds and a swimming pool. All of the pupils wear uniform, and the
examination results are very impressive. The other school has a high turn-over of staff, and the distance between the buildings creates problems.

Last year all of the primary schools in the area took in children from a permanent gypsy encampment which has been set up in the oldest area of the town.

With no 11-plus, the primary schools are able to carry out some very imaginative project work and the parents, who are often in the schools, take a keen interest in it and give valuable assistance with it.

Unfortunately, the last year has seen a growth of delinquency in the primary schools with a lot of shoplifting. The authorities have, therefore, given one of their social workers specific responsibility for the gypsy encampment.

All of the schools have made use of the local swimming pool; the combined school sports went extremely well and the Medical Officer of Health reports a high standard of health in the schools."

Test 4: Deduction

In this test, each exercise consists of two statements (premises) followed by several suggested conclusions. For the purposes of this test, consider the two statements in each exercise as true without exception. Read each conclusion in turn. If you think it necessarily follows from the statements given put a cross under "CONCLUSION FOLLOWS". If you think it is not a necessary conclusion put a cross under "CONCLUSION DOES NOT FOLLOW", even though you may believe it to be true from your general studies.

Try not to let your prejudices influence your judgement. Does each conclusion necessarily follow from the premise?

The word "some" in any of these statements means an indefinite part or quantity of a class of things. "Some" means at least a portion, and perhaps all of the class.

All children need to learn to behave in a socially acceptable way. Some children respond better to an authoritarian approach than to a permissive one.

31. Authoritarian methods are successful in making some children behave acceptably.

32. If a child behaves in a socially acceptable way, we can expect him to respond well to an authoritarian approach.

33. In order to help children to behave in a socially acceptable way, we should allow them all freedom to make mistakes.

There are some bad cases of poor numeracy in this year group of children. No child taught by the modern mathematics is seriously innumerate. Therefore:

34. There is no modern mathematics teaching in this year group.
35. Some children in the year group have been taught by the modern mathematics.

36. Some children in this year group have not been taught by the modern mathematics.

All comprehensive schools contain pupils of all abilities. Some comprehensive schools have good scholastic records. Therefore:

37. Some schools with good scholastic records have children of all abilities.

38. Since this is a comprehensive school, it will have a good scholastic record.

39. Every school which has a good scholastic record and which is also comprehensive will contain non-academic pupils.

A working class mother will tend to say "don't do it!", rather than give an explanation, when correcting her child. Some mothers give a lot of explanation when correcting their children.

40. Middle class mothers give a lot of explanation when correcting their children.

41. If a mother gives little explanation when correcting her child she is working class.

42. Some working class mothers give a lot of explanation when correcting their children.

Some classes are unstreamed. All unstreamed classes contain children of mixed ability.

43. No streamed classes contain children of mixed ability.

44. Children of mixed ability will be found in some classes.

45. Some classes do not contain children of mixed ability.

Test 5: Interpretation

For the purpose of this test, assume that everything in the statement is true. The problem is to judge whether or not the conclusion(s) logically follow(s) beyond a reasonable doubt from the information given in the statement.

If you think the proposed conclusion follows beyond a reasonable doubt (even though it may not follow absolutely and necessarily), then make a cross under the "CONCLUSION FOLLOWS" column of the Answer Sheet.

If you think the conclusion does not follow beyond a reasonable doubt from the facts given then put a cross under "CONCLUSION DOES NOT FOLLOW".

46. We now know that each member of a class of pupils will be at a different stage in intellectual development. All teaching, therefore, should be in small groups.
Sociologically it is known that children adopt the role expected of them. Children placed in, for example a 'C' stream will act as teachers would expect 'C' stream children to act. Children should not, therefore, be streamed.

According to Piaget's book, "The Moral Judgement of the Child", children of the same age will be at different levels of understanding with regard to moral rules. It is difficult for schools to know when to deal with sex education.

There is clear evidence that on some occasions corporal punishment is psychologically harmful to the child. Therefore:

parents ought not to use it frequently.

parents must not use it frequently.

Basil Bernstein wrote an article in "New Society" entitled "Open Schools, Open Society". In it he attempted to show that society today is more open compared with earlier this century, and how some schools are becoming correspondingly more open as well.

Prefect systems, an emphasis on achieving success, conformity, formal teaching methods, and a public system of rewards and punishment are all marks of the closed school, whereas an emphasis on the individual, discovery methods in teaching, interaction between pupils and teachers at a person-to-person level, are all marks of the open school.

All schools should become open.

Bernstein would probably class a school where there was no uniform as an open school.

Bernstein thinks that schools are the servant of society.

**Test 6: Evaluation of Arguments**

In making decisions about important questions, it is desirable to be able to distinguish between arguments that are strong and arguments that are weak. To be strong, an argument must be important and directly related to the question.

An argument is weak if it is not directly related to the question, even though it may be of great general importance; or if it is of minor importance; or if it is related to only trivial aspects of the question.

In this test each question is followed by several arguments. For the purpose of the test regard each argument as true. The problem is to decide whether it is a STRONG or a WEAK argument.

Judge each argument on its own merit; try not to let your personal attitude or College's attitude towards the question influence your evaluation.
Should sex education be given in primary schools?

54. Yes. Children increasingly ask questions as a result of watching T.V.

55. Yes. Experience has shown that children have valid questions they want to ask about sex at this age.

56. No. It is the parent’s responsibility.

57. The parent is responsible for the child at this age, not the teacher and sex education should only be given at the primary school when the parent agrees.

Should a teacher punish a working class child who has broken the middle class norms of the school?

58. Yes. One of the tasks of the school is to teach the child to accept the norms of society, which may differ from those of his own social class.

59. Yes. The school should have a high moral tone.

60. No. It has been shown sociologically and psychologically that the child is strongly influenced by the environment it grows up in and may be unable to accept the alternative norms of a different social class.

61. No. A school should reflect the norms of the society within which it operates.

Why is it important to have freedom in the classroom?

62. It is important that children learn to take decisions as early as possible in life and this can only happen if they are given the necessary freedom in order to make such decisions.

63. Research has shown that some children do not respond well to authoritarian approaches.

64. Freedom gives a happy air of activity in a classroom.

65. A child will eventually become an adult able to act autonomously. It is important that the school should provide opportunities for children to act autonomously as a preparation for this, and this necessitates some element of freedom in the classroom.

Should a perfectly good grammar school be turned into a comprehensive school?

66. Yes. There is good evidence to suggest that many pupils who fail to get into grammar schools as a result of the 11-plus examination, are well able to benefit by this type of education.

67. Yes. The grammar school creates an elite who eventually fill all the managerial jobs to the exclusion of those who went to secondary modern schools.

68. Yes. The traditional grammar school has produced a manager alienated from the workers on the shop floor. It is necessary, therefore, for social reasons, that the managers of tomorrow should receive at least part of their education alongside the workers of tomorrow.

/No ......

- 7 -
69. No. There is no clear body of research evidence to suggest that the claims of the comprehensive school are proven, whereas there is a long established body of opinion to suggest that grammar schools are efficient in achieving their goals.
APPENDIX W

Objective test version 2 - 1973 (see 6.8.2.1).
Problem Areas in Education (Pilot Study - Revised)

Your co-operation is asked for in this trial test and any comments you have to make about it will be very helpful.

Test 1: Statements of Fact, Value and Concept

A statement of fact can be clearly verified by reference to some external point of reference, such as a book.

A statement of value is not capable of verification in this way; it tends to reflect personal opinion or a particular point of view.

A statement of concept is completely different from the above two. It is not concerned with fact or value but rather with clarification of meaning, e.g. 'The integrated day can be said to be......'

In this test you will find a series of statements. For each statement you will find spaces on the answer sheet labelled F (Fact), V (Value), C (Concept). Place a cross in the appropriate circle after each statement.

---

Example

<table>
<thead>
<tr>
<th>Test 1 Statements of Fact, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>a) There are 120 immigrants in this school.</td>
</tr>
<tr>
<td>b) There are too many immigrants in this school.</td>
</tr>
<tr>
<td>c) The term 'immigrant' is taken to mean.</td>
</tr>
</tbody>
</table>

1. Sex education is solely the parent's responsibility.
2. A.S. Neil is an advocate of freedom.
3. Freedom needs to be distinguished from licence.
4. Mathematics is taught in this school to sets of children of homogeneous ability as measured by an achievement test in mathematics.
5. Unstreaming is often misunderstood; it does not necessarily preclude teaching by ability in an unstreamed class.
6. A.S. Neil is the greatest advocate of the freedom of the child.
7. In comprehensive schools all pupils have the same opportunities.
8. In recent years, caning has been used decreasingly in schools.
9. Corporal punishment is very harmful to children.
10. The word punishment can be seen to have two differing emphases. Sometimes we punish in order to deter people from future wrongdoing while at other times we may punish them in order to get our own back by way of retribution.
11. It may be necessary to distinguish between the face value of a moral action and the spirit in which it is carried out.

12. Hargreaves, in his research, suggests that there is a link between pupils' expectations of themselves; their teacher's expectations of them, and the fact that they are differentiated into streams.

Test 2: Judgement

A judgement is a conclusion that a person makes on the basis of certain observed or supposed facts. The judgement made may be true or false.

In this test you will find a series of conclusions. In the light of your studies in education, examine each of the conclusions and make a decision as to its degree of truth or falsity.

For each judgement you will find spaces on the Answer Sheet labelled T, PT, ID, PF, F. For each judgement make a cross on the Answer Sheet under the appropriate label as follows:

T - If you think that the judgement is definitely TRUE; that it properly follows beyond a reasonable doubt from the evidence you have studied.

PT - If, in the light of your studies, you think the judgement is PROBABLY TRUE; that is that there is better than an even chance that it is true.

ID - If you decide that there is INSUFFICIENT DATA in your studies to tell whether the judgement is likely to be true or false; if your studies provide no basis for judging one way or the other.

PF - If, in the light of your studies, you think the judgement is PROBABLY FALSE; that there is better than an even chance that it is false.

F - If you think the judgement is definitely FALSE; that it is wrong either because it misinterprets the evidence, or because it contradicts the evidence.

13. In the area of streaming/non-streaming, both sides have a large body of research evidence to support them.

14. Most Primary School teachers today are child-centred in their approach.

15. Psychological findings have had little effect on the current emphasis on freedom in education.

16. It is clear that the social sciences are about to make a breakthrough in our understanding of all areas of education.

17. Given that the education system is paid for by society, decisions in all of the problem areas, studied as part of this course, cannot be taken in an educational context alone, but should take note of the wishes of society.

18. The only important psychological evidence which is relevant to a study of rewards and punishment comes from studies in conditioning (such as those of Pavlov).

19. The open-ended approach to problem solving in education is based on a clear body of knowledge, showing that most people do not need the security of being told just what to do.
20. Supporters of comprehensive education have drawn heavily on the findings of the sociologist. These findings, however, are very one-sided since they are based on the work of left-wing sociologists.

21. Discovery based learning is more effective than formal learning.

22. Moral education is generally left in the hands of the Religious Studies teacher.

23. There is clear agreement as to what theoretical concepts, such as equality, freedom, morality, punishment, mean.

24. By the age of ten, many children have a clear understanding of the ideas of rightness and wrongness.

Test 3: Recognition of Assumptions

An assumption is something pre-supposed or taken for granted.

Below are a number of statements. Each statement is followed by a number of proposed assumptions. You are to decide for each assumption whether a person, in making the statement, is really making that assumption.

If you think the given assumption is taken for granted, make a cross under ASSUMPTION MADE on the answer sheet. If you think the assumption is NOT necessarily taken for granted in the statement, make a cross under ASSUMPTION NOT MADE.

In some cases more than one of the given assumptions is made, in other cases none of the given assumptions is made.

<table>
<thead>
<tr>
<th>Example</th>
<th>Test 3 Recognition of Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement: &quot;The Rector will take the class for Religious Studies&quot;</td>
<td>Made</td>
</tr>
<tr>
<td>Proposed Assumptions:</td>
<td></td>
</tr>
<tr>
<td>a) The class has weekly religious studies periods. (Although it is likely it does not necessarily follow from the statement)</td>
<td>0</td>
</tr>
<tr>
<td>b) The Rector is a Christian</td>
<td>X</td>
</tr>
</tbody>
</table>

Statement: "Pupils are placed in sets for mathematics teaching."

Proposed Assumption:

25. For subjects other than mathematics, pupils are taught in their own classes rather than in sets.

26. Mathematics can only be taught satisfactorily when pupils are placed in sets.

Statement: "The Counsellor is responsible for moral education in the school."

Proposed Assumptions:

27. The school is not just concerned with exam results.
28. Moral education appears as a subject on the time-table.

29. Many of the children in the school come from deprived homes, hence the appointment of a Counsellor.

STATEMENT: "The children take a keen interest in getting house points."

PROPOSED ASSUMPTIONS:

30. Competition is a good thing.

31. House points are given for social behaviour, achievements at work, and for games.

32. There is an active house system in the school.

STATEMENT: "In a neighbourhood comprehensive school, all of the children from the district go to the same school no matter what their ability."

PROPOSED ASSUMPTIONS:

33. The children in the school will all belong to the same social class.

34. There will be no I.Q. test at 11 plus.

35. The school should be an integral part of the community.

36. Read the following passage carefully and then write a list of the assumptions actually made. Write them out in the same form as the ones in questions 25 to 35 above.

"There are nine primary schools in the town feeding two comprehensive schools, one purpose-built, and the other an amalgamation of the old grammar school with a secondary modern school a mile away.

The purpose-built school has splendid equipment, large grounds and a swimming pool. All of the pupils wear uniform, and the examination results are very impressive. The other school has a high turn-over of staff, and the distance between the buildings creates problems.

Last year all of the primary schools in the area took in children from a permanent gypsy encampment which the local authority had set up in the oldest area of the town.

With no 11-plus, the primary schools are able to carry out some very imaginative project work and the parents, who are often in the schools, take a keen interest in it and give valuable assistance with it.

Unfortunately, the last year has seen a growth of delinquency in the primary schools with a lot of shoplifting. The authorities have, therefore, given one of their social workers specific responsibility for the gypsy encampment.

All of the schools have made use of the local swimming pool; the combined school sports went extremely well and the Medical Officer of Health reports a high standard of health in the schools."
Test 4: Deduction

In this test, each exercise consists of two statements (premises) followed by several suggested conclusions. For the purposes of this test, consider the two statements in each exercise as true without exception. Read each conclusion in turn. If you think it necessarily follows from the statements given put a cross under "CONCLUSION FOLLOWS". If you think it is not a necessary conclusion put a cross under "CONCLUSION DOES NOT FOLLOW"; even though you may believe it to be true from your general studies in education.

TRY NOT TO LET YOUR PREJUDICES INFLUENCE YOUR JUDGEMENT. Does each conclusion necessarily follow from the premise?

The word "some" in any of these statements means an indefinite part or quantity of a class of things. "Some" means at least a portion, and perhaps all of the class.

All children need to learn to behave in a socially acceptable way. Some children respond better to an authoritarian approach than to a permissive one.

37. Authoritarian methods are successful in making some children behave acceptably.

38. If a child behaves in a socially acceptable way, we can expect him to respond well to an authoritarian approach.

39. In order to help children to behave in a socially acceptable way, we should allow them all freedom to make mistakes.

Some children in this year group are mathematically very weak. It is claimed that no child taught by the modern mathematics will be seriously unnumerate. Therefore:

40. There is no modern mathematics teaching in this year group.

41. Some children in the year group have been taught by the modern mathematics.

42. Some children in this year group have not been taught by the modern mathematics.

All comprehensive schools contain pupils of all abilities. Some comprehensive schools have good scholastic records. Therefore:

43. Some schools with good scholastic records have children of all abilities.

44. This is a selective school and therefore must have a good scholastic record.

45. Every school which has a good scholastic record and which is also comprehensive will contain non-academic pupils.
A working class mother will tend to say "don't do it!", rather than give an explanation, when correcting her child. Some mothers give a lot of explanation when correcting their children.

46. Middle class mothers give a lot of explanation when correcting their children.

47. If a mother gives little explanation when correcting her child she is working class.

48. Some working class mothers give a lot of explanation when correcting their children.

Some classes are unstreamed. All unstreamed classes contain children of mixed ability.

49. No streamed classes contain children of low ability.

50. Children of the same ability will be found in some classes.

51. There are some remedial classes.

Test 5: Interpretation

For the purpose of this test, assume that everything in the statement is true. The problem is to judge whether or not the conclusion(s) follow(s) beyond a reasonable doubt from the information given in the statement.

If you think the proposed conclusion follows beyond a reasonable doubt (even though it may not follow absolutely and necessarily), then make a cross under the "CONCLUSION FOLLOWS" column of the Answer Sheet.

If you think the conclusion does not follow beyond a reasonable doubt from the facts given then put a cross under "CONCLUSION DOES NOT FOLLOW".

52. We now know that each member of a class of pupils will be at a different stage in intellectual development. All teaching, therefore, should be in small groups.

53. Sociologically it is known that children adopt the role expected of them. Children placed in, for example, a 'C' stream will tend to act as teachers would expect 'C' stream children to act. Children should not, therefore, be streamed.

54. According to Piaget's book, "The Moral Judgement of the Child", children of the same age will be at different levels of understanding with regard to moral rules. It is difficult for schools to know when to deal with sex education.

There is clear evidence that on some occasions corporal punishment is psychologically harmful to the child. Therefore:

55. parents ought not to use it frequently;

56. parents must not use it frequently.
Basil Bernstein wrote an article in "New Society" entitled "Open Schools, Open Society". In it he attempted to show that society today is more open compared with earlier this century, and how some schools are becoming correspondingly more open as well.

Prefect systems, an emphasis on achieving success, conformity, formal teaching methods, and a public system of rewards and punishment are all marks of the 'closed school', whereas an emphasis on the individual, discovery methods in teaching, interaction between pupils and teachers at a person-to-person level, are all marks of the 'open' school.

57. All schools should become open.
58. Bernstein would probably class a school where there was no uniform as an open school.
59. Bernstein sees the school system as one of society's institutions, changing as society changes.

Test 6: Evaluation of Arguments

In making decisions about important questions, it is desirable to be able to distinguish between arguments that are strong and arguments that are weak. To be strong, an argument must be important and directly related to the question.

An argument is weak if it is not directly related to the question, even though it may be of great general importance; or if it is of minor importance; or if it is related to only trivial aspects of the question.

In this test each question is followed by several arguments. For the purpose of the test regard each argument as true. The problem is to decide whether it is a STRONG or a WEAK argument.

Judge each argument on its own merit; try not to let your personal attitude or College's attitude towards the question influence your evaluation.

Should sex education be given in primary schools?
60. Yes. Children increasingly ask questions as a result of watching T.V.
61. Yes. Experience has shown that children have valid questions they want to ask about sex at this age.
62. Yes. There are too many unmarried teenage mothers today.
63. The parent is responsible for the child at this age, not the teacher, and sex education should only be given at the primary school when the parent agrees.

Should a teacher punish a working class child who has broken the middle class norms of the school?
64. Yes. One of the tasks of the school is to teach the child to accept the norms of society, which may differ from those of his own social class.
65. The social class argument is of secondary importance when the teacher's role is considered. It is vital that the pupils should see the teacher as important, treating everybody equally.
66. Yes. The child must learn to obey authority and, providing he has been given fair warning, punishment is justified.
67. No. Jacobin (1966) and Palmer (1968) in America, and Levi, Spillet and Kerr (1971) in this country have conclusively shown that this is wrong.

68. No. In the 1970s a headmaster is no longer justified in running a school based in a working class area on middle class lines.

**Why is it important to have freedom in the classroom?**

69. It has been shown many times that some children respond better in an atmosphere of controlled freedom.

70. Freedom gives a happy air of activity in a classroom.

71. A child will eventually become an adult able to act autonomously. It is important that the school should provide opportunities for children to act autonomously as a preparation for this, and this necessitates some element of freedom in the classroom.

72. Not least, because of the work which Piaget has done on concept formation.

**Should good grammar schools be turned into comprehensive schools?**

73. Yes. There is good evidence to suggest that many pupils who fail to get into grammar schools as a result of the 11-plus examination, are well able to benefit by this type of education.

74. Yes. The grammar school creates an elite who eventually fill all the managerial jobs to the exclusion of those who went to secondary modern schools.

75. Yes. The traditional grammar school has produced a manager alienated from the workers on the shop floor. It is necessary, therefore, for social reasons, that the managers of tomorrow should receive at least part of their education alongside the workers of tomorrow.

76. No. There is no clear body of research evidence to suggest that the claims of the comprehensive school are proven, whereas there is a long established body of opinion to suggest that grammar schools are efficient in achieving their goals.
### Test 1 - Statements of Fact, Value, Concept

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Objective test version 3 - 1974 and 1975 (see 6.8.2.1).
Test 1: Statements of Fact, Value and Concept

A STATEMENT OF FACT can be clearly verified by reference to some external point of reference, such as a book.

A STATEMENT OF VALUE is not capable of verification in this way; it tends to reflect personal opinion or a particular point of view.

A STATEMENT OF CONCEPT is completely different from the above two. It is not concerned with fact or value but rather with clarification of meaning, e.g. 'The Integrated Day can be said to be ......' Statements of concept then are concerned with making clear the way in which we use words.

In this test you will find a series of statements. For each statement you will find spaces on the Answer Sheet labelled F (Fact), V (Value), C (Concept). Place a cross in the appropriate circle after each statement. You may feel a statement could be placed in more than one category, in which case you should put it into the category to which it chiefly belongs.

<table>
<thead>
<tr>
<th>Example</th>
<th>Test 1 Statements of Fact, etc.</th>
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</thead>
<tbody>
<tr>
<td>a) There are 120 immigrants in this school.</td>
<td>F 0 0</td>
</tr>
<tr>
<td>b) There are too many immigrants in this school.</td>
<td>0 F 0</td>
</tr>
<tr>
<td>c) The term 'immigrant' is taken to mean.</td>
<td>0 0 C</td>
</tr>
</tbody>
</table>

1. Sex education is solely the parent's responsibility.
2. A.S. Neil has been strongly influenced by Freudian psychology.
3. Freedom is not licence.
4. Mathematics is taught in this school to sets of children of homogeneous ability as measured by an achievement test in mathematics.
5. Unstreaming is often misunderstood; it does not necessarily preclude teaching by ability in an unstreamed class.
6. A.S. Neil is the greatest advocate of the freedom of the child.
7. In comprehensive schools all pupils have the same opportunities.
8. We can confidently say that in recent years restrictions have been placed by many local authorities on the teacher's right to administer corporal punishment.

9. Corporal punishment is very harmful to children.

10. The word punishment can be seen to have two differing emphases. Sometimes we punish in order to deter people from future wrongdoing while at other times we may punish them in order to get our own back by way of retribution.

11. It may be necessary to distinguish between the face value of a moral action and the spirit in which it is carried out.

12. Hargreaves, in his research, suggests that there is a link between pupils' expectations of themselves; their teachers' expectations of them, and the fact that they are differentiated into streams.

Test 2: Judgement

A judgement is a conclusion that a person makes on the basis of certain observed or supposed facts. The judgement made may be true or false.

In this test you will find a series of conclusions. In the light of your studies in education and in particular in the light of your reading on this course, examine each of the conclusions and made a decision as to its DEGREE of truth or falsity.

For each judgement you will find spaces on the Answer Sheet labelled T, PT, ID, PF, F. For each judgement make a cross on the Answer Sheet under the appropriate label as follows:

T - If you think that the judgement is definitely TRUE; that it properly follows beyond a reasonable doubt from the evidence you have studied.

PT - If, in the light of your studies, you think the judgement is PROBABLY TRUE; that is that there is better than an even chance that it is true.

ID - If you decide that there is INSUFFICIENT DATA in your studies to tell whether the judgement is likely to be true of false; if your studies provide no basis for judging one way or the other.

PF - If, in the light of your studies, you think the judgement is PROBABLY FALSE; that there is better than an even chance that it is false.

F - If you think the judgement is definitely FALSE; that it is wrong either because it misinterprets, or because it contradicts the evidence you have studied.

13. A. Yates in "Grouping in Education" reviews a large body of research evidence and conclude that there is no clear balance of research findings to favour either streaming or non-streaming, some research findings supporting the one, other research findings supporting the other.
14. As a result of reading the Plowden Report "Children in Their Primary Schools", we are justified in concluding that a large number of Primary School teachers today are child-centred in their approach.

15. The work of Susan Isaacs and her followers has had minimal effect on teaching approaches in the Infant School.

16. It is clear that the social sciences are about to ask a breakthrough in our understanding of all areas of education.

17. Although it is difficult to prove it, it is quite certain that educational decisions in most of these problem areas are made as much on social grounds as on educational ones.

18. The only important psychological evidence which is relevant to a study of rewards and punishment comes from studies in conditioning (such as those of Pavlov).

19. It is more than likely that research findings will show that personality differences are not a significant factor in how pupils respond to open-ended compared with highly structured approaches to learning.

20. Research evidence about social class and educational opportunity was used in arguing for the growth of Comprehensive education in this country. The one-sided nature of this research must be recognised, concentrating as it did on social class and ignoring other factors some of which might have supported selective education after 11 years of age.

21. We conclude that all the research evidence shows that discovery based learning is far more effective than formal learning.

22. The research evidence shows that in most schools today Moral Education is left in the hands of the Religious Studies teacher.

23. There is complete agreement as to what theoretical concepts, such as equality, freedom, morality and punishment mean.

24. By the age of 9, most children, as well as understanding that a particular action is right or wrong, are also able to understand the ideas of rightness and wrongness in their more general abstract sense.

Test 3: Recognition of Assumptions

An assumption is something pre-supposed or taken for granted.

Below are a number of statements. Each statement is followed by a number of proposed assumptions. You are to decide for each assumption whether a person, in making the statement, is really making that assumption.

If you think the given assumption is taken for granted, make a cross under ASSUMPTION MADE on the answer sheet. If you think the assumption is NOT necessarily taken for granted in the statement, make a cross under ASSUMPTION NOT MADE.

In some cases more than one of the given assumption is made, in other cases none of the given assumptions is made.
<table>
<thead>
<tr>
<th>Example</th>
<th>Test 3 Recognition of Assumptions</th>
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</thead>
<tbody>
<tr>
<td>Statement: &quot;The Rector will take the class for Religious Studies&quot;</td>
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<tr>
<td>Proposed Assumptions:</td>
<td></td>
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<tr>
<td>a) The class has weekly religious studies periods. (Although it is likely it does not necessarily follow from the statement)</td>
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</tr>
<tr>
<td>b) The Rector is a Christian</td>
<td>X</td>
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**STATEMENT:** "Pupils are placed in sets for mathematics teaching."

**PROPOSED ASSUMPTION:**

25. For all subjects other than mathematics, pupils are taught in their own classes rather than in sets.

26. The only way to teach mathematics is to place pupils in sets.

**STATEMENT:** "The Counsellor is responsible for moral education in the school."

**PROPOSED ASSUMPTIONS:**

27. The school is not just concerned with exam results.

28. Special periods are set aside for moral education on the time-table.

29. Many of the children in the school come from deprived homes, hence the appointment of a Counsellor.

**STATEMENT:** "The children take a keen interest in getting house points."

**PROPOSED ASSUMPTIONS:**

30. Some teachers see value in competition.

31. House points are given for achievement at work.

32. The house system is successful.

**STATEMENT:** "In a neighbourhood comprehensive school, all of the children from the district go to the same school no matter what their ability."

**PROPOSED ASSUMPTIONS:**

33. The children in the school will all belong to the same social class.

34. There will be no tests of achievement or intelligence at the time of transfer to secondary school.

35. Much of the work in the school will be in mixed ability groupings.
36. Read the following passage carefully and then write out a list of the assumptions actually made. If you think, for example, that an assumption is being made in the first paragraph it is not sufficient just to repeat the words of the paragraph, you must WRITE OUT IN YOUR OWN WORDS WHAT THE ASSUMPTION IS. Use questions 25 to 35 above as a guide and limit yourself to using ONE SENTENCE ONLY to describe EACH assumption that is being made.

"There are nine primary schools in the town feeding two comprehensive schools, one purpose-built, and the other an amalgamation of the old grammar school with a secondary modern school a mile away.

The purpose-built school has splendid equipment, large grounds and a swimming pool. All of the pupils wear uniform, and the examination results are very impressive. The other school has a high turn-over of staff, and the distance between the buildings creates problems.

Last year all of the primary schools in the area took in children from a permanent gypsy encampment which the local authority had set up in the oldest area of the town.

With no 11-plus, the primary schools are able to carry out some very imaginative project work and the parents, who are often in the schools' take a keen interest in it and give valuable assistance with it.

Unfortunately, the last year has seen a growth of delinquency in the primary schools with a lot of shoplifting. The authorities have, therefore, given one of their social workers specific responsibility for the gypsy encampment.

All of the schools have made use of the local swimming pool; the combined school sports went extremely well and the Medical Officer of Health reports a high standard of health in the schools.'"
All children need to learn to behave in a socially acceptable way. Some children respond better to an authoritarian approach than to a permissive one.

37. Authoritarian methods are successful in making some children behave acceptably.

38. If a child behaves in a socially acceptable way, we can expect him to respond well to an authoritarian approach.

39. In order to help children to behave in a socially acceptable way, we should allow them all freedom to make mistakes.

Some children in this year group are mathematically very weak. It is claimed that no child taught by the modern mathematics will be seriously innumerate, therefore:

40. All children in this year group have been taught mathematics in a traditional way.

41. Some children in the year group have been taught by the modern mathematics.

42. Some children in this year group have not been taught by the modern mathematics.

All comprehensive schools contain pupils of all abilities. Some comprehensive schools have good scholastic records. Therefore:

43. Some schools with good scholastic records have children of all abilities.

44. Able children at some comprehensive schools will achieve just as well as they would have had they attended a selective school.

45. Every school which has a good scholastic record and which is also comprehensive will contain non-academic pupils.

A working class mother will tend to say "don't do it!", rather than give an explanation, when correcting her child. Some mothers give a lot of explanation when correcting their children.

46. Middle class mothers give a lot of explanation when correcting their children.

47. If a mother gives little explanation when correcting her child she is working class.

48. Some working class mothers give a lot of explanation when correcting their children.

Some classes are unstreamed. All unstreamed classes contain children of mixed ability.

49. No streamed classes contain children of average ability.

50. Able children will be found in some classes.

51. All pupils will spend some time in unstreamed classes while at school.
For the purpose of this test, assume that everything in the statement is true. The problem is to judge whether or not the conclusion(s) follow(s) beyond a reasonable doubt from the information given in the statement, even if you personally do not agree with the original statement.

If you think the proposed conclusion follows beyond a reasonable doubt (even though it may not follow absolutely and necessarily), then make a cross under the "CONCLUSION Follows" column of the Answer sheet. If you think the conclusion does not follow beyond a reasonable doubt from the facts given then put a cross under "ConClusion Does NOT Follow".

52. We now know that each member of a class of pupils will be at a different stage of intellectual development. All teaching, therefore, should be in small groups.

53. Sociologically, it is known that streaming tends to reinforce social class divisions in terms of educational opportunity. Setting children for subjects is therefore wrong.

54. According to Piaget's book "The Moral Judgement of the Child", children of the same age will be at different levels of understanding with regard to moral rules. Providing a head teacher sees the punishment as moral training rather than moral judgement, he is perfectly justified in treating ALL children caught stealing in EXACTLY THE SAME WAY.

There is clear evidence that on some occasions corporal punishment is psychologically harmful to the child. Therefore:

55. Parents ought not to use it frequently;

56. Parents must not use it frequently.

Basil Bernstein wrote an article in "New Society" entitled "Open Schools, Open Society". In it he attempted to show that society today is more open compared with earlier this century, and how some schools are becoming correspondingly more open as well.

One would expect to find in a "closed" school, prefect systems, an emphasis on achieving academic success, conformity to the norms of the school, formal class teaching, a highly developed system of mark sheets and detentions. In an 'open' school, on the other hand, one would expect to find an emphasis on the pupil as an individual, open ended teaching methods, a blocked time-table, as opposed to a single period time-table, integrated as opposed to a singly subject teaching. Therefore:

57. Most schools should become 'open'.

58. Bernstein would probably class a school where there was no uniform as an 'open' school.

59. Bernstein clearly disagrees with those who see Education as a conservative force in Society.
Test 6: Evaluation of Arguments

In making decisions about important questions, it is desirable to be able to distinguish between arguments that are strong and arguments that are weak. To be strong, an argument must be important and directly related to the question.

An argument is weak if it is not directly related to the question, even though it may be of great general importance; or if it is of minor importance; or if it is related to only trivial aspects of the question.

In this test, each question is followed by several arguments. For the purpose of the test regard each argument as true. The problem is to decide whether it is a STRONG or a WEAK argument.

Judge each argument on its own merit; try not to let your personal attitude or College's attitude towards the question influence your evaluation.

Should sex education be given in primary schools?

60. Yes. Children increasingly ask questions as a result of watching T.V.

61. Yes. Piaget has shown classification to be an important process at this age, and the facts of life need to be given.

62. Yes. There are too many unmarried teenage mothers today.

63. The parent is responsible for the child at this age, not the teacher, and sex education should only be given at the primary school when the parent agrees.

Should a teacher punish a working class child who has broken the middle class norms of the school?

64. Yes. One of the tasks of the school is to teach the child to accept the norms of society, which may differ from those of his own social class.

65. Yes. It is important that the Profession should be seen as impartial in its administration of justice.

66. No. Unless he has first of all examined the appropriateness of the middle class norms for this pupil.

67. Piaget (1966) in Switzerland, Bruner (1969) in America, and Kerr (1970) in this country, have conclusively shown that this is wrong.

68. No. The Plowden and Newsom Reports have shown that type of teacher to be a dying breed we could well do without in education.
Why is it important to have freedom in the classroom?

69. Because for too many years, children have been subjected to overzealous control by, at times, almost tyrannical teachers.

70. Freedom gives a happy air of activity in a classroom.

71. A child will eventually become an adult able to act autonomously. It is important that the school should provide opportunities for children to act autonomously as a preparation for this, and this necessitates some element of freedom in the classroom.

72. Because Piaget has shown that concepts are formed slowly over the years and that an atmosphere of freedom in the classroom is likely to encourage concept formation.

Should some good grammar schools be turned into comprehensive schools?


74. Yes. The grammar school creates an elite who eventually fill all the managerial jobs to the exclusion of those who went to secondary modern schools.

75. Yes. The traditional grammar school has produced a manager alienated from the workers on the shop floor. It is necessary, therefore, for social reasons, that the managers of tomorrow should receive at least part of their education alongside the workers of tomorrow.

76. No. There is no clear body of research evidence to suggest that the claims of the comprehensive school are proven, whereas there is a long established body of opinion to suggest that grammar schools are efficient in achieving their goals.
APPENDIX Y

Social background literature outline (see 3.5(1))
OUTLINE OF SOCIAL BACKGROUND LITERATURE

(The reference numbers in brackets refer to references in Chapter 3, while the reference letters refer to Diagrams 3.5, 3.7, 3.10)

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<thead>
<tr>
<th>Study Ref.</th>
<th>Authors</th>
<th>Description of Study and critical appraisal</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Oxtoby &amp; Smith (2) (1969)</td>
<td>An analysis of students entering Sussex and Essex Universities in 1966. The Essex results are based on an 87% return, but the Sussex results are only based on a 72.5% return of a random sample of 300 students, and should be treated with some caution.</td>
</tr>
<tr>
<td>B</td>
<td>Furneaux (1963) (3)</td>
<td>A cumulative survey based on relatively small samples of Arts, Science and medical students at Sheffield University from 1950 to 1953</td>
</tr>
<tr>
<td>C</td>
<td>Mercer &amp; Forsyth (4) (1975)</td>
<td>A detailed analysis of some Scottish graduates, looking at cohorts taken from the years 1860 to 1955. The authors do not, unfortunately, make clear their criteria for defining social class.</td>
</tr>
<tr>
<td>D</td>
<td>Marris (1964) (5)</td>
<td>Summarises some results of 3 hour structured interviews with samples of students at Cambridge, Leeds and Southampton Universities and at the Northampton College of Advanced Technology which took place between 1961 and 1963. They reject the Registrar General's classification of occupations because it does not distinguish meaningfully between middle-class occupations.</td>
</tr>
<tr>
<td>E</td>
<td>Klingender (1954) (6)</td>
<td>A thorough analysis of the social class, and living/study conditions of 72% of the students at University College, Hull, in 1951</td>
</tr>
<tr>
<td>F</td>
<td>Abbott (1965) (7)</td>
<td>A somewhat inadequately reported investigation into students at Edinburgh, Durham and Newcastle Universities. Based on 1303 respondents out of a total of 1975 questionnaires. Fuller details of the nature of the sample or the numbers for each university are not given.</td>
</tr>
<tr>
<td></td>
<td>Author(s) and Year</td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>G</td>
<td>McIntosh (1972) (8)</td>
<td>In this paper prepared for the Open University's Advisory Committee on Adult and Higher Education, McIntosh analyses the social class of some of the 1971 students.</td>
</tr>
<tr>
<td>H</td>
<td>Brockington (1963) (9)</td>
<td>Traces a cohort of students entering Manchester University in 1957 for their 3 years.</td>
</tr>
<tr>
<td>I</td>
<td>Child (1969) (10)</td>
<td>Looks at 92% of the 1st year entry in 1966 to the University of Bradford.</td>
</tr>
<tr>
<td>J</td>
<td>Entwistle (1971) (11)</td>
<td>An interim report of the Rowntree Research Unit on a sample of students from three universities, four colleges of education and five polytechnics. This is part of a large scale study of 2,800 students at 23 institutions.</td>
</tr>
<tr>
<td>K</td>
<td>Sanford, Couper &amp; Griffin (1965) (12)</td>
<td>An analysis of a sample of 414 students at the Bristol College of Science and Technology in 1963.</td>
</tr>
</tbody>
</table>
APPENDIX - Z

Entry Qualification Sources (See. 3.8(1))
Entry Qualification sources

The following sources were used:

(i) The Annual Reports of the Central Register and Clearing House (for College of Education data);

(ii) Table G1 of the Statistical Supplement of the Annual Reports of the University Central Council on Admissions (for University data);

(iii) The Annual "Statistics of Education" Vol. 4 - 'Teachers' Table 2 (again for College of Education data);

(iv) The Annual "Statistics of Education" Vol. 3 - 'Further Education' Table 59. (For students studying for the first degrees of the Council for National Academic Awards;

(v) The Annual "Statistics of Education" Vol. 2 - 'School Leavers' Table 13;


At first sight it would appear that (i) and (iii) cover the same ground. The former suffers from the disadvantage that it is never fully complete because it omits data from one or two colleges having student entry in the January following the September on which the main data is based. It is, however, available in the April following the September intake, whereas the complete "Statistics of Education" table often comes out at least a year later. In practice, both tables produced virtually identical data on analysis. (iii) was used for all years except for 1974, when (i) was used.

The U.C.C.A. table suffers from all the weakness of any 10% sample as does Table 13 of "Statistics of Education" Vol. 2. This latter table is of interest because it offers, at first sight, direct comparisons between student qualifications at colleges, polytechnics and universities. It suffers, however, from the disadvantage of only listing the qualifications of school leavers, and this seriously distorts the data for a significant number of slightly older students, recruited into Higher Education.

The data for Bishop Otter College was obtained from two sources, the annual return made each October to the Central Register and Clearing House, and the individual D.E.E. record cards (30TT) of each student which contain details of 'A' level grades.
Outline of the literature of student study habits (see 3.12(1), 3.12.3(1))
### STUDENT STUDY HABITS - AN OUTLINE OF THE LITERATURE

(Reference will be found at the end of Chapter 3)

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Ref.</th>
<th>Description and Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.F. Brown &amp; W.H. Holtzman</td>
<td>(31)</td>
<td>Reviews earlier work in the 1930s and 1940s concluding that, in concentrating on the mechanics of study, it failed to be of predictive value. They describe the development of an attitudinal test which they claim may have predictive value.</td>
</tr>
<tr>
<td>M. Farlett</td>
<td>(32)</td>
<td>Devised a questionnaire on study habits and techniques of learning.</td>
</tr>
<tr>
<td>N.J. Entwistle</td>
<td>(33)</td>
<td>Working with a small sample (N=72) found that study methods and habits had some significance in identifying potential failure.</td>
</tr>
</tbody>
</table>

#### (1) FACTUAL STUDIES

<table>
<thead>
<tr>
<th>Author</th>
<th>Ref.</th>
<th>Description and Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.D. Klingender</td>
<td>(34)</td>
<td>A very thorough investigation of living and study conditions at Hull University College.</td>
</tr>
<tr>
<td>D. Thoday</td>
<td>(35)</td>
<td>Two 1951 analyses of Birmingham University students' work habits.</td>
</tr>
<tr>
<td>D. Rich</td>
<td>(36)</td>
<td>A 1956 study of study habits at Aberdeen University.</td>
</tr>
<tr>
<td>A.H. Macklin</td>
<td>(37)</td>
<td>Used interviews, direct observation, diaries or logs and questionnaires in 1969, with students at the University of Bradford.</td>
</tr>
<tr>
<td>B. Cooper and J.H. Foy</td>
<td>(38)</td>
<td>Working with College students in Liverpool, he apportioned the working week into time-tabled work (19 hours), independent study (13 hours), personal commitments (21 hours), socialising (14 hours), sport (2-4 hours). Favours the diary or interview as opposed to questionnaires as the best way of collecting the information.</td>
</tr>
<tr>
<td>I. Ward</td>
<td>(39)</td>
<td>Working with College students in Liverpool, he apportioned the working week into time-tabled work (19 hours), independent study (13 hours), personal commitments (21 hours), socialising (14 hours), sport (2-4 hours). Favours the diary or interview as opposed to questionnaires as the best way of collecting the information.</td>
</tr>
<tr>
<td>J.C. Clift &amp; I.D. Thomas</td>
<td>(45)</td>
<td>Australian study which indicated a five day working week for students (N=626, a 63% response rate).</td>
</tr>
<tr>
<td>D. Child</td>
<td>(46)</td>
<td>Found that 78% of a small sample of Bradford School College and University students used evenings for independent study, working a five day week (N=181). He noted the probable influence of peer group norms on study habits.</td>
</tr>
</tbody>
</table>
**ATTITUINAL STUDIES AND PREDICTION**

<table>
<thead>
<tr>
<th>Name</th>
<th>Reference</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>W.F. Brown &amp;</td>
<td>(47)</td>
<td>First version of their critical thinking developed in 1953 (see also ref. 31).</td>
</tr>
<tr>
<td>W.H. Holtzman</td>
<td>(48)</td>
<td></td>
</tr>
<tr>
<td>B. Cooper &amp;</td>
<td>(38)</td>
<td>Finding the Brown and Holtzman Inventory to be culture bound, they developed their own version, based on the original, but geared to higher education.</td>
</tr>
<tr>
<td>J.M. Foy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N.J. Entwistle</td>
<td>(49)</td>
<td>Made use of a study habits questionnaire, firstly at Aberdeen and secondly at Lancaster universities.</td>
</tr>
<tr>
<td>J.D. Wilson</td>
<td>(11)</td>
<td></td>
</tr>
<tr>
<td>N.J. Entwistle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>J.S. Ahmamn et al.</td>
<td>(50)</td>
<td>Found some evidence (N=342) that the Brown and Holtzman Inventory discriminated between students but failed to predict academic success.</td>
</tr>
<tr>
<td>C. Wilson</td>
<td>(51)</td>
<td>Investigated the ability of the Wrenn 'Study Habits Inventory' to discriminate.</td>
</tr>
<tr>
<td>W.J. Humber</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**UNDERLYING FACTORS**

<table>
<thead>
<tr>
<th>Name</th>
<th>Reference</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Malleson et al.</td>
<td>(52)</td>
<td>Describes two factor analyses of the results of their own version of the Brown and Holtzman Inventory.</td>
</tr>
<tr>
<td>N.J. Entwistle</td>
<td>(53)</td>
<td>Describes a factor analysis of his inventory (see Ref.49 above). Although not strictly comparable, both this reference &amp; (52) have some common ground in terms of identifying anxiety and degree of freedom as being significant underlying factors.</td>
</tr>
<tr>
<td>H.J. Eysenck</td>
<td>(54)</td>
<td>Suggested that introversion was probably a significant factor.</td>
</tr>
</tbody>
</table>

**THE MECHANICS OF STUDY**

<table>
<thead>
<tr>
<th>Name</th>
<th>Reference</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.G. Maclaine</td>
<td>(55)</td>
<td>Describes an Australian programme for providing training in study skills.</td>
</tr>
<tr>
<td>M. Jahoda &amp;</td>
<td>(56)</td>
<td>Studies of student note-taking strategies with written material.</td>
</tr>
<tr>
<td>L.F. Thomas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Marton</td>
<td>(57)</td>
<td></td>
</tr>
<tr>
<td>M.J.A. Howe</td>
<td>(58)</td>
<td>A study of student note-taking strategies during a lecture (see also 4.3.1.3(4)).</td>
</tr>
<tr>
<td>C.O. Heidt</td>
<td>(59)</td>
<td>Describes a programme of ten video-taped programmes on study skills, which limited evaluation showed were well received by the less able students.</td>
</tr>
<tr>
<td>D.R. Entwistle</td>
<td>(60)</td>
<td>Reviewing 22 studies, concluded that study and skill courses usually produced improvement, particularly when students were initially well motivated.</td>
</tr>
</tbody>
</table>
APPENDIX - BB

Factor analysis of 1971-1974 year group's response to a study habits questionnaire
(See 3.12.3(1))
## Factor Matrix - Study Habits

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>FACTOR</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>Communality</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Reading Meaningless</td>
<td>60</td>
<td>54</td>
<td>-26</td>
<td>-31</td>
<td>.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Work function in</td>
<td>-39</td>
<td>-34</td>
<td>-31</td>
<td>-26</td>
<td>.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Visitors Prevent Study</td>
<td>-40</td>
<td>-32</td>
<td>-31</td>
<td>-28</td>
<td>.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Can Study Undisturbed</td>
<td>39</td>
<td>32</td>
<td>31</td>
<td>28</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Read Widely on Course</td>
<td>57</td>
<td>52</td>
<td>51</td>
<td>48</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Generally Read Widely</td>
<td>56</td>
<td>51</td>
<td>48</td>
<td>45</td>
<td>.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Concentration Difficulty</td>
<td>-43</td>
<td>-34</td>
<td>-31</td>
<td>-28</td>
<td>.28</td>
<td></td>
<td></td>
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<tr>
<td>H</td>
<td>Personal Problems Prevent Study</td>
<td>-39</td>
<td>-34</td>
<td>-31</td>
<td>-28</td>
<td>.28</td>
<td></td>
<td></td>
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<tr>
<td>J</td>
<td>Tiredness Prevents Study</td>
<td>-57</td>
<td>-52</td>
<td>-51</td>
<td>-48</td>
<td>.48</td>
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<tr>
<td>K</td>
<td>Daydream While Studying</td>
<td>-56</td>
<td>-51</td>
<td>-48</td>
<td>-45</td>
<td>.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>A Questioner in Lectures</td>
<td>37</td>
<td>32</td>
<td>31</td>
<td>28</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>Weak Orally</td>
<td>-44</td>
<td>-34</td>
<td>-31</td>
<td>-28</td>
<td>.28</td>
<td></td>
<td></td>
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<tr>
<td>N</td>
<td>Weak Written Work</td>
<td>-55</td>
<td>-52</td>
<td>-51</td>
<td>-48</td>
<td>.48</td>
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<tr>
<td>O</td>
<td>Ask Staff for Help</td>
<td>51</td>
<td>52</td>
<td>51</td>
<td>48</td>
<td>45</td>
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<td>P</td>
<td>Follow up References</td>
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<td>32</td>
<td>31</td>
<td>28</td>
<td>22</td>
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<tr>
<td>Q</td>
<td>Amplify Lecture Notes</td>
<td>56</td>
<td>52</td>
<td>51</td>
<td>48</td>
<td>.48</td>
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<td>R</td>
<td>Weak Lecture Concentrate</td>
<td>-43</td>
<td>-34</td>
<td>-31</td>
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<td>.28</td>
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<td>S</td>
<td>Weak Seminar Concentrate</td>
<td>-56</td>
<td>-52</td>
<td>-51</td>
<td>-48</td>
<td>.48</td>
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<td>T</td>
<td>Revise All the Year</td>
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<td>52</td>
<td>51</td>
<td>48</td>
<td>45</td>
<td></td>
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<tr>
<td>U</td>
<td>Slow in Exams</td>
<td>-44</td>
<td>-34</td>
<td>-31</td>
<td>-28</td>
<td>.28</td>
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<td>V</td>
<td>Confident in Exams</td>
<td>40</td>
<td>34</td>
<td>32</td>
<td>29</td>
<td>24</td>
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<td>W</td>
<td>Exam Writing Difficult</td>
<td>67</td>
<td>62</td>
<td>59</td>
<td>56</td>
<td>.56</td>
<td></td>
<td></td>
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<tr>
<td>Y</td>
<td>Exam Question 'spot'</td>
<td>43</td>
<td>34</td>
<td>32</td>
<td>29</td>
<td>24</td>
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<td>Z</td>
<td>Prefer Directed Study</td>
<td>42</td>
<td>34</td>
<td>32</td>
<td>29</td>
<td>24</td>
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<td></td>
</tr>
<tr>
<td>AA</td>
<td>Have to Understand Rather Than Learn</td>
<td>48</td>
<td>44</td>
<td>40</td>
<td>37</td>
<td>.37</td>
<td></td>
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<tr>
<td>BB</td>
<td>Education Study Boring</td>
<td>-43</td>
<td>-32</td>
<td>-30</td>
<td>-27</td>
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<tr>
<td>CC</td>
<td>Prefer a Study Routine</td>
<td>-43</td>
<td>-32</td>
<td>-30</td>
<td>-27</td>
<td>.27</td>
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<tr>
<td>DD</td>
<td>Priority of Study over Social</td>
<td>36</td>
<td>32</td>
<td>30</td>
<td>27</td>
<td>24</td>
<td></td>
<td></td>
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<tr>
<td>EE</td>
<td>Course Sessions Stimulating</td>
<td>48</td>
<td>44</td>
<td>40</td>
<td>37</td>
<td>.37</td>
<td></td>
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<tr>
<td>FF</td>
<td>Education Lectures</td>
<td>74</td>
<td>70</td>
<td>67</td>
<td>64</td>
<td>.64</td>
<td></td>
<td></td>
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<tr>
<td>GG</td>
<td>Study Priority = Personal Achievement</td>
<td>48</td>
<td>44</td>
<td>40</td>
<td>37</td>
<td>.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HH</td>
<td>Study Priority = Professional Relevance</td>
<td>28</td>
<td>24</td>
<td>21</td>
<td>18</td>
<td>15</td>
<td></td>
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<tr>
<td>JJ</td>
<td>= Favourite Subject</td>
<td>-31</td>
<td>-30</td>
<td>-27</td>
<td>-24</td>
<td>.24</td>
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<tr>
<td>KK</td>
<td>Have Difficulty Mathematics</td>
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<td>-30</td>
<td>-27</td>
<td>-24</td>
<td>.24</td>
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<tr>
<td>LL</td>
<td>Systemic Note Taker</td>
<td>30</td>
<td>46</td>
<td>42</td>
<td>38</td>
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<tr>
<td>NN</td>
<td>Note Taking Successful</td>
<td>62</td>
<td>58</td>
<td>54</td>
<td>50</td>
<td>46</td>
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<tr>
<td>OO</td>
<td>Have Study Routine</td>
<td>46</td>
<td>42</td>
<td>38</td>
<td>34</td>
<td>30</td>
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<tr>
<td>PP</td>
<td>Exam Revising at Last Minute</td>
<td>-32</td>
<td>-30</td>
<td>-27</td>
<td>-24</td>
<td>.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>QQ</td>
<td>File Notes Systematically</td>
<td>62</td>
<td>58</td>
<td>54</td>
<td>50</td>
<td>46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Eigenvalue
- 6.52
- 3.52
- 2.14
- 1.41
- 1.22
- 1.03

### Percentage Variance
- 40.4%
- 22.5%
- 13.7%
- 9.0%
- 7.8%
- 6.6%

### Total Variance
100%
APPENDIX - CC

Course booklet used in the 1974 simulation exercise. This was a modified version of the booklet used in 1972 and 1973 (see 5.3.1(8ff), 5.4.2(5)).
THE AMBRIDGE SCHOOL
A SIMULATION EXERCISE
Simulations and educational games are increasingly being used in education.

Simulation is a delicate exercise involving several factors and dilemmas as the following extract from 'Educational aspects of simulation', illustrates.

'The task of constructing a model for the study of international relations is a complex one. If a student is to benefit from such a simulation, it should show him, in as clear a way as possible, those interacting processes that are essential features of the system that is being studied. The designer of the model must then make certain value judgments. He must decide what are the essential processes and what processes are secondary. In other words he must obviously decide what has to be left out. His aim, at this stage, is to reduce the complexity of a real life situation, to simplify it in order that its essence may be studied beneficially. His dilemma is that if he puts too much of the actual situation in he may so complicate the simulation as to make it a poor vehicle for instruction. On the other hand, if he leaves out too much he may produce a model that does not accurately represent the system he wishes to present. He must also be aware of the danger of personal interest and the tendency towards bias and distortion... When devising a simulation, the first thing to attempt to make absolutely clear is the educational objective of the exercise. It is also important that rudimentary cost efficiency considerations are undertaken at this stage. This merely consists of asking can this educational objective be better achieved by some other method? The active elements in simulation that are present in other elements in less abundance are motivation, involvement and flexibility. If these are considered to be of paramount importance then it is probable that simulation will be of use. If the learning of fact is the most important educational aim, there is no assurance from research that it can be done more efficiently through simulation than through any of the more conventional methods of factual presentation. What it might do, of course, is to help the tutor towards an orderly grouping and presentation of these facts, but the effort may be greater than the reward.

The purpose of this exercise is to give you an introduction to the technique.

To gain the most from it you must:-

(1) Read the Course Papers very carefully.
(2) Be prepared to enter into the spirit of the exercise.
(3) Be prepared to latch on to the built in dynamics of the Course papers and show initiative in developing them.

It is anybody's guess what the decision will be on at County Hall.

It is hoped that you will initiate Parish Meetings, protest groups; concerted village action; extraordinary meetings of particular committees.

One thing is clear and that is that the decision at County Hall will be strongly influenced by what has happened in the proceeding weeks.

There will be no set lecture on the administration of education but careful analysis of the course papers and the simulation exercise itself will reveal a lot about it.

---

By the end of this course you should

1. Have had an experience of a simulation exercise.
2. Have had some experience of playing out one or more roles.
3. Know the meaning of economic concepts such as:
   - (a) Cost Effectiveness
   - (b) Rate of return on money invested
   - (c) Labour intensive manpower
   - (d) Goods (Private and Public)
4. Have applied some of these concepts to the problems of closing small schools and comprehensive reorganisation.
5. Know something of the structure of local government.
6. Know something of the way decisions are made.
7. Have had some experience in making such decisions.
8. Have experienced something of committee procedure.
9. Have gained some insight into the role pressure groups can play in decision making.
10. Have gained some insight into the effect of vested interests such as the Church or political groups on decision making.
11. Have set up and used the 3.S. unit for self-instructional purposes. This is located at the back of the School Practice Library.

---

Diagrams

The purpose of the diagrams which follow is to help you see how your membership of particular committees will enable you to influence the educational decisions which are to be made.
There is no direct link between the Committees on this page and the County Council but individual County Councillors will also often be members of these Committees as well. In addition, one or two members of some of these committees will be nominated to County Council committees to give limited direct representation.

COMMUNICATIONS POSSIBLE WITH COUNTY HALL PERMANENT OFFICERS AND COUNTY COUNCIL BY MEANS OF LETTERS AND REPORTS

- = Direct link between committees
- - - - - = No direct link but shows lines of
Main Committees of County Council. They send reports and recommendations to it for approval.

Most committees of the County Council have sub-committees to carry out detailed work. Only the sub-committee structure of the Education Committee is shown. For simplicity in the exercise only the committees outlined with double lines will operate.

Most of the interaction between the professionals and the elected councillors occurs in the sub-committees.
The Chief Officer and/or his deputy will sit in on the meetings of the Education Committee in an advisory capacity.

The Assistant Education Officers are concerned with developing and implementing policies. They feed information to the subcommittees and carry out the decisions of the elected members. Senior Administrative Assistants are responsible for the paperwork and organisation.

As well as the three advisors shown there are subject advisors for Science, P.E., F.E., Art/Craft, Humanities. They are responsible for close links with schools.
The Way Educational Decisions are Made

The diagram represents a general decision making movement through the system finally to rest with the County Council.

The purpose of this exercise is to give you some insight into the process, and a close examination of the dated documentary material will help you to see this.

Basically each committee below the County Council modifies the proposals and, by the time it reaches the County Council itself, the detail has been dealt with and the County Council concerns itself with points of overall principle. Put in another way, the detail is argued at the level of the Parish Council, the Officers meeting, the Schools Sub-Committee etc., the principle itself only is argued at the Education Committee Meeting.

COMMITTEES

County Council

1. All members of the County Council have been elected.
2. Paid employees of the County Council are NOT eligible for election to the Council or its committees.
3. Members who have vested interests in particular topics under discussion should declare their interest and not take part in the debate or voting.

The Education Committee

This is a committee of the County Council and is composed of:

a) 21 elected members of the County Council
b) 3 representatives nominated by the Teachers Associations
c) 3 representatives nominated by the Denominations
d) 3 delegates from the Ullenhall Urban District Council as an Excepted Education District.
e) 3 Members co-opted by the Education Committee.

Owing to the large amount of work, the Education Committee works through a series of sub-committees who report back to it. The Education Committee sends through reports and recommendations to the County Council.

The following are sub-committees of the Education Committee and report back to it. At the full meeting of the Education Committee, the reports of each sub-committee are considered in turn and they contain Recommendations to the Education Committee for action. Brief comment is allowed on each recommendation before it is passed.
The Schools Sub-Committee

Particularly concerned with School policy, staffing and curriculum. The full time officers (i.e. Chief Education Officer & Staff) will be present at its meeting in an advisory capacity.

The Executive Sub-Committee

Particularly concerned with Sites and Buildings, and in carrying out the policy decisions given to it by the General Purposes Sub-Committee. Again the full time officers would be present.

The General Purpose Sub-Committee

Concerned with overall finance and policy, for education in the County, reconciling the often conflicting demands of schools, youth service, further education, special services and library.

Permanent Officers of the Education Committee

The Diagram shows officers involved in this exercise. The Advisors are responsible for close contact with the schools and develop educational ideas. The Administrative officers are concerned with implementing the policy of the Education Committee.

Committee Procedure

A simulation is a simplified version of what actually happens and there are inevitably conventions which help it to happen.

At the start of all committee, council or other group meetings:

(1) The Chairman should take the Chair. If he is not present the vice Chairman should take over. Failing this the Clerk (Secretary) should invite the meeting to nominate a Chairman (The Clerk is not eligible to be appointed).

(2) To be quorate, a meeting should have not less than three or one third of the whole number possible, whichever is the greater.

(3) Additional meetings may be convened by any two members. The Chairman is responsible for calling such a meeting 24 hours clear notice of such a meeting should be given.

(4) Every question shall be determined by a majority of the votes of those present, and where this is equal, the Chairman shall have a second or casting vote.

(5) At the start of the meeting, the Chairman shall ask each member present to give a brief role definition of himself (based on, but developed from that given in the electoral list)

(6) The Secretary should display an Agenda on the notice board 24 hours before the meeting. For Full details of procedure see the Booklet 'Standing Orders'

Courses of Action

1) The diagram earlier on in this booklet indicates the lines of communication which are open to committees. Communications should be sent to the Secretary or Chairman of the appropriate committee.

2) Sub-Committees usually make 'recommendations for action' which are considered by the main committees.
3) You should consider the following:-

(a) Organising Petitions
(b) Writing Reports for submission to appropriate bodies
(c) Letters of Protest
(d) Briefing individuals on your own committee, who sit on other committees, to represent your views on these committees.
(e) Forming pressure groups or action groups
(f) Writing letters to the paper or local radio station
(g) Organising protest meetings
(h) Lobbying individual members of other committees, who are not members of your own committee.

Public Meetings

Any member of the public may attend the following meetings AS AN OBSERVER: (But see booklet 'Standing Orders'.)

The County Council
The County Education Committee
The Two Rural District Councils

The Parish Councils.

Meetings of the following bodies are PRIVATE in real life, but, for the purposes of this exercise, you may attend them AS an observer PROVIDING A MAJORITY OF THE MEMBERS OF THE COMMITTEE AGREE:

The Various sub-committees of the County Education Committee.
The Diocesan Education Committee
The Teachers Association
School Management/Governors meetings.

All other meetings are open to members normally eligible to attend.

Politics

Conservatives - Favour a general rationalisation of education in the County, and are sympathetic to the proposals to close down the primary schools on economic grounds. The Conservatives support the County Council's comprehensive plan for Borchester and Hoylodale largely on economic grounds as the cheapest solution. In doing so the County Conservative party finds itself in deep opposition to some of the local Conservative associations who have a vested interest in keeping open the local grammar school at Hoyledale.

Labour - Are against the proposals to close the primary schools. They are strong advocates of Comprehensive education although for very different reasons from the Conservatives.

Independents - The largest group on the County Council. Each Independent is free to make up his own mind.

Students should read the Course Papers very carefully. In some cases clear indications are given as to the political orientation of particular groups and they should act accordingly if they belong to such groups.

In other cases, students are free to adopt the political group listed above of their choice.
AUBRIDGE (Singleton - see page 12)

As the tape recording has shown, the village has already organised itself to meet the threat to close the village school.

Unfortunately there is a long history of rivalry with the neighbouring village, Penny Hassett and therefore concerted action is difficult between the two villages to prevent the closure.

The village is somewhat split over the fact that Borchester will not be included in the comprehensive proposals. A small group who are active members of the labour party are trying to get the decision reversed.

BORCHESTER (Selsey/Chichester - see page 12)

A large village which is likely soon to expand its boundaries to take in the neighbouring village of Inkberrow.

It has one large primary school, Mayflower, built in the 1960's and a smaller one, High Street. This latter school is situated just over the road from the Secondary Modern School. Built in the 1950's as a 300 pupil primary school it contracted in the late 1960's to a very small 3 teacher school housed in only part of the original school and the secondary modern school took over the rest of its premises. This caused the Mayflower school to grow too big. Now that the Secondary Modern School has had additional buildings on its own site, the High Street School has just moved back into its own buildings and is growing in size.

Borchester Secondary Modern has never achieved great academic heights because the more able pupils have always gone to the Hoyledale grammar schools. It is firmly established as a local community school, however, and some able village children prefer to go with their friends to this school rather than travel to the more impersonal Hoyledale Schools.

Borchester lost its village identity some time ago and is not sympathetic to the arguments to keep small village schools. It strongly supports the move to enlarge the Inkberrow School.

Politically this puts the labour party sympathises in conflict with the official county policy supporting small schools.

HOLLERTON (Crawley - see page 12)

The County Town of Worcestershire, situated 40 miles north of Borchester and 30 miles north of Hoyledale.

There is little love lost between this centre of administration and the village 40 miles away.

HOYLEDALE (Midhurst - see page 12) and RUSHOCK (Easebourne)

Hoyledale is a small market town which, in the 18th century was a major town in the area, but both population and power have long since been drawn off to Hollerton, about 40 miles away.
There are 3 secondary schools in the town, the Boys Grammar School situated in the High Street, the Hadow Road School situated just by it, and the Girls High School situated in the village of Rushock, just outside the town.

There is one church primary school in the town itself and another large primary school in Rushock. The secondary schools draw most pupils from villages to the north and west of Hoyledale.

Socially, the town is mixed with many well to do communities and the council estates.

INKBERROW (Lavant - see page 12)

Almost a part of Borchester, and likely soon to merge. A long strung out village, it has three main social groups, the council estate, the modern 'box' estate of young married couples, and the old village of wealthy retired people and farmers.

Power rests in the old village, but the two estates are increasingly making their voices known.

The primary school is situated in two parts. The old part, containing the juniors on a small piece of land next door to the church. Because it was not possible to expand on this site, the new infant part was built near the council estate, half a mile away. The enlarged school would be built on this site.

A busy main road separates the school from the children from the two estates. There has already been one serious accident, and there is considerable anxiety about the proposed expansion in terms of road safety.

The village is a stronghold of labour, although the older part is much more inclined to be independent. Very few children go from Inkberrow to the Hoyledale grammar school.

NETHERDAUBOURNE (Compton and Marden - See page 12)

Set some way back from the main roads, this is a sleeping village, steeped in a strong conservative tradition. Many of the wealthy inhabitants have moved from Borchester and Hallorton and the social life of the village centres on the Church and the Conservative Association. The village school has an excellent 11 plus record. In this particular village, the Conservatives find themselves at variance with the County Conservatives who want to close the primary schools. This village would oppose any move to make Borchester comprehensive thus preventing the large number of children who at present go to the Hoyledale schools from doing so. Many of the villages are also involved in the continuing fight to reverse the comprehensive decision at Hoyledale. If this goes ahead, they would still prefer their children to go to a comprehensive school at Hoyledale formed from two good grammar schools, rather than to a school in Borchester formed from a secondary modern school.

The school was rebuilt only a few years ago and if closed down, would be converted by the County Council into a R.O.S.L.A. residential centre for field study for which there is a growing demand.

At present a school bus, owned by the Authority, brings in pupils from surrounding hamlets, this bus would be available to take them to an enlarged school at Inkberrow.
PENNY HASSETT (West Dean)

Great rivalry with Ambridge which makes co-operation between the two difficult. The difficulty is that whereas Ambridge can make out a case for keeping its school open because of a future increase in population, Penny Hassett has not got similar arguments.

The Headmaster is due to retire. The School is not very lively and, until the present, the school P.T.A. has not been very lively. There is some evidence, however, that the threat to close the schools may make the P.T.A. more lively. Very few children go on to grammar school.

DECISION MAKING

In order to help you make realistic decisions, some additional data has been provided and is available on the Parish Notice Boards in the A.V.C. Study Cards and on Temporary Reference.

GEOGRAPHY

The villages are fictitious in order to give freedom to the plot, but the Chichester O.S. map can be used to locate the villages.

Ambridge = Singleton
*Ambridge = Chichester*
Borchester = Chichester
Bebroughton = Elsted
Catahill = Harting
Chaddesley = Fernhurst
Cofton Hackett = Rogate
Hampton = Cocking
Hockley Heath = Rake
Hollerton = Crawley
Hoyledale = Midhurst
Inkberrow = Lavant
Netherbourne = Compton & Marden
Peopleton = West Lavington
Rubery = Stedham
Rushock = Easebourne
Salford Priors = Hollycombe
Wychbold = Camelsdale
Penny Hassett = West Dean

Ambridge = Foyer
Borchester = Outside Lab 1.
Hoyledale = Outside Biology Lab.
Inkberrow = Out Students Block
Netherbourne = Long Corridor
Penny Hassett = Student Pips.

CENSUS

Extracts from the 1971 Census for the Main villages and town, together with Census data for Worcestershire, Hoyledale R.D.C. and Borchester R.D.C.

SCHOOL POPULATION

Gives the detailed annual returns to the D.E. for the main schools in the exercise; Number of pupils in each age group; numbers of full time and part time staff, future projections of numbers for the next five years; total school population of Worcestershire.
FORWARD CAPITAL PROGRAMME AND CAPITAL BUDGET

Gives detail of the school building programme including schools in the planning pool (awaiting D.E.S. approval); schools in the Design List (approved by D.E.S. detailed plans and estimating being carried out); Schools on the Starts List (i.e. building to start).

REVENUE BUDGET

Gives details of total Worcestershire C.C. expenditure on all services with a detailed breakdown of the expenditure on Education.

1944 ACT SECTION 13

This section of the Act gives the legal side of closing a school or making a significant change in its character.

STANDING ORDERS

Gives detailed procedure for running meetings of councils and/or committees.

TRANSPORT

Local authorities have a statutory obligation to provide transport for primary children living further than 2 miles from the school and secondary children living further than 3 miles from the school. For the purposes of this exercise assume that a small bus (24 seats) owned by the local authority with a part time driver costs 50p per mile to run; that a single decker (49 seats) provided by an outside contractor costs 35p per mile to run and a double decker (60 seats) 35p per mile to run. A taxi for one or more pupils would cost £2.20 per day. A child should not spend more than One Hour travelling to school in the morning.

REQUISITIONS AND CAPITATION

Gives details of the money available for ordering books and materials etc., for primary and secondary schools together with ordering procedures.

EDUCATION STATISTICS 1970-71

Gives a breakdown of educational expenditure in all counties of England and Wales.

TIMETABLE OF MEETINGS

Note: In some cases you will be unable to attend owing to two meetings happening at the same time. In this case, you should send apologies to the Chairman.

If you are unable to be present at a particular meeting, and wish a particular point to be discussed you may raise this in your letter of apology.

Mature students, who do not always go regularly to pips should note that they should check them regularly during this exercise for correspondence particularly if they are officers of any committee or group.
### Tuesday January 15th

<table>
<thead>
<tr>
<th>Time</th>
<th>Introduction</th>
<th>HALL ONE</th>
</tr>
</thead>
</table>
| 9.15prompt | Ambridge P.T.A.  
               Penny Hassett P.T.A.  
               Netherbourne P.T.A.  
               Inkberrow P.T.A.  
               Hoyledale High and Grammar Schools P.T.A.  
               Hoyledate Hadow Road P.T.A.  
               Borchester Sec. Mod. P.T.A.  
               Hoyledale Old Students Association.  
               Staff and Contributors to Borchester Echo.  
               Hoyledale Advertiser.  
               Worcestershire Radio.  
               Schools Sub-Committee.  
               Question Session (Optional) | Hall One  
                                                   Maths 3  
                                                   Maths 2  
                                                   Maths 1 |
| 12.30 | HALL ONE                                                                 | Hall Two                           |

### Tuesday January 22nd

<table>
<thead>
<tr>
<th>Time</th>
<th>Introduction</th>
<th>HALL ONE</th>
</tr>
</thead>
</table>
| 9.15 | Ambridge School Managers  
               Penny Hassett School Managers  
               Netherbourne School Managers  
               Inkberrow School Managers  
               Hoyledale Sec. Schools Governors  
               Borchester Sec. Mod. Schools Governors  
               Ambridge Mothers Union  
               Penny Hassett Mothers Union  
               Netherbourne Mothers Union  
               Inkberrow Mothers Union  
               Hoyledale Mothers Union  
               Borchester Mothers Union  
               Active Conservatives  
               Active Labour  
               Active Independents  
               Active Liberals  
               Executive Sub-Committee | Hall One  
                                                   Maths 3  
                                                   Maths 2  
                                                   Maths 1  
                                                   Conference Room (1)  
                                                   Education 1  
                                                   Geography 1  
                                                   Geography 2  
                                                   Education 3  
                                                   Conference Room (2)  
                                                   Religious Studies Room  
                                                   Biology Lab. Balcony  
                                                   Biology Laboratory  
                                                   Hall 2  
                                                   Hall 2  
                                                   Education 2 |
| 11.05 | HALL ONE                                                                 | Hall Two                           |

### Wednesday January 23rd

<table>
<thead>
<tr>
<th>Time</th>
<th>Introduction</th>
<th>HALL ONE</th>
</tr>
</thead>
</table>
| 9.15 | Ambridge Parish Council  
               Penny Hassett Parish Council  
               Netherbourne Parish Council  
               Inkberrow Parish Council  
               Hoyledale Parish Council  
               Borchester Parish Council  
               County Teachers Association  
               Ambridge Womens Institute  
               Penny Hassett Womens Institute  
               Netherbourne Womens Institute  
               Inkberrow Womens Institute  
               Hoyledale Womens Institute  
               Borchester Womens Institute  
               General Purposes Sub-Committee | Hall One  
                                                   Maths 3  
                                                   Maths 2  
                                                   Maths 1  
                                                   Conference Room (1)  
                                                   Education 1  
                                                   Hall Two  
                                                   Stage Hall One  
                                                   Geography 1  
                                                   Geography 2  
                                                   Education 3  
                                                   Biology Laboratory  
                                                   Education 2 |
<table>
<thead>
<tr>
<th>Time</th>
<th>Activities</th>
<th>Rooms</th>
</tr>
</thead>
</table>
| 2.00    | Borchester R.D.C.  
Hoyledale R.D.C.  
Borchester Civic Society  
Penny Hassett Society  
Netherbourne Parish Church Council  
Hoyledale Civic Society  
Diocesan Education Committee  
This time is also available for additional committee meetings, open meetings, town/village meetings, protest meetings. | Education One  
Conference Room  
Religious Studies  
Maths 3  
Geography 2  
Biology Laboratory  
Hall One |
| **Tuesday January 29th** | Time available for any meeting of any group, probably to discuss issues passed to them by other groups as a result of meetings on Tuesday January 29th.  
Shadow Education Committee of New County Council  
Netherbourne and Hoyledale District Council | All rooms available as in previous weeks.  
Conference Room  
Biology Laboratory |
| 11.05   | Education Committee                                                      |                     |
| **Tuesday February 12th** | County Council Meeting  
(ALL STUDENTS)  
Seminar Tutor Groups  
Evaluation  
Staff Meeting | Hall One  
Groups to meet in Halls One and Two  
Hall One |

NM 417
APPENDIX - DD

1. Summons to attend County Council meeting - 1972.

2. Note to County Councillors and Agenda.


4. Appendix: "A Second Look at the Closing of Village Schools".

(See 5.3.1(7*, and footnote), 5.3.2(7)).
You are hereby summoned to attend a Quarterly Meeting of the County Council to be held at 9.15 a.m. on TUESDAY, 1st FEBRUARY, 1972, at the COUNTY HALL.

AGENDA

1. To receive reports on the following Committees and to make such Orders thereon as the Council shall think fit:—
   (1) Records
   (2) Fire Brigade
   (3) Coast and Countryside
   (4) Local Government
   (5) Agricultural and Small Holdings
   (6) Health
   (7) Social Services
   (8) Roads and Bridges
   (9) Planning
   (10) Education
   (11) Finance

2. Any notices of Motion submitted by Councillors.

3. Receive and take measures respecting official communications and correspondence (if any) submitted by the director of the Chairman.

Clerk of the County Council
Notes for County Counsellors

As you will see from the attached summons, there has been a slight change of plan and the meeting on February 1st will be a meeting of the County Council, and not of the Education Committee.

By Friday 28th January (lunch time) the three sub-committees of the County Council will have met and discussed the report "The closing of Village Schools".

There is a recommendation in the report: "The officers recommend the Education Committee to close the three schools at Ambridge, Penny Hassett and Neitherbourne, and to transfer the pupils to Inkberrow".

As a result of discussing the report, the sub-committee may in their minutes make amendments to the recommendation:

a) That the recommendation be not approved.

b) That certain words in the recommendation be amended.

c) That the report be referred back to the full time officers for further consideration.

ALL MINUTES OF COMMITTEES TO BE IN MR. STODD'S PIP BY 6.00 p.m. ON FRIDAY JANUARY 28th.

In the normal course of events, the minutes of the separate sub-committees of the Education Committee would be received at a full meeting of that Committee. For the purposes of this simulation, however, this meeting will be omitted and Mr. Stodd will write the report of this 'non-meeting' in the light of the minutes of the sub-committees and any other correspondence which has been sent to County Hall.

These minutes will be circulated to members as soon as possible.

On Tuesday February 1st, the County Council will receive the minutes of its Education Committee together with any recommendations they may contain.

The conventions of the simulation demand that the County Council should reach its decision within a given time limit, probably 40 minutes. Counsellors who wish to speak at the meeting either for or against the recommendation should notify Mr. Stodd in writing by Monday, January 31st at 1.30 p.m. indicating proposal or to the point(s) they wish to make.

Such Counsellors will be allowed TWO minutes to make their point.

Any Counsellor wishing to make an amendment to the recommendation in the report should do so as indicated above and this should be put IN WRITING to Mr. Stodd by the same deadline. Amendments will need to be seconded.

The Chairman will call on as many counsellors as possible to speak from both sides before the time limit is reached.
VORCESTERSHIRE COUNTY COUNCIL

Report of the Meeting of the Education Committee held on the 29th January 1972

1. Present: All members of the Committee

2. Minutes: The minutes of the meeting held on January 3rd were read and approved.

3. Sub-Committee Minutes: The chairman noted that all three sub-committees had considered the Report "The Closing of Village Schools".
   
a) Executive
   
   Recommended that the relocation of primary education in the Borchester and Ripple Rural Districts is based on an expanded school at or in the vicinity of Penny Hassett and not, as the Report recommends, at Inkberrow.

b) General Purposes

   Recommended that a new First school should be built south of Penny Hassett and that Inkberrow should become a Middle School.

4. Report - "A second look at the closing of Village Schools" (See Appendix)

   In the long discussion which followed, the committee found themselves weighing the economic advantages of Scheme A against possible social and educational advantages in Scheme D.

   Recommended: That the Village Schools of Ambridge, Penny Hassett and Netherbourne should be closed and the pupils transferred to an enlarged school at Inkberrow. (In favour 17 - Against 16)
The Closing of Village Schools

Background.

In the summer term of 1971, the Committee seriously considered the possibility of closing the village school at Ambridge, because of a deterioration in the fabric of the building.

At its August meeting, however, the Committee deferred the decision to a future date and temporary repairs to the building were carried out.

In carrying out these repairs, however, the builders have found that the building is in much worse condition than was at first feared and, as a result, the whole question of the future of the school has to be reconsidered.

The Four Village Schools - (Ambridge, Penny Haasset, Netherbourne, Inkberrow)

In each of these villages, the school is small with two classes or, in case of Inkberrow, three classes. The officers of the Committee have therefore taken the trouble at the Ambridge school as an opportunity to consider the whole question of the future of all of these four schools.

An additional factor in deciding to take this broader look has been the fact that the Head Teacher of the Penny Haasset school is also about to retire.

There is a strong argument in favour of closing the schools in three of the villages, and transferring the pupils to the Inkberrow school which would be enlarged to take the increased numbers.

This may appear to be a radical solution and so the Committee are asked to consider the arguments for this.

The Educational Argument

Not unnaturally there are arguments in favour and against this proposal on educational grounds. In favour would be the fact that the educational environment in a two teacher school is inevitably limited. Two teachers have not the breadth of expertise which will be found in a larger staff although it should be added that we have been extremely fortunate in the staff we have had at the schools in question.

Secondly it is extremely difficult to teach in one class, children of such a wide age and ability range, as will inevitably happen in such a small school. The top class, for example often containing children from 8 years to over 11 years old, some of who will be of grammar school ability while others will be extremely retarded. The larger school means that classes can be in more restricted range.

The main argument in favour of keeping these small schools open is the distance from the pupils' homes. It is obviously not ideal if young children have to travel by bus to school and it is difficult for close
home school contact to develop, when they are distant from each other. This is a very important consideration and one which the Officers would not wish the Committee to dismiss lightly.

The Economic Argument

The main economic argument against keeping open four small village schools is that many costs are multiplied four times over, when, if the four schools could be combined, the costs could be reduced. This is not to say that it is four times as expensive to run four small schools compared with one large school, but it is certainly proportionally much more expensive as the table below attempts to show.

<table>
<thead>
<tr>
<th>Four Small Schools</th>
<th>Larger School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Four caretakers</td>
<td>One caretaker plus part time cleaner</td>
</tr>
<tr>
<td>Four central heating systems</td>
<td>One large central heating system</td>
</tr>
<tr>
<td>Four part time secretaries</td>
<td>One Full time secretary</td>
</tr>
<tr>
<td>Four sets of P.E. equipment</td>
<td>One set of P.E. equipment</td>
</tr>
<tr>
<td>Four Television Sets</td>
<td>One Television Set</td>
</tr>
<tr>
<td>Four Libraries</td>
<td>One Library</td>
</tr>
</tbody>
</table>

Closing the four schools and opening one larger school would lead, therefore, to a considerable saving in the rate payers money, although one would have to set against this the cost of transporting the pupils to the central school.

Another economic argument in favour of the larger school runs as follows:

\[ \begin{align*}
\text{Small School} & = \text{Annual recurring expenses, which the school must buy, such as stationary and art materials.} \\
\text{Large School} & = \text{Money available for spending at the Head's discretion.}
\end{align*} \]

C.P.I.T.I.A.T.I.O.N

It can be seen from the diagrams that most of the Capitation money each year, based on the number of pupils in the school, is earmarked for basic running expenses. There is, however, a proportion which can be spent to buy particular items the school needs. This is inevitably smaller in the 2 class school than in the large one.
The table below will serve to make the point clearer.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>School A: Two Teachers</th>
<th>School B: Eight Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Library Books</td>
<td>Library Books Tape recorder</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P.E. Equipment</td>
</tr>
<tr>
<td>Year 2</td>
<td>Maths Equipment</td>
<td>Maths Equipment</td>
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<tr>
<td>Year 3</td>
<td>Library Books (Half)</td>
<td>Library Books</td>
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<tr>
<td></td>
<td>P.E. Equipment (Half)</td>
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<tr>
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<td>A Tape Recorder</td>
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</table>

Money available for spending after annual recurring expenses have been met.

The larger amount of money available in the big school leads to much greater flexibility and the possibility of using some capitation money for more imaginative purposes.

Finally, in a two teacher school there are no responsibility posts except for the Head Teacher whereas in the large school there may well be several available. This would mean that the Committee could hope to attract more experienced staff to such a school.

Conclusion

This report has tried to outline as fairly as possible the problem. Given that we are increasingly trying to do more and more with the same amount of money, THE OFFICERS RECOMMEND THE COMMITTEE TO CLOSE THE THREE SCHOOLS AND TRANSFER THE PUPILS TO THE ENLARGED INKBERROW SCHOOL.

They regret, however, the passing of the small schools and recognize only too well the great strength they have been to life in all the villages.

C.W. Brown
Chief Education Officer

APPENDIX

Building Programme (provisional)

September 1972 - Ambridge School to close children to move to temporary accommodation at Inkberrow.

April 1973 - Phase 1 building to be complete accommodating pupils from Inkberrow, Ambridge and Penny Hassett, which will close in April 1973.

September 1973 - Phase 2 building Hall, and extra classrooms, complete. Netherbourne Church School to close and pupils move to Inkberrow.
"A Second Look at the Closing of Village Schools"

As a result of the deliberations of the sub-committees of the Education Committee, the officers have looked again at the implications of the closures.

The following schemes have been suggested:

Note that in arriving at these figures the following cost limits have been used. It should be noted that building costs have risen by 45% since the Plowden Report was issued in 1966.

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<th>Pupil Numbers</th>
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**Scheme A**

The original scheme. Ambridge, Penny Hassett and Netherbourne to close, Inkberrow to be enlarged.

Number of Pupils 248

Cost £46,720 for additional buildings
£10,000 for modifications to existing ones.

Total £56,720

**Scheme B** (Suggested by Executive)

Primary School near to Penny Hassett serving Ambridge and Netherbourne.

Number of Pupils - Penny Hassett 128
Inkberrow 120

Cost £46,720 for new School
£15,000 cost of land.

Total £61,720

**Scheme C** (Suggested by the Schools Sub-Committee)

New School at either Penny Hassett or at Inkberrow leaving the Church School at Netherbourne.

Number of Pupils - New School 203
Netherbourne 45
Cost £64,451 If built at Penny Hassett (Totally new buildings)
£15,000 Cost of land
Total £79,451

£43,014 If added to existing Inberrow school including modifications as in Scheme A.

**Scheme D** (Suggested by General Purposes Committee)

**First School at Penny Hassett and Middle School at Inkberrow**

Number of Pupils - Penny Hassett 123
Inkberrow 125

Cost
- **Penny Hassett** £44,895
- Remodelling Inkberrow as a Middle School £20,000

Total £64,895

**Comments**

In weighing the respective merits, the following factors need to be borne in mind.

1) Government feel that the most satisfactory size for schools is:
   - First School - about 240 pupils
   - Middle School - about 300 to 450 pupils.

2) In schools of 70 or fewer running costs are exceptionally high.

**Scheme A**

1) Closes three schools with high running costs.
2) Provides a size of school which at least approaches the suggested ideal size.

**Scheme B**

1) Provides two schools well below the acceptable ideal size.
2) It is still a compromise because it will still involve travelling from the villages to the school.
3) It is by no means certain that the site suggested would be available since it is White Land.

**Scheme C**

1) The cost of running the Netherbourne School would have to be met by the Authority and not by the Church and a school of 40 or more pupils is very expensive.
   If built at Penny Hassett;
2) Travelling costs would be considerably increased compared with Scheme A because half of the pupils come from Inkberrow.
3) The total cost would be excessive.
Scheme D

(1) Both schools would be small compared with the ideal size.
(2) Travelling costs would be very high involving transporting young pupils from Inkberrow to Penny Hassett and older pupils in the opposite direction.

Conclusions

The officers suggest that:

B) Has only limited advantages to offer as a solution
C) Sited at Penny Hassett is unacceptable
   Sited at Inkberrow is possible but advise strongly against keeping open the small school at Netherbourne.

They conclude that A and D need careful consideration but feel that their original scheme is more in line with Government policy.

C.W. Brown,
28/1/72
Evaluation of the 1972 simulation feedback to students and staff in March, 1972. (See 5.3.4(6)).
The Ambridge School - EVALUATION

The following is a brief summary of certain points of interest which came out of the evaluation. A summary sheet of the full results of the analysis has been placed on the Education Board.

1) There were 116 replies from the whole year group and this may well give a distortion to the results.

2) Disappointingly only half of the respondents were able to see the link between the self-instructional approaches of the course and the Open Plan School.

3) Most students felt they had gained some insight into the mechanics of simulations.

4) Over half felt they had gained greater confidence in their own ability in committees.

5) Over half consciously tried to play out roles other than their own.

6) A surprisingly positive response to the self-instructional study unit on 'The Economics of Education' which was worked through in some detail.

7) The full potential of the slide tape sequence as a medium for instruction is beginning to be exploited. Some students rated this 'difficult' or 'very difficult' and many of these took full advantage of the means of instruction, by working through it a second time.

8) There was a lack of reading of books to depth on this course, but good use was made of the documentary material provided.

9) The course was not completely successful in giving an insight into the way the various committees involved, operate and their inter-relationship.

10) Disappointingly only half of the students felt they were consciously applying the economic concepts introduced on this course.

11) Finally in the space for general comments, there was a clear demand for a larger period of time to be given over to the exercise. Yet again, the conflicting pressure from main subject work and other courses, affected involvement in the course. Finally there was a feeling that thought needed to be given to timetabling it at a different point in the second year.

General Comment

This evaluation has thrown into clear relief some relative strength and weaknesses of the course. Critics of evaluation should note that certain things I subjectively felt to be successful were not so, and equally certain things I had felt were unsuccessful were in fact well received!

The evaluation will of course, help in future course development.

G.J. Stodd
March 1972
Outline contents analysis of two files used in the simulation exercise (5.3.1(7), 5.4.1(11)).
OUTLINE CONTENTS ANALYSIS OF TWO FILES
USED IN THE SIMULATION EXERCISE (5.4.1(11))

FILE ONE - "THE AMBRIDGE SCHOOL"

Part One

(1) Letter from the Chief Education Officer, accepting a builder's tender to carry out temporary repairs to Ambridge School.
(2) Ambridge Parish Council: agenda for annual parish meeting, containing item about the school's future.
(3) Letter from the Chief Education Officer to Mr. Dan Archer, Chairman of the School Managers, asking for comment on a possible closure of the school due to falling pupil numbers.
(4) Letter from Mr. Archer, the Chairman of the Ambridge Parish Council to the Chairman of the Education Committee, asking for a representative of that Committee to attend an extraordinary parish meeting.
(5) Letter of acceptance of the above invitation.
(6) Letter of resignation from the Headmistress of the Ambridge school.
(7) Letter to the Chief Education Officer from Mr. Archer, as Chairman of the School Managers, commenting (see (3) above) on the proposed closure and asking for a reconsideration.
(8) Letter from the Chief Education Officer to the Headmistress, asking her to discuss her threatened resignation with him.
(9) Letter from the Chief Education Officer to the Headmistress, thanking her for withdrawing (temporarily) her resignation.
(10) Letter to Carol Tregorran from Jill Archer suggesting a meeting to discuss concerted action to prevent the closure.
(11) Notice of the extraordinary parish meeting (see (4) above).
(12) Letter to the Chairman of Borchester Rural District Council from Mrs. Archer, writing on behalf of the Ambridge School Action Committee, asking the Council to consider a report which outlined the likely increases in the future school population of Ambridge.
(13) Identical letter to the Chief Education Officer.
(14) Letter to Mr. Dan Archer, as Chairman of the School Managers, from the Chief Education Officer, deferring the decision to close the school.

Part Two

(1) Letter from the builder, carrying out the temporary repairs (see Part One(1)), to the Chief Education Officer, reporting the need for more extensive repairs.
(2) Memorandum from the Staffing Department to the Deputy Education Officer, reporting that the Headmaster of Penny Hassett School was due to retire and asking for permission to go ahead with a new appointment.
(3) Memorandum to the Deputy Education Officer from the Architects Department providing estimate of the cost of the additional repairs to Ambridge School.
(4) Memorandum to the Deputy Education Officer from the County Treasurer asking for urgent economies on staffing.

(5) Memorandum to the Deputy Education Officer from the Senior Advisor expressing concern over the problems of teaching a wide age range and ability range in very small schools.

(6) Memorandum to the Deputy Education Officer from the Audio Visual Advisor outlining the difficulties of supplying very small schools with audio visual equipment.

(7) Response from the Deputy Education Officer to the originators of '2' to '6' above, convening a special meeting.

(8) Memorandum, following this meeting, to the Assistant Education Officer, (primary), from the Deputy Education Officer asking for a detailed plan involving the closure of three village schools and the expansion of a fourth one.

(9) Similar memorandum to the Architects Department asking for a two-phase building programme.

(10) Report from the Chief Education Officer to the Education Committee outlining the economies to be achieved by larger village schools and suggesting the above plan be carried out. (A phased building plan was attached).

(11) Headline from the Borchester Echo reporting that the Education Committee was considering these proposals.

FILE TWO - "HOYLEDALE COMPREHENSIVE PLANS"

(1) A report outlining a scheme for comprehensive schooling in Hoyledale and Borchester, suggesting the closure of one of the grammar schools and the converting of the other into a sixth form college.

(2) Letter from the Chief Education Officer to all parents, inviting them to attend meetings to discuss the reorganisation proposals.

(3) Memorandum from the Deputy Education Officer to the Chief Education Officer, reporting the outcome of these meetings and advising caution and the setting up of a working party.

(4) Letter from the Headmaster of the boys' Grammar School to the Chairman of the working party arguing for the continuation of some facets of the old grammar schools in the reorganised pattern of schooling.

(5) Letter of resignation from the Headmistress of the girls' Grammar School.

(6) Letter from the Chief Education Officer accepting her resignation.

(7) Letter from a semi-literate parent arguing for comprehensive education.

(8) Open letter in the Hoyledale Advertiser urging caution over comprehensivisation.

(9) Report of the working party advocating comprehensive reorganisation only in Hoyledale, leaving Borchester with the eleven plus exam for at least five years. The report concluded by outlining a two-year cycle of 'design' lists, 'starts' lists and phased building to illustrate the actual sequence of school building.
Headline report in the *Borchester Echo* reporting the County Council's acceptance of these proposals and setting out the formal legal Section 13 notice, under the 1944 Education Act, reorganising the schools.

Discussion document "Education in the Borchester and Hoyledale Areas" proposing another possible solution to the reorganisation problem, involving First and Middle Schools. (This formed the starting point for the 1973 exercise).
APPENDIX GG

Evaluation of the 1973 Simulation Exercise (see 5.4.4(5) and 5.5.2(2)).
It is extremely difficult to make an evaluation of a complex exercise such as this, and very easy to make generalised claims for success or failure. The following is an attempt to make a detailed analysis.

The first part represents a straight analysis of the responses to a questionnaire, while the second part represents an attempt to get at some underlying reasons.

**PART ONE**

In broad terms, the exercise achieved about one third of its objectives and failed to achieve one third.

**THE POSITIVE**

It was in the area of giving students the chance to make decisions, developing their sense of social awareness and giving them insight into the way decisions are actually made that 70% of the students thought the exercise was most successful.

It was also felt to give experience of open plan methods of work and, to a lesser extent, to be professionally relevant. It forced them to look afresh at the basic aims of primary and secondary schools, in particular the meaning of middle school or comprehensive school.

The exercise had many aims in the affective area and there was some unevenness in achieving these. 56% of the students felt it gave them some opportunity for leadership, but only 38% felt it helped them gain in self-confidence. In passing, it is worth noting that only 26% of the year group felt they already had self-confidence before the exercise.

59% of students felt that it gave them greater understanding of what happens inside a group when it collectively tries to solve a problem.

**THE NEGATIVE**

The exercise was least successful in the use which was made of the back up materials provided to help make the decisions. These consisted of statistics of school populations, maps, census returns, the county revenue budget and forward capital programme and bus timetables.

In no case were these materials used intensively by more than 6% of the students and in most cases only 1 or 2 students made this intensive use of the materials.

What was more disappointing was that, apart from good use of the maps provided and the school population figures, less than one third of the students used the other materials at all.

In general terms, then, it would appear that the students were happy to be involved in the general dynamics of an exercise involving decision making, but were not able to tackle it at a level involving depth study of the materials provided.
What is more disturbing is that the exercise was only seen to be intellectually valid by 34% of the year group. It proved difficult for students to analyse what was going on in the exercise, although all the information in terms of copies of all letters, memoranda, minutes of meetings were open to inspection. As a result less than 20% of the students identified the role of the religious, political and professional pressure groups which were part of the exercise although 62% recognised the role of public opinion. Of even more interest, was the fact that less than 10% on average claimed to have any understanding of pressure groups before the exercise.

The exercise was only partially successful in giving students an understanding of the way in which various committees work. In the case of the county council (60%) and P.T.A's (57%) it was successful in the cases of the R.D.C. (16%), the teachers associations (17%), the Diocesan Education Committee (9%), it was not successful, it had varying degrees of success in between.

The simulation asked the students to take on and play out certain roles. This created difficulties for many students and only about one third of the year felt they had successfully played out the role they were given, or developed it further. In addition, one third of the students indicated the need for training in role play techniques.

Finally, the exercise was only partially successful in terms of the application made by the students of 2 economic concepts, cost effectiveness and labour intensiveness, to the problem. These concepts were given to the year group in a self instructional study unit linked with a slide-tape sequence. The unit involved some application of the concepts while working through the study unit itself, but less than 30% of students actually felt they had applied the concepts during the exercise.

CONCLUSIONS

This evaluation has shown areas of serious weakness in the simulation exercise.

In broad terms it is a complex exercise and is probably asking a lot of the bulk of students to spend too much time coming to terms with it. What is clear is that the course is not achieving many of the objectives which it hoped to achieve. The most disturbing thing about the evaluation is that, whereas the exercise was designed to have intellectual depth in terms of the calibre of the support materials provided and the nature of the problems posed, it was not seen to be intellectually valid by 2 of the students.

Having said this, the course is achieving certain valid things in terms of leadership, decision making, professional and social awareness. In generalised terms it was successful, but in the detailed achievement of specific objectives it was not. It is a matter of debate as to whether this is a criticism of the course itself, of underlying abilities and attitudes of the year group or, more probably, a combination of the two.

PART TWO

In addition to the evaluation given in Part One, a detailed analysis was made in an attempt to get at some underlying reasons behind facets of the evaluation.
Differences Between the Sexes

In only one area was there a statistically significant result (at 1% level) and this was whereas 72% of the women looked afresh at the aims of the various levels of schooling (first, middle and comprehensive) only 47% of the men did this.

There was also some slight indication that the women were more confident than the men in tackling various aspects of the exercise, but this lacked statistical significance.

Wing Course and General Course

There was some evidence that the Wings were not as involved in the exercise as the General course. In particular they did not seem to see it as so professionally relevant as did the General course.

Given that the course designer saw the exercise as being particularly relevant to the secondary school curriculum in the future, this may give some cause for concern.

Studies in Curriculum 2 - 9 and 9 - 16

The main differences between these two groups of students centred in two areas. Members of the 2-9 course saw the exercise as slightly more relevant professionally than did the 9-16 course, but it is worth noting that a large number of 9-16 students were simply 'not sure' rather than rejecting it completely.

The second difference was more in the affective area of the course. Whereas 32% of the 9-16 course claimed self-confidence before the course 20% of the 2-9 course made this claim. Not surprisingly therefore more of the 2-9 course compared with the 9-16 course saw the exercise as developing self-confidence and their powers of initiative.

Age

Somewhat surprisingly this did not appear to affect response to the course. The older students appeared the more self-confident and able to take the lead, but they had more difficulty than the younger students in developing the roles they were asked to play.

Personal Education

The personal education level achieved by students on entry to College only appeared to affect their performance in one area, namely the roles they took in the exercise and the way they developed these roles. The results were not statistically significant but are of interest.

The most highly qualified groups of students appeared to have reservations about their effectiveness in playing the roles they were given, than did the lowest qualified group of students, but the highest qualified group were able to develop the role further than the lowest qualified group.
Were you successful in developing your role?

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Parental Education

There was almost no evidence to suggest that the parental education of the year group affected their response to this course.

Previous Schooling

Differences emerged between groups, but there was no consistent pattern and they were not statistically significant.

Eysenck Personality Profile

There was no evidence at all that the unstable students found the course any different from the stable students.

There was limited evidence that the introverted students saw the exercise as giving them increased self confidence, and that the more extroverted students were able to develop the roles further.
A DYNAMIC SYSTEMATIC EXPLANATION
OF THE COURSE DEVELOPMENT PROCESS

B - Other Courses

C - Constraints

A - Innovatory Course

Empirical or Intuitive Design

Objectives

Improve → Design

Evaluation

(a)

(b)

Students

Hidden Curriculum

Staff

Engineers

Processes

Logistics

Equipment

Plant

Personnel

Government

Curriculum

The Literature

Year 1

Year 2

Year 3

Year 4

etc.

YEAR 1

YEAR 2

YEAR 3

YEAR 4

etc.

YEAR 1

YEAR 2

YEAR 3

YEAR 4

etc.

Objectives

Improve → Design

Evaluation

YER 1

YER 2

YER 3

YER 4

etc.

A - Innovatory Course
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