

# The Loneliness of the Long-Distance Statistics Teacher

Margaret Gallimore - Sheffield, England

## 1. A distance learning diploma for teachers of statistics

The statistics teacher is a very rare breed in England. Statistics is a relatively recent addition to our school curriculum and is still treated very much as an application of mathematics. There is, however, a small, but hopefully growing, band of enthusiastic teachers who wish to become better teachers of statistics. They find themselves enjoying the statistics teaching which is creeping into schools particularly following the introduction of a compulsory National Curriculum which includes "Data Handling" as one of its topics. Very few of the teachers will have studied statistics beyond school level and fewer still will have had any training in how best to teach the subject.

At The Centre for Statistical Education we have always been concerned to promote and improve the teaching of statistics, and we decided that one of the ways in which we could do this was to offer a postgraduate Diploma in Statistics and Statistical Education, a dual course which attempts to improve the teachers' understanding of statistics itself as well as explaining ways of improving their teaching of the subject.

We decided to offer this course as a distance-learning package, with teachers working on course material in their own time and only needing to come to Sheffield for the one examination and for a weekend school (this is to be extended to two weekend schools in the revised course to be launched in October 1990). The reasons for this were almost entirely practical ones; teachers who are sufficiently enthusiastic about statistics to commit a large amount of time and money to improving their teaching of it are still fairly few and far between, so we felt that it was unlikely that there would be sufficient numbers of such teachers living within travelling distance of Sheffield to make such a course viable. Our doubts have been justified by the pattern of applications for the course to date.

The preparation of any new course is always a rather daunting prospect, especially when it is to be delivered in a rather unconventional (for England) manner. In our case we were fortunate in having a good deal of experience and expertise in the field of distance learning on which to draw. In particular, we have been able to utilise the early units of our distance learning MSc in Applied Statistics as a basis for the statistics element of the course for teachers. The postgraduate diploma for teachers has now been running since 1986 and, whilst there is clearly room for improvement, it has been well-received by those who have participated.

## 2. The need for interactions

When the idea was first mooted I must admit to some quite serious misgivings about the teaching method. I have always seen teaching and learning as a social activity with the interaction between students as well as between teacher and students as a vital part of the learning process, rather than it being simply a process of imparting knowledge. I felt that this was particularly important in the case of teachers whose job can be a very lonely one. The problem is particularly severe for statistics teachers who, as mentioned earlier, tend to be well scattered, so the problem was to design the course so that it was as supportive as possible and involved as much interaction between teachers as possible, given the distances between them.

The problem of ensuring interaction between student and tutor is a well-documented aspect of distance learning (cf. Holmberg, 1986), but less attention seems to have been paid to the importance of interaction between students. As mentioned earlier, I considered this to be of crucial importance to teachers. In order to investigate this particular aspect I wrote to all the students on our distance learning courses. After some careful thought I decided to request information in a very general way rather than via a structured questionnaire, as I was anxious not to convey my own preconceived ideas to the students.

I was pleasantly surprised by the number of replies I received, a total of 28 across the five courses. This is a response rate of only 23%, but I had expected even less as all of them are very busy people, being employed full-time as well as devoting a minimum of 10 hours per week to the course. The 36% response rate for students on the Statistics and Statistical Education course was particularly gratifying. The most pleasing aspect of the replies was their depth; five-page letters were not uncommon. It is also interesting that nobody chose to remain anonymous and that the tone of all of them was frank and honest. I hope that this is a token of the open relationship which we try to maintain with all our students.

It was fairly easy to categorise these responses and it became clear that the four main problems encountered by the students are:

- (i) lack of interaction with other students;
- (ii) lack of interaction with tutors;
- (iii) problems in obtaining access to suitable computing and library facilities;
- (iv) lack of immediate response to queries (for example, "Is this a printing error?") which delay progress.

For students on the Statistics and Statistical Education course an additional problem is posed by the (for them) inconvenient timing of the telephone tutorial. (The telephone tutorial time is the time set aside each week by the author of a current course, when she guarantees to be available on a stated telephone number to answer queries. This is a particular problem for teachers, who do not have access to a telephone during normal office hours.)

So lack of interaction with both staff and other students is seen as a problem for all our students. How do we deal with this and how could be improve matters in the future?

### 3. Looking for solutions

One of the most important means of establishing a relationship with our students is via the distance-learning tutor. This is a dual role involving the day-to-day running of the course (mailing material, keeping a record of work, etc.) and, to my mind more importantly, acting as a personal tutor to the students. As distance-learning tutor on the Statistics and Statistical Education course I see my role as one of befriending the students and treating them very much as colleagues. The whole tenor of the course is based upon using the student's own experience and expertise, which we then work with them to develop and apply to their teaching of statistics. I therefore address them by their christian names and encourage them to do likewise, from the very start. I telephone them frequently, usually at home in the evenings so that we can have a "chat" rather than just checking up on progress. It is quite difficult at first to establish a relationship with someone you have never seen, but it is surprising how quickly a rapport develops.

I find that I get to know students very well through reading the work which they send in. Because the assignments we set are very practical and students are encouraged to relate them to their own situation, I find this very useful. I try to reciprocate by not only formally marking their work but also by adding more personal comments, for example, commenting on similar situations I encounter with students. Even in the course units I frequently refer to "we" rather than "you", making it clear that I see myself as another teacher and that it is a shared learning experience.

The other tutors involved in the course are very carefully chosen and try very hard to maintain this "friendly" atmosphere. They try to be approachable and helpful when dealing with queries either on the telephone or by letter. This is much appreciated by the students, judging by their comments.

The success of this approach depends very much upon the personalities of the students as well as the tutors. There are always a few students who hardly ever initiate contact with us and are very reticent when we telephone them. This seems to be far less of a problem once we have met face-to-face and they realise that we are human after all! Many of them in their letters and at the weekend school (when we have a "feedback" session) have said that they find it very difficult to telephone somebody when they have never met.

This problem of telephoning "strangers" seems to be a problem also in the context of contacting other students. We do try to encourage students to contact each other early in the course by sending each student a simple pro-forma on which they fill

in details about themselves. They are at liberty to fill in as much or as little as they wish before returning it to me for circulation around the group. In fact, I gather from the students they very rarely use the telephone numbers provided because they do not like telephoning a stranger.

One suggestion is that we use a telephone conferencing system to get students to know each other. Colleagues in other parts of the world have used this method and recommend it. Unfortunately there are practical problems in arranging this.

The one thing which seems to make a huge difference to the amount of social interaction between us and our students is having actually met each other. Our academic year begins in October and until now our students will not generally have met each other or us until the first examination in the following July. Even then the circumstances are hardly social and very few tutors are present, so the first real socialising is at the weekend school which has been held each September - one year into the course. There has been increasing pressure from students for us to hold the weekend school earlier in the course. The arguments against this have been largely academic, it being argued that since the main function of the weekend is to show the applications of the various courses being studied, quite a lot of theory needs to be covered first.

Recently all the courses have been revised to fit in with a new polytechnic structure, one of the results being that the postgraduate diploma now takes two years to complete instead of eighteen months. This seemed an ideal opportunity to relocate the weekend school to November, so that each student on the course will attend two weekend schools instead of one. Thus, the first weekend will be primarily for getting to know each other and as many tutors as possible, although of course there will be some academic input. The remaining weekend will then be left to cover the academic work as formerly. We hope that this initial contact will mean that students will be much happier to telephone or write to each other, and to us.

#### 4. Summary

Despite my initial misgivings, I have thoroughly enjoyed running this distance learning course. The students are very appreciative and tell us how much they have gained from the course and I certainly have learned a lot from them. As a course team we recognise the particular problems of distance learning and we are trying, as far as possible, to alleviate them. I am sure that we have much still to learn and we will continue to try to improve the course wherever possible.

If you have never tried running a distance learning course, then I recommend the challenge.

#### References

- Holmberg, B (1986) *Growth and Structure of Distance Education*. Croom Helm Ltd.  
Schools Council Project on Statistical Education (1981) *Teaching Statistics 11-16*.  
Foulsham.