

COURSES IN HIGHER EDUCATION AT THE UNIVERSITY OF SURREY

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ABSTRACT

The article discusses the experience gathered over six years: with courses in higher education, some of which were of a general kind, While others were workshops on specific subjects. A particular study was made of the 1972 course which was evaluated both through questionnaires during and after the course, and through follow-up interviews. It was found that all participants on this course engaged in some experimentation and innovation during the following year. While participants' aims for the course before arrival had been largely related to the acquisition of teaching skills, it was found that their attitudes changed during the course towards an awareness of more fundamental issues. As the result of the experiences gained, the 1974 course will be available to both more and less experienced teachers and to teachers in all subject areas.

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1. INTRODUCTION

The Institute for Educational Technology has been offering courses in Teaching and Learning in Higher Education since 1968. These have been of two kinds (see Table 1):

- (a) General courses for teachers of mathematics, science and engineering. These have grown from two-day non-residential courses for new Surrey staff to seven-day residential ones open to staff in any institution of higher education, including those with considerable experience. This year, for the first time the course will also cater for teachers in the Humanities and Social Sciences.
- (b) Short workshop courses on special topics, including several on objective testing and evaluation methods. Workshops on the Keller plan and small group teaching will be offered this summer.

In 1972 the Institute received a grant from the U.G.C., which made it possible to appoint a research fellow for one year, Mr. J. M. Kilty, and to offer simultaneously three courses, a general course⁽¹⁾ a workshop course and a discussion seminar for senior staff and administrators. After the termination of Mr. Kilty's appointment, his work has been continued by Dr. B. C. Stace, who has been seconded part-time by the University. Because the 1972 general course was studied most intensively, the present account is confined largely to this course and its consequences. Reference will also be made to an Institute of Physics Education Group Conference which profited from the lessons learned on earlier courses,

2. THE GENERAL COURSE IN 1972 (Course A)

The aim of the course was stated to be:

“To introduce new entrants to the teaching side of their work and to discuss problems in teaching and learning in higher education, with special reference to mathematics, science and engineering.”

To achieve this, a very full seven-day course was provided, with activities from 9.15 a.m. to 10.30 p.m., when the bar closed (see Table 2). The methods employed included:

- (a) A number of brief lectures, followed by group discussions, dealing with some of the problems facing the new lecturer as well as with some of the underlying fundamental theory.
- (b) Demonstrations, followed by workshops, on teaching aids
- (c) Practical sessions with feedback for participants to practise the basic skills of lecturing and group teaching.
- (d) Exhibition of books, relevant references to the course, educational aids, etc.

However, this catalogue of methods fails to reveal what was undoubtedly the most essential requirement, if the aims were to be achieved. This was the creation of an atmosphere of mutual trust, so that participants felt able freely to give of themselves, and of total immersion in the activities, as so much had to be done in such a short time. It was thought that this atmosphere could be created through the great intensity of the course and the insistence on residence, and the reactions obtained from participants showed that this was indeed so. Just one indication of what could be done under these circumstances are the five minute videotapes, designed to be teaching aids, which were produced by the members in groups of eight in four hours each. This experience was so successful that it was repeated in 1973. (A sample tape from the 1973 course was shown at the conference).

The course was evaluated in three ways:

- (a) A pre-course questionnaire.
- (b) Daily evaluation sheets, completed by each member and handed in the following day.
- (c) A comprehensive questionnaire completed during the week immediately following the course.
- (d) Follow-up interviews during the year following the course.

Some of (a), (b) and (c) are contained in a Preliminary Report ⁽²⁾ and lessons learned in that way have been incorporated in subsequent courses. The present paper will concentrate on the more long term follow-up (d)⁽³⁾ and link it to the pre- and post-course questionnaires (a) and (c).

3. THE DISCUSSION SEMINAR OF 1972 (Course C)

Before turning to this follow-up, something must be said about the discussion seminar for senior teachers and administrators (Course C), which immediately followed Course A*. Some of the members of Course C had acted as tutors on Course A, while some of the members of Course A stayed on for the first evening of Course C. This made it possible to introduce the rest of course C members, who had just arrived, to the experiences of Course A, at least by proxy. The result was totally unexpected, and is best described in the words of one of the new arrivals, who at the end of an hour's discussion remarked in some desperation: "I cannot understand a word of what you are saying but you all seem to have had a most remarkable experience."

After that, Course A members present calmed down and became somewhat more coherent. They had however demonstrated that the desired atmosphere of total involvement had been well and truly created.

The fact that the participants of the seminar fell into two groups, those who had acted as tutors on Course A and those who took part only in Course C, made it difficult to produce truly integrated discussions, a difficulty accentuated by the non-attendance at some sessions of non-residential members. Nevertheless, the seminar produced an agreed set of recommendations⁽⁴⁾ which have proved most valuable in the organisation of subsequent courses and in discussions with outside bodies. The technique, by which these recommendations were agreed is itself of interest. A first draft based on the discussions of the group was put together by three members on the second evening and put on overhead projector transparencies. This made it possible on the final, morning to discuss, alter and eventually agree them in a way that would not have been possible if every member had had a duplicated copy in front of him.

*The objective testing Workshop (Course B) which took place simultaneously : will not be referred to further. It proved impossible to evaluate, owing to overwhelming pressures on the research fellow, generated by the courses.

4 THE FOLLOW-UP STUDY OF COURSE A

The great majority of course participants were interviewed late in the academic year following the course. These interviews have shown that all participants feel that attendance at the course has had a positive effect on their thinking, and that all have carried out some activity which was new or more effective for them. Each individual has made his own decisions in the light of his own personality and experience, and the needs of his students and the expectations of his colleagues as perceived by him. The most common changes have been in approaches to the tutorial, in the issue of lecture notes and handouts, in the use of the overhead projector and in thinking about aims and objectives.

As regards tutorials, very many participants have reported much more effective student involvement and activity. To give just one example, one lecturer broke up three-hour sessions so that much more varied activities could take place, e.g. introducing press cuttings, demonstrating statistical fallacies and requiring students to present and discuss their own solutions. Several teachers started group projects in which, for example, students adopted different roles, simulating the industrial situation.

Lecture notes and handouts have been used quite extensively by participants, especially for course synopses, complicated diagrams and tables, and mathematical arguments. One lecturer gives full notes a week in advance and organises his lecture around the salient features and the most difficult concepts, as a result, finding a great deal of freedom and a more enjoyable lecture experience. His students greatly appreciate the usefulness of the notes for examination purposes. Another presented a quite detailed framework in the notes but found difficulties in balancing the amount presented with the work done by students in the lecture. One problem was found in more than one low-budget department, viz., that the cost of duplicated notes was prohibitive, even being questioned for very small groups of students. Another, giving a handouts felt that rather more ground was covered and in greater detail than in previous courses, leaving more for students to revise.

The overhead projector was used by many who had not used it before the course and more extensively by others, often in conjunction with the chalkboard. It was used as a chalkboard substitute to maintain face-to-face contact with the class; for the easy display of diagrams and tables (often in conjunction with duplicated sheets); with overlays and with working models.

Many teachers applied themselves to the task of defining their aims for their courses and found that it clarified the problem of organising their courses and defining their approaches.

Several teachers used lecture or course evaluation questionnaires and pre-knowledge surveys. Often these were based on questionnaires used in the in-house evaluation of the Surrey course described in the preliminary report or on the aims questionnaire used in the present project. Some attempted progressively to structure their courses on a unit basis, leading for some to plans for a 'Keller plan' course in future years; Others made tape/slide packages or used film loops more; one integrated laboratory work and film loops and. produced a unit based course, etc., etc.

Many teachers reported an easier lecturing experience, e.g. one saw less need for a 'polished performance', more need for active student involvement in the learning process even to the extent of following up student suggestions knowing they would not work, finding in the process less burden to provide the answers (without the questions). Another, finding relationships with students easier and student response better, also, found for the first time real enjoyment in teaching.

In general, the course has led to experimentation and innovation at least. on a small scale for all, many of whom were less worried about trying out things new for them, though. for many the course came too late to greatly affect the design of this year's courses, e.g. an already partly planned course was seen as able to derive little benefit from a definition of aims. For many too, there was conflict

with other activities; research which was so important and interesting it ate into leisure time; the writing of books; extensive lecture preparation for unfamiliar subjects, and so many disparate responsibilities, many felt it extremely difficult to carry out all of these at the level they wished.

Innovation, however, is not without its opposition. This is perceived as coming from traditionalists who see innovatory activities as a potential threat, i.e., requiring them at some future date to carry out similar activities under student pressure. One teacher, criticized for 'spoon-feeding', felt able to reply 'it leaves me time for real teaching'. Another teacher working in a small department which was isolated from other departments, was disillusioned with staff who neither wanted to change nor know their students. Others reported interest in their activities both from those ready to adopt successful ideas as well as those waiting to criticise unsuccessful attempts to try new things out. However, disinterest was more common than opposition and most participants of the course found colleagues, including senior departmental members, were ready to offer support and encouragement. One teacher, probably the most experimental and innovatory of all, who had read nothing in education before the course, and had read considerably since, felt that young teachers had much more freedom to experiment than they realised. However, it was apparent that positive encouragement was a necessary condition for this experimentation to occur at least in the early years of a teacher's career.

5. AN ASSESSMENT OF THE ACHIEVEMENT OF AIMS OF COURSE A

Participants were asked to rate on a five point scale (5 - very important, 1- of no importance), the importance and achievement of each of a list of thirty-three aims, derived from discussion with University teachers and, in particular, participants of former courses. They were asked to rate these aims on "the importance which you attach to each aim for yourself" before the course, and on "how well you think the course achieved these aims for you" immediately after the course. For the present discussion teachers attending the course with one or more year's experience will be called 'more experienced teachers' and new teachers and teachers with less than a complete year's teaching experience 'less experienced teachers'.

Taken as a group the participants rated two particular aims as most important for themselves: 'to improve personal lecturing technique' and 'to increase knowledge and methods of organising and conducting a lecture' (see Table 3). These were followed by 'to increase knowledge of techniques and methods of organising and conducting a tutorial'. More experienced teachers, however, rated even more highly than the three aims above, 'to improve audibility and clarity of speech'. In addition they saw 'to increase awareness of personal annoying mannerisms' and 'to develop an orderly blackboard manner' as being clearly more important to them than most other aims. This was in marked contrast to less experienced teachers who, whilst considering them important found them less so than the more experienced teachers, and saw as more important some other aims, e.g., 'to increase knowledge of other teaching methods' and 'to develop confidence in teaching'. These, in their turn, were considered less important by more experienced teachers. It would appear therefore that the more experienced teachers were aware of particular deficiencies in their teaching performance, while the less experienced teachers were more generally interested in teaching and learning problems. The preoccupation with the lecture confirms earlier findings⁽⁵⁾.

The aims which participants thought the course achieved for them are listed in Table 4 in order of perceived achievement. Notable amongst these aims are 'to develop a critical approach to teaching', achieved better for less experienced teachers and 'to develop a critical awareness of standards in teaching', achieved better for more experienced teachers. This implies that the course raised for participants possibilities which they had not considered and which they accepted. The course was, however, only moderately successful for the two lecture aims and poor in achievement of 'to improve audibility and clarity of speech', thought so important particularly by more experienced

teachers. These underachieved aims reflect on the whole the small amount of time devoted to practice lectures for each individual. The majority of participants accepted that in a one week course there were so many things to experience that no more than a few hours could be devoted to this activity, but it does raise issues about the desirability of arranging individually tailored sessions for blackboard practice, voice exercises, lecture preparation talking in large theatres, and arranging group sessions on specific topics.

For all participants, the most overachieved aim was 'to develop a practical interest in education as a field of study'. This is a most interesting effect of the course, clearly reflecting a development of the participants' concept of education and its implications in the work of a University or Polytechnic teacher. Participants also agreed that 'to increase awareness of issues and debating points in higher education' was overachieved, reflecting the high professional level of concern communicated in lectures and discussions, both formal and informal. There is an implication here that the course was successful on the whole in communicating new ways of thinking, in showing new possibilities and giving new insights into teaching to the participants, and in changing and developing their attitudes towards teaching and learning. That these changes were recognised and accepted by participants was made clear in interviews.

6. EXPERIENCES IN SUBSEQUENT COURSES

In 1973, two overlapping courses were offered, for less and for more experienced teachers (Y and X). A significant departure from previous practice was the absence of discussion leaders from the group discussions. This experiment with tutorless groups, had been proposed as a result of the success of unstructured group sessions, which had taken place on a voluntary basis on the Sunday of the 1972 course A. However, as an integral and formal part of a course they proved a failure, in that they led in many instances to unresolved tensions and frustrations. Discussion leaders will therefore again be present in 1974, but the lessons learned from this failure are significant in connection with what it is possible to achieve not only with academic staff, but a fortiori with students.

The course was attended by two observers from humanity departments of the University of Kent. They made a most valuable contribution to a discussion which took place at the end of course X and which led to the conclusions:

- (a) There is no need to distinguish between courses for more and less experienced teachers, but the courses provided are not well designed for the needs of totally inexperienced teachers. (This conclusion had also been reached by Course C in 1972).
- (b) There is considerable overlap between the needs of the sciences and humanities.

As a result of these conclusions, the 1974 course will be jointly for more and less experienced teachers and, with certain alternative options, for teachers in all subject areas. It will be run in collaboration with staff from the University of Kent.

A second experience relates to a conference of the Institute of Physics Education Group which was held at Surrey in September 1973. This conference replaced the traditional format of lectures plus discussions by largely participatory activities⁽⁶⁾. The success of this innovation was indicated by the strong demand for more extended participatory workshops expressed at the Conference. Two such workshops will be provided in July 1974.

7. LOOKING TOWARDS THE FUTURE

In spite of the undoubted success of much that has been attempted in the courses so far provided, it is clear that there are very definite limits to what can be done by means of short courses. Two obvious extensions are:

- (a) The provision within a given institution of regular seminars and discussions for those interested in problems in teaching and learning, as well as of on-going assistance for those who wish to take advantage of it.
- (b) The provision of longer courses for senior members of staff who wish to devote a major part of their time to developments in teaching and learning.

These two are related, since in order to provide the staff required for (a) it is necessary to train appropriate staff through courses of type (b). A course of this type, extending part-time over two years and leading to the award of a Postgraduate Diploma, has existed for some years at Monash University, Australia. Plans for a similar course to start in 1975 have been submitted to the U.G.C. by Surrey, City and Kent Universities, and it is hoped that the present financial crisis in the Universities will not delay this start.

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- (3) A full report on the follow-up is contained in: J M. Kilty, Report on the 1972 Course on Teaching and Learning in Higher Education for Lecturers in Mathematics, Science and Engineering, I.E.T., University of Surrey, unpublished.
- (4) Report on a Discussion Seminar on Institutionalisation of Innovations, 26-29 September 1972, I.E.T., University of Surrey, unpublished.
- (5) Margaret King, "The anxieties of university teachers", Universities Quarterly, 28, 69 (1973)
- (6) R. W. Whitworth, "More learning, less teaching?", Physics Education 8, 16, 1974

TABLE 1

SURREY UNIVERSITY COURSES IN HIGHER EDUCATION

Course Year	General		Specialised workshops	Seminar or Conference
	little/no experience	more experience		
1968	Surrey staff M, S, E			
1969	Surrey staff M, S, E			
1970	all staff M, S, E			
1971	all staff M, S, E		Objective testing M, S, E	
1972	all staff (A) M, S, E		Objective testing (B) M, S, E Objective testing Physics	Senior and admin staff (C) Institutionalization of change
1973	all staff (Y) M, S, E	all staff (X) M, S, E	Evaluation methods Physics	Institute of Physics Ed. Group More learning less teaching?
1974	all staff M, S, E, H, and SS		Keller Plan M, S, E Small Groups M, S, E	

Notes: 1. The letters A,B,C, X and Y are used in the paper to refer to these courses.

2. M (Maths), S (Science), E (Engineering), H (Humanities), SS (Social Science).

3. Since 1970, the General Course has also been attended by Surrey post-graduate students. '

TABLE 2

UNIVERSITY OF SURREY
Institute for Educational Technology

COURSE ON TEACHING AND LEARNING. IN HIGHER EDUCATION 1972
TIMETABLE COURSE A

	9.15-12.15	13.30-15.00	15.30-18.00	19.30-21.00
Tuesday 19 Sept		Registration	Purpose of University" (Prof. G. Moodie) (16.30 - 18.00)	Informal discussion in bar
Wednesday 20 Sept	"Audio-Visual Media" (Mr. C.R. Towns) LD and Display	"The Lecture" (Prof. L.R.B. Elton) (14.30 – 16.00) LD	"Self-teaching" (Prof. L.R.B. Elton) (16.30 – 18.00) LD	"Learning" (Mr. D.E. James) L
Thursday 21 Sept	"How students study" (Mr. D.E. James) LD	"Laboratory teaching" (Dr P.J. Black) L	A:Educational Aids B:Practice Lectures	A: Display of visual programmes B:Educational Aids
Friday 22 Sept	"Group Teaching" (Dr P.J. Black) LD	"Aims, Objectives, Evaluation and Assessment" (Prof. L.R.B. Elton) LD	A:Practice Lectures B:Educational Aids W	A:Educational Aids B:Display of visual programmes
Saturday 23 Sept	"Examinations and other forms of assessment" (Prof. L.R.B. Elton) LD	"Use of Library" (Dr. M. Stevenson) L	A:Educational Aids B:Practice Lectures W	Buffet supper
Sunday 24 Sept	"Aims of Course" (11.00-12.30) D	Book Display	Free	Free
Monday 25 Sept	"Student Problems" (Miss A. Newsome) LD	"Student Views" (panel discussion)	A:Practice Lectures B:Educational Aids W	Playback of video tapes made in Educational Aids workshop
Tuesday 26 Sept	"University Government" (Mr. H. Jones, Mr. D. Lockwood) LD			

L = Lecture

LD = Lecture followed by discussion in groups

W = Workshop

Tea: 15.00 – 15.30

Coffee: 10.30 - 11.00

Lunch: 12.15 - 13.30

Supper: 18.30 – 19.30

Bar: 18.00 – 18.00

19.30 – 23.00

TABLE. 3

AIMS THOUGHT IMPORTANT BY PARTICIPANTS

(in order: of importance)

Rank		Mean rating on 5 point scale
1	To improve personal lecturing technique.	4.67
2	To increase knowledge of techniques and methods of organising and conducting a lecture.	4.60
3	To increase knowledge of techniques and methods of organising and conducting a tutorial.	4.27
4	To increase awareness of the variety of student approaches to learning.	4.13
6.	To increase knowledge of other teaching methods.	4.07
	To increase awareness of the variety of possible designs of teaching situations.	4.07
	To increase knowledge of the variety of methods of assessment and their applications.	4.07
8	To increase knowledge of the effects of stating aims and their applications.	4.03

TABLE. 3

ACHIEVEMENT OF AIMS FOR PARTICIPANTS

(in order: of importance)

Rank		Mean rating on 5 point scale
1	To increase knowledge of other teaching methods	3.93
2	To increase awareness of the variety of possible designs of teaching situation	3.85
3	To develop a critical approach to teaching	3.82
4	To increase knowledge of the effects of stating aims and objectives with some precision	3.71
	To increase awareness of issues, debating points in Higher Education	3,71
6	To develop a critical awareness of standards in teaching	3.64
7	To increase knowledge of the variety of small group teaching methods with their purpose	3.46
	To increase knowledge of self-teaching methods	3.46
9	To increase knowledge of available audio-visual aids to teaching and learning	3.43