

[Published as Managing endings in a longitudinal study: respect for persons]

Understanding Science Lessons: Endings and Respect for Persons

Michael J. Reiss

Institute of Education, University of London

Running head: Understanding science lessons

Understanding Science Lessons: Endings and Respect for Persons

Abstract

In the year 2000 a book I authored which reported the findings of a five year longitudinal study of school science teaching was published. In this paper I describe and discuss the way the book was received by the pupils and teachers it featured. By and large the pupils' reception was positive. However, one group of teachers was deeply hurt by the book. I trace this mainly to my failure to consider adequately their fears of the consequences of the book's publication and possibly to my failure to consider with them the psychological significance of my withdrawing from the school after five years of regular study. I hope that there are lessons not only for myself but for others considering longitudinal and/or ethnographic research in science education and more broadly.

Understanding Science Lessons: Endings and Respect for Persons

We believe that one measure of the validity of ethnographic research is the extent to which the ethnography makes sense to, and at least in part represents the interests of, the people studied

(Whittier & Simon, 2001, p. 145)

In 1999 I finally started writing up a longitudinal study of science education research which I had then been undertaking for five years. The study was based on lesson observations at a school I called 'Pasmoor School' and on interviews with pupils, parents, teachers and other staff. The resultant book (Reiss, 2000) was published a year later and the aim of this paper is to analyse and reflect on how the book was received by the pupils and teachers of the study. At the time of my writing the book I had not anticipated writing such a paper but the way the book was received makes me think that there are lessons for me that may be of interest to others who have carried out longitudinal and/or ethnographic work or are considering doing so.

In particular, I now feel that when longitudinal research leads to the establishment of long-term relationships between the researcher and those who are being researched, it may not be adequate merely to abide by ethical guidelines that centre on 'informed consent'. A broader framework of 'respect for persons' may be more appropriate, combined with sensitivity to imagining how those who have been researched may feel about the ending of the research and publication of its findings.

Methodology

Understanding Science Lessons: Five years of science teaching was published in late July 2000. I had hoped that it would be published before the end of the school year as I was looking forward to taking copies personally to the staff at Pasmoor School. However I received the copies I had ordered just after the end of term. I managed to contact the Deputy Head of Science on her home telephone and we agreed I would drop in the books for the staff (six science teachers and one learning support assistant) at the school the next day.

The next day I therefore dropped these copies off at the school. I also posted copies to the six science teachers and the head teacher who had left during the study and to 19 of the 21 pupils in the study. (For reasons described below, two of the pupils, Mary and Liz, had their copies hand-delivered by me.) I included a hand written letter (on headed notepaper with my address, telephone number and e-mail contact details) with each book and the letters to the staff included the sentence "Do feel happy to contact me if there's anything you would like us to discuss".

That summer in my one-to-one interviews with the pupils I said to them, *inter alia*, "I wondered if there was anything you wanted to say to me about the book I sent you which contained my write-up of the five years at [Pasmoor School]". I knew that some of the pupils were looking forward to seeing the book in print and I wondered how they all would feel at its publication.

I haven't used tape-recordings during this study (for reasons which I discuss in Reiss, 2000, pp. 9-10). Instead, my interview notes consist mostly of verbatim quotations and are written up within, at most, 24 hours. All my interviews are

semi-structured and a typical one lasts for about 20 minutes and results in approximately 700 words of write-up.

Results

I describe how the book was received, first by pupils and then by teachers. Descriptions within each of these categories are given in chronological order. Pupil responses are characterised as positive, neutral and unenthusiastic.

Pupils

Positive reception

Despite the fact that I had only dropped of the book the afternoon before, Mary had read quite a bit of it by the time I interviewed her the next morning. She said that it was “really nice reading about myself. Nice reading about other people ...” and talked about how it was good “also seeing what grades” others had got [i.e. in their GCSE (General Certificate of Secondary Education) examinations at the age 16 of years at the end of school].

At the same time as I interviewed Mary, I interviewed a fellow pupil, Liz, from the USA, who had left Pasmoor School at the end of Yr. 7 – i.e. five years previously – but had kept in touch with Mary. I had phoned Mary’s home to arrange her interview and found that Liz was with them, but that she was only in the UK for two more days. When I asked Liz about the book she replied “It was like *déjà vu* – I figured out who I was from the Tippex quote [the first mention of

Liz in the book] ... I enjoyed reading it". I asked her what it felt like reading it. "There I am again. Oh my God ... weird ... seeing my life on paper".

In the interview with Nicky both her parents were present too. When I asked Nicky if there was anything she wanted to say about the book she replied "Great ... everything I said was in there ... I really enjoyed reading it ... interesting what the teachers said about me". At the very end of the interview her father reminded Nicky that she was going to ask me something and she asked me if I would sign the book for her, which I did.

When I asked Rebecca about the book she said "I thought it was fantastic ... everybody in the family's reading it". At the end of the interview she got me to sign the book.

Richard said that the book was "very good". He then asked me if his name in the book was Richard (it was). He said that it was "funny reading it from five years ago ... very, I don't know what's the word [long pause] ... quite nice that I've been" written about ... "Most of this is dead true ... it's all dead true".

Marc said of the book "Strange ... It was good though to see how I'd changed going through the years ... I showed it to one of my friends and he was surprised how much I'd changed ... I found it very interesting ... so did my Mum ... she thought it was good".

Ian's mother said of the book that she had "enjoyed it ... very interesting". The interview with Ian took place with his mother out of earshot and when I asked him if there was anything he wanted to say about the book he replied "Umm. No not really ... bit about me quite good" and he grinned. I asked what it felt like reading it. "Quite strange because a lot of it I couldn't even remember ... quite

strange". I asked whether it rang true or whether when he read it he found himself thinking 'Eh? That wasn't how I understood it?'. Ian said it was like the way I described it.

When I got to Edward's home I saw a copy of the book lying on a stool. Edward said that "It was wonderful ... I was absolutely overjoyed ... I've been looking forward to it for a long time ... I can appreciate it was a lot of work ... I must get you to sign the front". This I did at the end of the interview. His mother, who was there, told me that she had "enjoyed it" too.

When I arrived for the interview with George the copy of *Understanding Science Lessons*, well thumbed, was lying on the kitchen table. Before I got onto asking about the book George asked me if Jason and Erica [i.e. their names in the book] were X and Y [i.e. real names]. I went all coy and reminded George about why I wouldn't answer such questions. George told me that X had told him that Jason must be himself [i.e. X; in fact Jason was X but Erica was not Y]. George said that "X was ever so pleased to be in it" and cheerfully added that Jason must be X as he was the only person at Pasmoor School to have been found guilty of "attempted armed robbery". When I asked George if there was anything else he wanted to say about the book he replied "I was actually really pleased ... it's a claim to fame". I asked if it rang true. "Yeah ... I may have messed it up but I had a blooming good time".

Neutral reception

Paul said that the book was "Quite good". I asked him if it rang true and he said "Yeah. It does".

When I asked Robert about the book he said "Well, to be honest, I haven't really had time to look through it ... I've had a flick through it ... read a few pages ... it does look interesting". I asked him if the bits he had read seemed to ring true or were inaccurate. "... seems to ring true ... you'd obviously know more about people's personal lives than I do".

When I got to Catherine's home the book was on the table between us in the lounge where we always had the interviews. Catherine said "I have read through some of it quickly .. some of my science teachers didn't like me ... I've proved them wrong ... feels good".

Peter told me that he had had a look at the first 20 pages but had found a lot of the words in it "difficult". He asked me if it was "our school" and I confirmed that Pasmoor School was the one he had gone to from Yr. 7 to when he left it during Yr. 10. Peter told me that the book "made me laugh". I asked "Did it ring true?" and he replied "Yeah" but hesitantly.

Before I asked Martin about the book he asked me what his name was in the book and I told him. When I asked him about the book he said "I can't really say 'cos I haven't really read it". I asked if it was therefore too early to say if it rang true and Martin replied "So far, yeah".

When I asked Jack whether there was anything he wanted to say about the book he replied "I was Jack, wasn't I?", which I confirmed. He went on to say "I haven't read it cover to cover ... snippets ... I haven't read it cover to cover". At the end of the interview, when I was chatting with his mother on the doorstep, she asked me if I was being sued by anyone because of what I had written in the book.

When I asked Sue if there was anything she wanted to say to me about the book she replied “I haven’t actually had a chance. I’ve been so busy”.

Rodney told me “Still haven’t managed to read it because my father has got it”. He said he had flipped through it and it “seemed interesting”.

Unenthusiastic reception

When I asked Burt what he thought about the book he said “I haven’t read too much ...”. He then went and got the book and turned to page 28 and told me that he felt the bit about the bugging device made him look silly. I answered this carefully saying that often what we said when we were 11 or 12 we felt embarrassed by later – and he agreed with this.

Teachers

The first teacher I heard from was one who was no longer at the school. I got a card from her, the contents of which are reproduced in Figure 1. As she had nicely said she would like me to sign her copy of the book, I phoned her up, went round, signed it and chatted with her.

The second teacher I heard from was also one who had left the school. By coincidence I sat next to her at a railway station. She told me had been taken aback on receiving the book to read about herself in such identifiable detail. She felt anyone would be able to recognise her. Her leaving Pasmoor School hadn’t been an easy leaving and she was worried that the staff at the school would think poorly of her from reading about her in the book.

The third teacher from whom I heard was again one who had left the school. I got an e-mail from her which read:

Thanks for a copy of your study at Pasmore college. It was very weird seeing direct quotes from what seems now like a lifetime away.

My embarrassment at not talking about the students seems out of place. Perhaps I felt that way in the context of comments being made on a visit to Homerton and away from those directly involved in facilitating the students' learning.

Very interesting nonetheless. Who do you think is likely to be the main audience?

Anyway all the best with your future plans.

[Name]

The fourth correspondence I had about the book was on a different scale from all the others. I received a typewritten letter from the science teachers at the school, reproduced in Figure 2. While I had forgotten, until writing this paper, that I had received the card whose contents are reproduced in Figure 1, I can still remember well the shock I felt on receiving this letter. I spent about 90 minutes thinking about it and then responded by writing handwritten letters, one of which is reproduced (I kept a photocopy) in Figure 3.

The fifth and final correspondence I had about the book from one of the teachers was a Christmas and New Year card from another of the teachers who had left the school. He wrote:

Very many thanks for your book which I took to read in France in the summer holiday. It was fascinating reading.

Hope all is well

To Michael & family
from [name]

Discussion

There are a number of frameworks within which one can examine the reception of *Understanding Science Lessons* reported above. Here I uses three: the ethics of educational research; discourse analysis; and psychodynamic theories about endings.

The ethics of educational research

Most UK university departments of education have tightened up during the last decade or so on their procedures to do with the ethical suitability of research protocols. At my present institution, in addition to doctoral students being taught about the ethics of educational research and referred to standard readings, we have sessions about the subject for supervisors and there is a committee, which consists of the Dean of the Doctoral School and myself as a

representative of the Research and Consultancy Board, to examine any problematic cases.

All researchers at my institution have to subscribe to the ethical codes of one of the following three organisations: British Educational Research Association (BERA), British Psychological Society (BPS), British Sociological Association (BSA). I subscribe to those of BERA (available in their current form, first published in 1992, from admin.bera@btclick.com and presently out for consultation in revised form – Gardner, Pring & Lewis, 2003). Although my previous institution – where I was based when carrying out the work reported in *Understanding Science Lessons* – had no such requirement, I am relieved to note that there is nothing in the way I undertook the research which resulted in the publication of *Understanding Science Lessons* that conflicts with the BERA code of ethics: see Figure 4 which reproduces the section on ‘Responsibility to Participants’ from the 1992 BERA Code of Ethics. However, it may be that when research results in the development of long-term, entwined relationships between the researcher and those who are being researched, it is inadequate merely to abide by ethical guidelines that centre on ‘informed consent’. A broader framework of ‘respect for persons’ may be more appropriate, including sensitivity to considering how those who have been researched may feel about any publications.

From an ethical perspective, the letter reproduced in Figure 2 raises issues about confidentiality, being misled and the right of reply.

Confidentiality and being misled

My initial feeling of shock on receiving the letter in Figure 2 was followed by one of defensive self-righteousness. What, I asked, was the justification for the comments in the fourth paragraph of the letter about verbatim reporting, use of 'off the record' material and a breach of trust? As I had written in the book:

On at least the first occasion that I interviewed each participant (child or adult), I explained about confidentiality and the use of different names if I eventually wrote up the material for publication. All interviewees gave me permission to use the material for publication and many interviewees - pupils, parents and staff - discussed with me the purpose of the research and its broad findings on more than one occasion.

(Reiss, 2000, p. 10)

I had also explicitly talked with each interviewee about the fact that the use of pseudonyms would mean that while those outside of the school would not be able to identify the school and those in it, it would be the case that within the school community, including parents and pupils, individuals would be recognisable. Since I asked teachers about the pupils they had taught in practically all my interviews with them, it seemed surprising to say: "We had not expected or been led to understand, there would be verbatim reporting of comments about individual pupils". Additionally, I felt I had been generous almost to the point of being anodyne and unbalanced in *not* reporting "off the record" comments - of which there were obviously many, for example about pupils and colleagues, during five years of fieldwork.

The right of reply

As I calmed down, I admitted to myself that I could have avoided hurting those who had been hurt by the book had I followed the not uncommon procedure of showing write-ups of my interviews or classroom observations to those who were the subjects of the research as I went along. I had decided fairly early on in the research not to do this for a number of reasons. One was the well known problem that by alerting a person one is observing as to the specific focus of one's observations one risks affecting the person's behaviour. Another was that while teachers and parents could have commented on drafts, I rather doubted that some of the pupils could meaningfully have done so and I was reluctant to favour some of my subjects over others.

At different points in the study I focused on different questions. The school invited me to speak to its Gender Working Party, and at the start of the fourth year of my study I spoke to it on 'Key Stage 3 Gender Issues in Science Lessons' at the school [Key Stage 3 referring to the first three years of secondary schooling, i.e. Yrs 7, 8 & 9]. I felt I was taking the bull by the horns, and indeed taking quite a risk, since I talked about how in the lessons of many teachers boys received more attention than girls, about how most of the teachers when asked to talk about their classes talked more about the boys than the girls and about how there was a considerable amount of sexual harassment of certain girls by certain boys. I talked for 25 minutes and there were 15 minutes of discussion.

The meeting was attended, *inter alia*, by both the Head and Deputy Head of the Science Department. My field notes record that the Head of Department was "quite shaken by my talk" while the Deputy Head "felt that sort of thing [i.e. sexualised interactions between pupils] went on in everyone's lessons". I had chosen to speak as I did partly because the issues were obviously relevant to a Gender Working Party but partly because I thought that these were the parts of my research most likely to surprise or upset staff at the school. In fact the Head

of the Science Department subsequently said more than once that he would like me to talk at a Science Department meeting about teaching styles or the findings of my research, and the Gender Working Party invited me to join it, which invitation I accepted. In addition, the members of the Science Department continued to let me watch their lessons and interview them. I therefore, and with hindsight naïvely, felt that nothing I wrote of my research would be likely to be deeply problematic for the teachers.

Discourse analysis

Discourse analysis (e.g. Wetherell, Taylor & Yates, 2001; Phillips & Hardy, 2002) is a fruitful way of interpreting texts. We are all more sensitive now to the notion that there is no one definitive reading of a text and that power relationships are of central importance in both the construction and reading of texts. As I wrote in *Understanding Science Lessons*:

What I write is inevitably shaped by who I am. Had others conducted the same study I am sure their accounts would have differed from mine. That much is obvious. What is, of course, not so clear, is how greatly their accounts would have differed.

In recent years, educational researchers have increasingly, and in my view healthily, grown suspicious of those within their ranks who present a single description of events (Rhedding-Jones, 1997). We now doubt those who purport to be able to provide a single canonical version of past events. After all, as has been widely noted, history is too often 'his story' - i.e. a story told by just one person from one particular perspective. Unreflective

perspectives tend, often without intending so, to marginalise or misrepresent those who have different perspectives.

Surely it is better for me to write, instead, what I explicitly acknowledge is just one vision and interpretation of events. Whether any of the characters in this story will ever write their own autobiographical accounts of this period of their lives I don't know, but I would be so pleased if they would.

(Reiss, 2000, p. 13)

But this doesn't absolve the researcher from trying to provide all research subjects with a voice. Interestingly, it seems clear to me now that I succeeded in this to a greater extent with the pupils than with the teachers. By and large, the pupils either received the book with enthusiasm or with little emotion. Only Burt was unenthusiastic – though it is always possible that pupils were unable in my presence to voice disquiets they may have had.

That teachers react negatively to the results of educational research is hardly news. As Sara Delamont puts it:

There is a structurally tense relationship between teachers and educational researchers, just as there is between teachers and what Wolcott (1977) called 'technocrats' (outsiders who want to introduce technical change into schools). Such hostility must not be taken personally, because it is of long standing and is endemic to the occupational culture of teaching. Hostility to researchers, experts and so on is felt in most staffrooms.

(Delamont, 2002, pp. 147-148)

This rings true, though not in all situations in my experience (and I never felt any hostility to myself at Pasmoor School while I was there), and there is perhaps a

suggestion of it in the use of 'underwhelmed' in Figure 2, but doesn't go far enough for my purposes. Stephen Ball helpfully referred me to a paper of his (Ball, 1984) where he recounts how at two seminars at the school, Beachside, in which he conducted his now classic research, some teachers (including T1, below) criticised strongly aspects of his (SB's) research:

T1: I enjoyed reading it. But my first impression is, have you or anyone or should you have the right to do a sort of carve up job on a teacher ... You know. I question the right to do it on a teacher. Now you could answer that by saying we don't recognize that teacher. Am I right?

SB: I think there are two things, important things - one I don't think you should be concerned to try and identify the teacher ...

T1: ... except I do think ... this kind of research, for teachers, who are indeed in the job as a career and however much you will try and do your damndest not to harm them, it may be that you might. Now, could I ask you a question? We don't know who this teacher was - does the headmaster know who this teacher was? You don't think so. I think these are important questions, not for your research but for teachers generally, if you get their help and cooperation and you want it in the future, you and other people.

(Ball, 1984, p. 85)

This extract brings to mind my failure to think through carefully how publication (which is, after all, the making public) of my research might have felt. For carefree George, a 17 year-old, "it's a claim to fame"; even fellow student Jason, portrayed to my mind somewhat unfavourably in the book, was, according to George, "ever so pleased to be in it". For some of the teachers, though, their reactions were different; I now think for several reasons:

1. I did indeed try to produce a balanced account 'warts and all'. Many of us are more sensitive to criticism than observant of praise.
2. As I discussed in the book, there will undoubtedly have been occasions when my version of events, let alone my interpretations of them, will have differed from those of others.
3. There clearly were genuine fears, as there were for the teachers in Ball (1984), about the consequences the book's publication might have for their careers and for the perception of their capabilities by others. It seems that there was more hostility to the book from the teachers who remained at the school than among those who had left. It is also possible that a group response, such as that in Figure 2, can communicate disquiets that individuals might not express.
4. I failed to think through the loyalty some (probably the great majority) of the teachers clearly had to the school and I failed to appreciate sufficiently the collegiate nature of a good school department. Criticism, even if muted or indirect, of the school or a colleague could therefore cause real anger or distress in someone for whom all (or the great majority) of the references in the book were very positive ones.
5. I failed to consider the unconscious aspects of the research, to which I now turn.

Psychodynamic theories about endings

As Sara Delamont points out:

Researchers have to stay in the field long enough to share certain aspects of it with the participants, but not too long. Unfortunately most researchers say very little about the end of fieldwork.

(Delamont, 2002, p. 162)

My ending was different to many endings. For a start, I decided to try to continue annually to interview the pupils. I wasn't sure for how long this would be feasible but I thought it worth trying. Then I became aware during my final interviews with the parents that in a number of cases quite strong attachments had developed between us:

In a number of cases during the Year 11 interview, the parents and I found ourselves reminiscing about how the last five years had been for them and for their family. I was also surprised and, if the truth be known, rather touched at the number of parents who said they would miss my coming. But then I suppose most of us appreciate someone who takes a genuine interest in us and our families.

(Reiss, 2000, pp. 125-126)

However, I didn't write anything in *Understanding Science Lessons* about what the last interviews with the teachers felt like. Looking back at the write-ups of these seven interviews, they seem warm in tone but there are no statements about missing my coming!

There is a considerable literature in psychodynamic counselling, psychotherapy and psychoanalysis on endings. Therapists are trained to be attuned to unconscious feelings that almost inevitably attend endings. There is always a danger in interpreting the unconscious in that it can negate the importance of the conscious - 'I see you do not like me; perhaps I remind you of your parent'. At the same time, approaches to organisations (e.g. Obholzer & Roberts, 1994) as well as to individuals that take the unconscious seriously can provide more valid interpretations of feelings and events.

The golden rules for a therapist when drawing to a close with a client are to hold in mind that unconscious forces will be operating and to draw these into the open, so long as the client is not psychotic, through interpretations. In her book on endings in psychotherapy and counselling, Lesley Murdin (2000):

emphasises that it is not only the patient who needs to change if one is to achieve a satisfactory outcome. The therapist must discover the changes in him/herself which are needed to enable an ending in psychotherapy.

(Murdin, 2000, back cover)

I cannot be sure but for the authors of the letter in Figure 2 I feel that it may have appeared, at least unconsciously, as if I came to their school, contributed nothing to it and then told tales about them for my benefit and at their expense. Had I ended better some of these feelings might have been aired and this would have allowed (a) for them, at least partly, to have dissipated; (b) for me to have taken account of them in writing the results of my research.

Correspondence: Michael J. Reiss, Institute of Education, University of London, 20 Bedford Way, London WC1H 0AL, UK. m.reiss@ioe.ac.uk

Acknowledgements

I am grateful to Hanna Arzi, Jenny Chapman, Russell Tytler and Rick White for valuable comments on an earlier draft and especially to the pupils, their parents and the staff who allowed me to conduct this study.

References

- Ball, S. J. (1984). Beachside reconsidered: reflections on a methodological apprenticeship. In R. G. Burgess (Ed.), *The research process in educational settings: ten case studies* (pp. 69-96). London: Falmer Press.
- Delamont, S. (2002). *Fieldwork in educational settings: methods, pitfalls and perspectives, 2nd edn.* London: Routledge.
- Gardner, J., Pring, R., & Lewis, A. (2003). Ethical guidelines for educational research: draft for consultation among members. *Research Intelligence*, 82, 2-9.
- Murdin, L. (2000). *How much is enough? Endings in psychotherapy and counselling.* London: Routledge.
- Obholzer, A., & Roberts, V. Z. (1994) (Eds). *The unconscious at work: individual and organizational stress in the human services.* London: Routledge.
- Phillips, N., & Hardy, C. (2002). *Discourse analysis: investigating processes of social construction.* Thousand Oaks, California: Sage.
- Rhedding-Jones, J. (1997). The writing on the wall: doing a feminist post-structural doctorate. *Gender and Education*, 9, 193-206.

- Reiss, M. J. (2000). *Understanding science lessons: five years of science teaching*.
Buckingham: Open University Press.
- Wetherell, M., Taylor, S., & Yates, S. J. (2001) (Eds). *Discourse theory and practice: a reader*. London: Sage.
- Whittier, D. K., & Simon, W. (2001). The fuzzy matrix of 'Ms Type' in intrapsychic sexual scripting. *Sexualities, 4*, 139-165.
- Wolcott, H. F. (1977). *Teachers versus technocrats*. Eugene, Oregon: Centre for Educational Policy and Management, University of Oregon.

July 26th. 2000.

To Michael

With many thanks for the copy of your most interesting book. The detail is amazing and brought back so many memories!

I should be delighted if you could sign my copy sometime - it's so difficult to believe that I was once part of that life. The progress, home environment and ambitions of the pupils was fascinating and this work will be greatly appreciated in both schools and homes. Congratulations and 'thank you'.

[Signature - her real name and then her pseudonym followed by !]

Figure 1. The first feedback I received from a teacher - a card from one of the teachers who had left the school.

[School name]

[School address]

5/10/00

Dear Michael,

Thank you for the copy of your book 'Understanding Science Lessons'. We discussed the book at some length in our first department meeting and I thought that you might be interested in our response.

The format of the book was one with which we were unfamiliar and were not expecting. We expected to find a greater degree and depth of analysis of the data that you had collected and many of us found that the anecdotal approach and selective reporting of quotes made it hard to see many findings that went beyond that which we could have generated with discussion as a group of teachers. You may well regard that as a vindication of the approach or a reflection of our understanding and ability to articulate the issues that we face in teaching science or our overly high expectation of what might emerge from a study of this nature.

Throughout the book you make many positive and encouraging remarks about the experience of science that we attempt to provide pupils with and it was interesting to read parental and pupil views of science education. It was pleasing to receive some affirmation of the value of our efforts. At the same time some of your observations raised interesting questions for us. But, whilst you very carefully discuss the issue of objectivity in the study there are some aspects of the way in which the book is presented that have caused us some disquiet.

There were very strong and consistent concerns expressed about the approach of the book in relation to confidentiality. Our understanding of "confidential" in relation to the study was clearly wrong. The background information on individual

teachers is so specific and detailed as to make clear to a "local audience" (parents, trainee teachers in school etc.) the identity of individuals. We had not expected or been led to understand, there would be verbatim reporting of comments about individual pupils. Staff spoke to you in a manner and using language that we would regard as "off the record" and may have included opinions that would be phrased in ways that were not intended for public consumption. To find them directly reported and quite easily connected to the person who made them was a shock and we would have expected this to have been made clear to us at the outset. We did not expect editorial control over your publication but we do feel misled. Indeed colleagues commented that they felt "hoodwinked" and "there had been a real breach of trust".

You are very clear in the book that it is a subjective selection of events and comment which you have chosen to illustrate the five years of the study. Whilst this approach may have validity, there are events reported which are inaccurate and, because they are based on the opinions and perceptions of one individual, misrepresent events and, we believe, reflect unfairly on this department and school. Specifically, the references to the departure of "James Western" left us astounded. Having discussed it at length with him you never sought to verify the details of events surrounding it, but felt strongly that it should be referred to in print. The circumstances pertaining to the event meant that no one in this department was in a position to discuss the matter publicly, nor would we have wanted to. The impression you create in the book reflects very unfairly on this department and the ways in which people handled the events. Likewise the reporting of the refusal to extend "Emma Harris's" maternity leave. The school could not legally do this and the reasons for her request for an extension related to completing a masters degree. This went unreported as did the fact that this would have meant there being no proper coverage of the Head of Biology post for the best part of two years. Finally, you have reported the comments of parents that the department is only interested in high achieving pupils. Whilst they have the right to such perceptions I would challenge their validity given

scrutiny of the results we consistently achieve with pupils, across the whole ability range. Yet they remained, unchallenged either by comment or presentation of fact.

These are three examples that elicited strong reactions, there were others, but in all cases we feel that it would have been only fair to present at least evidence or comment or analysis which would allow the reader to arrive at a balanced judgement of events. It may be our ignorance of the approach that you have adopted that leads us to have difficulties with what is presented in places but were we naïve in expecting that what appeared in print would be accurate and substantiated? Identifying three instances in a study of such magnitude may seem pedantic but for all of us there is a strong sense of the need for accuracy in order to maintain credibility.

We never entered into this process with the view that the end result would be a glowing tribute to this department. We all knew that we would be seen "warts and all" and that the findings would reflect the full range of the quality of experience that pupils have. We hoped that we might contribute to a better understanding of science lessons and through that facilitate our own development as a group of science teachers. Having debated the book conscious of the need not to view it defensively or on a purely personal level, we have come away from it feeling in parts misrepresented, misled and underwhelmed.

I am sure that you have expected a response to the book and would be interested in our reactions. It has taken some time to reply simply due to the need to talk to a variety of individuals and so this letter reflects our collective, rather than individual reactions.

We wish you well with your future projects,

[Seven signatures]

Figure 2. The letter from Pasmoor School science department to me after they had received the book.

[Homerton College, Cambridge headed notepaper]

6/10/00

Dear [First name of Head of Department],

I've been feeling awful ever since I got the Science Department's letter about "Understanding Science Lessons". Everyone was always so helpful to me that the last thing I wanted to do was to upset or hurt anyone.

I don't know how sensible it is for me to respond to the three specific points made in the middle of the letter but (a) nothing I put in the book (specifically the two paragraphs on page 98) about "James Western" was meant to reflect badly on the Science Department and I apologise unreservedly for giving this impression; (b) I similarly apologise unreservedly for inaccuracies about "Emma Harris"'s departure. It is, of course, perfectly possible that I misunderstood what she told me; (c) the quotes on page 146 are about parental views on the school as a whole. I'm extremely sorry if they are taken as comments about the Science Department.

Perhaps the much more important point, though, is the way people in the Department felt misled - particularly with regards to my citation of remarks that it was not anticipated would emerge in print and to the fact that, as you validly put it, to a "local audience" individuals can be identified.

I'm afraid I can rather imagine that none of you ever want to see me again, but if the Department would like me to come in (e.g. to apologise at a Department meeting) I will, of course, do so. Should you, [first name], wish to 'phone me I can probably be contacted most easily at home (evenings & weekends) on 01223 262958.

I've written much the same letter to each signatory to the letter.

Yours,

Michael

P.S. Was there a signature I failed to read? I've written to [names of five other teachers I knew were still in the Science Department] and yourself.

Figure 3. One of my replies to the letter from Pasmoor School science department to me after they had received the book.

RESPONSIBILITY TO PARTICIPANTS

1. Participants in a research study have the right to be informed about the aims, purposes and likely publication of findings involved in the research and of potential consequences for participants, and to give their informed consent before participating in research.
2. Care should be taken when interviewing children and students up to school leaving age; permission should be obtained from the school, and if they so suggest, the parents.
3. Honesty and openness should characterise the relationship between researchers, participants and institutional representatives.
4. Participants have the right to withdraw from a study at any time.
5. Researchers have a responsibility to be mindful of cultural, religious, gendered and other significant differences within the research population in the planning, conducting and reporting of their research.

Figure 4. Section on 'Responsibility to Participants' from the British Educational Research Association Code of Ethics (available from admin.bera@btclick.com).