PART TWO

HOW DO I IMPROVE THIS PROCESS OF EDUCATION HERE?
AN ENQUIRY INTO LIVING CONTRADICTIONS, EDUCATIONAL RESEARCH
METHODOLOGIES AND LIVING EDUCATIONAL THEORIES.

2.1 Narrative

I now want to go back from my 1999 paper above to 1977, with my first publication in a Journal of Education. This provides a baseline for judging the living standards of originality and critical judgement which have emerged through the 22 years of publications. I am thinking about my living standards as I explore a distinctively 'educational' research methodology and develop the idea of living educational theories.

Before you engage with the papers I want to clarify a methodological question. The question is whether there is an 'educational' research methodology, which can be distinguished from social science methodologies, for enquiries of the kind, 'How do I improve this process of education here?'.

In my initiation into the disciplines approach to educational theory with Richard Peters in 1968 at the University of London, it was held that the first step in answering a practical educational question was to break it down into its component parts. These separate components were to be informed by contributions from the disciplines of education and integrated back into the solution of the practical problem. Educational research methodology, like educational theory, was seen to be derivative in that it was constituted by the methods and conceptual frameworks of the philosophy, psychology, sociology and history of education.

My rejection of this approach to educational research methodology was based on an analysis of nine research reports I produced between 1970-1980. I analysed my own education as my learning moved on through the reports (2.3, 80). I gave the following explanation for my own educational development:

3   I experience a problem because some of my educational values are negated
4   I imagine a solution to my problem.
5   I act in the direction of this solution.
6   I evaluate the outcomes of my action.
7   I modify my problems, ideas and actions in the light of my evaluations.

I was clear about the existence of 'I' as a living contradiction (2.3, 75-76) in my question and answer.

The originality of mind which distinguished this basis for an 'educational' methodology from social science methodologies emerged from an initial satisfaction and then a tension as I applied Mitroff's and Kilman's (1978) classification of social science methodologies to my enquiry. In his autobiography of research in four world views, Allender (1991) uses the Mitroff and Kilman classification in a similar way to myself and states:

A model of scientific world views that has received little attention but is probably the most comprehensive, is based on the Jungian framework (Mitroff and Kilman, 1978). Two dimensions - one ranging from sensing to intuition and the other from thinking to feeling - are used to form a four-quadrant typology: 1) the analytic scientist, 2) the conceptual theorist, 3) the conceptual humanist, and 4) the particular humanist. The typology is proposed as a complete universe into which all research orientations can fit. (Allender, 1991, p. 14.).

The typology can be represented as follows:

Sensing

Analytic Scientist | Conceptual Theorist

Thinking ————————————————— Intuiting

Conceptual Humanist | Particular Humanist

Feeling
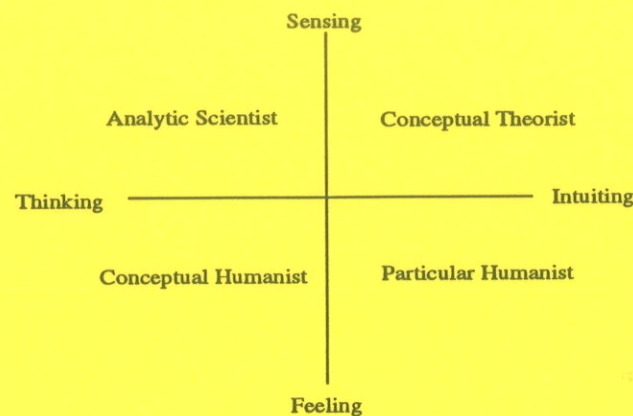
**Mitroff's and Kilman's methodological
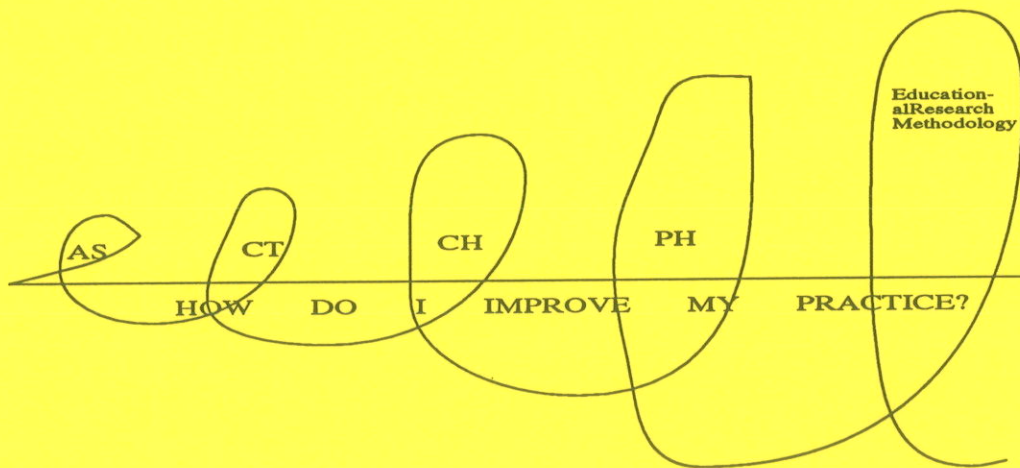approaches to the social sciences**

Each methodology was distinguished by differences between its preferred logic and method of enquiry. The full details of my analysis are in 'A Dialectician's Guide for Educational Researchers' (3.2, pp. 61-67).

As I applied the above typology to the nine reports in my enquiry (2.3, p. 80), I felt a similar kind of satisfaction to the one I felt in 1968-70, when studying and accepting the disciplines approach to educational theory. I felt that I had a comprehensive model for understanding my methodological approaches to my enquiry. I could understand my 'educational' enquiry within the preferred logics and methods of enquiry of an analytic scientist, a conceptual theorist, a conceptual humanist and a particular humanist (3.2, pp. 62-63).

I then began to feel uneasy because one of my reports appeared to fall outside the classification. This report was a story of my educational development as I moved through the four methodological approaches to the social sciences. Whilst using these methodologies I was still taking the first step of the disciplines approach and breaking my

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question up into component parts. I was not seeing that I could hold my enquiry together with an 'educational' methodology which had its own preferred logic and method of enquiry.

It may be helpful if I represent the emergence of my 'educational' methodology in terms of a spiral. This stresses its living and dynamic nature. I have drawn this freehand to stress that the development is 'ragged', sometimes fragmented and anything but 'smooth'!

I move through the four methodological approaches to the social sciences into the creation of the fifth 'educational' methodology (EM) for enquiries of the form, 'How do I improve my practice?':

i) I experience a problem because some of my educational values are negated

ii) I imagine a solution to my problem.

iii) I act in the direction of this solution.

iv) I evaluate the outcomes of my action.

v) I modify my problems, ideas and actions in the light of my evaluations.

Looking back some twenty years I can recall with some humour the responses by other scholars to my insistence that the personal pronoun, my 'I', could be included in a question worthy of research. Yet, I know of a recent case where a university research committee have asked for the personal pronoun to be removed from an action researcher's question! From the basis of the above answer to my question I began to focus on my practice as an educational researcher whose primary focus was the reconstruction of educational theory.

The paper *'An analysis of an individual's educational development'* (2.4) marks the redefinition of my view of educational theory:

"My purpose is to draw your attention to the development of a living form of educational theory. The theory is grounded in the lives of professional educators and their pupils and has the power to integrate within itself the traditional disciplines of education." (2.4, p. 97)

Rather than being constituted by the philosophy, sociology, psychology and history of education, I now see that it can be constituted by the claims of professional educators to know their own educational development. The epistemological enquiries into my claims to know are focused on the nature of the critical standards which can be used to test the validity of the claims to knowledge:

"Questions concerning the academic legitimacy of a claim to knowledge are often focused upon the criticism of a particular piece of work. The work being criticised can be a single hypothesis or theory (Popper 1972) or a research programme (Lakatos 1972). Whatever is being criticised is known as the unit of appraisal. In criticising a claim to knowledge it is important to be clear about the unit and the standards of judgement which can legitimately be used in the criticism. There is some dispute amongst philosophers about the nature of the standards which can be used to criticise a claim to knowledge.

The unit of appraisal in my conception of educational theory is the individual's claim to know his or her own educational development. Although this unit may appear strange to most educational researchers I think that it is clearly comprehensible. The standards of judgement are however more difficult to communicate. I use both personal and social standards in justifying my own claims to know my own educational development. (2.4, p. 99)

My enquiry then moves on in the paper on *Creating a Living Educational Theory* (2.5) into a fuller exposition of the central concerns of my thesis as a whole:

"In a living educational theory the logic of the propositional forms, whilst existing within the explanations given by practitioners in making sense of their practice, does not characterise the explanation. Rather the explanation is characterised by the logic of question and answer used in the exploration of questions of the form, 'How do I improve my practice?'.

In developing such an approach I have had to come to terms with questions concerning an appropriate methodology for enquiries such as 'How do I improve this process of education here?'. In looking at video-tapes of my practice I have had to confront questions which arise on recognising the 'I' in the question as existing as a living contradiction. In the production of an explanation for my practice I have had to question how to include and present values whose meaning can only be clarified in the course of their emergence in practice. I have had to face questions related to validity and generalisability. I have also had to question the power relations which influence the academic legitimacy of a living educational theory. In such a short article all I can do is outline the present state of my thinking in relation to these questions." (2.5, p. 43).

The four papers which follow are:

2.2 (1977) Improving Learning in Schools – An In-service problem.

2.3 (1983) Assessing and Evaluating an Individual's Higher Education.

2.4 (1985) The Analysis of an Individual's Educational Development .

2.5 (1989) Creating a Living Educational Theory from Questions of the Kind, 'How do I improve my Practice?.

2.2

Whitehead, J. (1977) Improving Learning in Schools - An In-Service Problem,

British Journal of In-Service Education, Vol.3, No.2, pp. 104-111.

British Journal of In-Service Education

Improving Learning in Schools — An In-Service Problem

Jack Whitehead
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A central function of in-service education is to improve educational standards within schools. There are, however, few case studies which show how particular forms of in-service support have influenced improvements in classroom practice. The case study below describes how the in-service support from Bath University Science Centre influenced improvements in learning for 11-14 year olds in mixed ability science groups.

The Form of In-Service Support

In February 1974 the following form of in-service support was offered to science teachers from Bath University Science Centre. "If four or more members of a department wish to move towards enquiry learning a tutor will attend weekly or fortnightly meetings at a school to plan syllabuses and particpate in the production of resources. For schools with one or two members of staff interested in specific curriculum changes we will organise meetings with teachers from three or four schools. We also hope to develop an evaluation service with you. This will entail video taping, interviews, and practical problem solving situations with each other and the pupils".

Bulletin No. 1
Bath University Science
and Technology Centre

This form of in-service education was based upon the following assumptions

1) Teachers could isolate the problems they experienced when they were not living their intentions in practice.
2) Within the science teachers' intentions was a view of scientific thinking which accepted that asking questions was a necessary component of this type of thinking.
3) Teachers needed easy access to resources which would help solve their problems.
4) Teachers could evaluate the contradictions between intentions and practice when presented with objective evidence. Evaluate, that is, in terms of the relations involved

in the transformation of intentions into practice.

1. Isolating the Problems

In February 1974, a group of 6 science teachers from 3 comprehensive schools discussed their problems with a lecturer from the Bath Science Centre and committed themselves to work together to design, produce, organise and evaluate enquiry learning situations for 11-14 year olds in mixed ability groups.

The lecturer taped conversations with the teachers in which they explored their intentions, what they were doing in practice and what they could do about the differences, with the following results.

A) The Teachers' Intentions

The teachers intended to establish a learning situation in which the pupils gained an understanding of science, as a body of knowledge, a way of solving problems and a creative activity in which knowledge was generated. In relation to science as a creative activity they intended to create an atmosphere in which the pupils experienced freedom, trust and security to express and pursue personally and socially valued scientific enquiries.

B) The Teachers Classroom Practice

In practice, the teachers found themselves attempting to convey the same scientific body of knowledge to pupils of different abilities at the same time. They were aware of addressing the middle ability group and "missing" the more and less able. They were conscious that the relations or resources which would give the pupils the opportunity to pursue their own scientific enquiries did not exist.

C) What could be done?

At a meeting in March 1974 the teachers agreed that the most urgent problem was the design and production of independent learning resources. These resources would allow the pupils to work at different rates with some degree of freedom, choice and independence. The account which follows, describes how a network of in-service support has evolved, between educational institutions, in response to the teachers'

problems. This network involves giving the teachers access to the resources of:

1) The Schools Council, Wiltshire LEA and Bath University.
2) The Association for Science Education and Independent Learning in Science.
3) The Avon Resources for Learning Unit.
4) The Department of Education and Science.

This account is followed by examples of how a particular process of evaluation influenced improvements in teachers' and pupils' practice.

II   Access to Resources

(1)   The Schools Council, Wiltshire LEA and Bath University.

By the end of April 1974 it was obvious to the group that the increasing need for paper, duplicating equipment, secretarial, teacher and lecturers' time could not be met within informal procedures. As the Schools Council had expressed its commitment to support local curriculum development projects, £6000 was requested for teacher secondment, resources and reprographic assistance.

The initial draft proposal was drawn up by the lecturer and submitted to the teachers and LEA advisors for criticism and amendment. The final proposal was submitted by the lecturer to the Council with a letter of support from the C.E.O. of Wiltshire LEA. The Head of the School of Education at Bath University agreed with LEA officials that the lecturer should direct the project on a one day a week secondment.

The process of formalising the in-service procedures nearly resulted in the abandonment of the project. When the procedures were informal, and improvements resulted from personal commitment rather than institutional role expectations, the teachers worked co-operatively, yet critically, in secure and trusting relations.

As the procedures began to be formalised, LEA advisors came to watch rather than participate and the teachers became so uneasy that productive activity nearly stopped between June '74 and January '75. In January 1975, however, the Schools Council formalised its support and other teachers began to attend meetings and share their resources. A second group of teachers formed in Salisbury in April 1975 in the same way that the Swindon group formed in February '74. This process of growth has continued.

(2)   The Association for Science Education and Independent Learning in Science (ILIS)

Between September-December 1973 the members of Independent Learning in Science contributed copies of their resources to the Science Centre at Bath. These resources were extremely valuable in stimulating the teachers' imagination to see ways of improving standards in their mixed ability science groups. This resource collection has been used extensively by science teachers in the area and the decision of the Association for Science Education to form a joint ASE/ILIS collection of Resources for mixed ability teaching, has made the resource collection at Bath University the most comprehensive in the Country.

(3)   The Avon Resources for Learning Development Unit (RFLDU)

This Unit is a teachers' co-operative, planned, managed and operated by teachers for teachers. The aim is to produce an organisation to promote independent resource based learning in secondary schools, by making available a wider selection of resources than teachers could hope to produce individually for themselves. The Science Editor of the Unit has, from September 1975, played an active part in the Swindon and Salisbury groups, helping with design problems and producing workbooks of very high graphic design and reprographic quality.

(4)   The Department of Education and Science.

Financial support from the Schools Council finishes in August '76. In order for the work to continue the local inspectors of the DES have accepted in principle that they will finance a one year in-service course of some 80 hours duration entitled "Improving learning for 11-14 year olds in mixed ability science groups". This course is based on the formation of working

groups of teachers in a similar process to that described above. Of crucial importance to the form of in-service support offered, to teachers, from Bath University, was the creation of the process of evaluation described below.

III The Process of Evaluation

The process of evaluation was based on the third assumption above that teachers could evaluate the contradictions between their intentions and practice when presented with objective evidence. When the first drafts of the workbooks were produced by individual teachers they were criticised and modified at fortnightly intervals. The modified materials were typed onto Gestetner Skins in the Science Centre and class sets were reproduced in each school for trial. The lecturer visited schools once a fortnight to observe the classrooms video tape and interview the pupils and teachers. The video tapes were viewed either immediately after the lessons or at the next meeting of the working group. Transcripts of the interviews on the teachers' intentions and pupils' interpretations were given back to the teachers within a fortnight.

The following example illustrates how the process of evaluation provided a basis for improvement for Roger Barrow, a science teacher in Wootton Bassett School.

A) Roger Barrow
STATEMENT OF INTENTIONS

i) Roger: Well, I was concerned with the fact that most of my teaching was being pitched in the middle of the ability range and I wasn't really catering for individuals. I also had the problem of designing courses for teachers who are not specialists in particular fields. In the first instance I feel we must produce good work schemes which increase the teachers and pupils confidence. When we have built up our understanding of this situation we can then move on to the second phase of responding to the learners questions.

Jack: You see the vital thing is getting the kids to ask questions?

Roger: I'm not sure everybody agrees. I feel that so much of what has happened in Science Teaching has been a dull simulation, jumping through hoops at the appropriate moment at the command of the teacher or the examiner. I've come to realise over a period of time that we were chaining any creativeness and inventiveness in science. I know someone has to work through all the permutations and combinations but I think we have got to open out the possibilities for originality. I think so much of what we do in science is forced on us by exam syllabuses and kills all expression of opinion or development of ideas.

Jack: I can see what you are getting at but I'm curious how you came to these ideas and how you are going to create the situation to make it possible for your pupils.

Roger: I came from a very rigid grammar school where I was very dissatisfied with what was happening. I went into the comprehensive system with the hope that I would find greater freedom and a greater concentration on the needs of the individual. The first step is creating the learning situation I believe in was to move over to this more individual approach because then you can respond to the kids and if they ask a question you can say, "go on and try it".

Jack: Have I understood, when you are face to face with your pupils you are struggling in your relationship with them to help them be creative in the sense that they can ask questions and you must try and show them resources which can help in their enquiries.

Roger: Yes, that's right. The individual teacher is a vital part of the process. Recently we had four teachers on the same scheme. I suppose because I had a large hand in writing the scheme I somehow got a better relationship with my class. I don't know what it is but it's a different relationship to some of the others who were struggling with the materials.

B) Pupils Rresponses

(i) One of Roger's pupils was interviewed by Jack Whitehead:

Jack: What kind of things did you do yourself?

Paul: Well, we got all the apparatus and put it up ourselves and poured in the mixtures ourselves and we did, Mr Barrow just helped us a little bit, if we were stuck.

Jack: Really, yes. Did you ask any questions about the way you were doing this?

Paul: No.

Jack: You didn't. You just did it?

Paul: Yes.

Jack: But where did you get your ideas from then, if it didn't come from you?

Paul: Well, Mr. Barrow had a little talk with us in the beginning and then he got all our stuff out for us and we put it up and we went to go and get it and then we did our experiments.

Jack: I see. As you were doing the experiments did you have any ideas of your own that you wanted to test?

Paul: No.

Jack: I see. And if you've got questions of your own, like when I put that in front of you, you said, you know, I've tried to separate it, is that because when you're given substances like this, you were told how to separate it or not?

Paul: Mr. Barrow helped us a little bit.

Jack: Yes.

Paul: And he told us if we were doing things wrong. If we did we started again.

Jack: Yes. The thing I want to try to find out is do you have any ideas of your own that you'd really like to think about and test out.

Paul: No, not really.

Jack: You don't?

Paul: No.

Jack: What do you think scientists do? Do you think all their problems are always given to them or do you think that some scientists really try to think out ideas of their own.

Paul: Yes.

Jack: Which one do you think?

Paul: That they try to think it out themselves. Trying to make things that can help people, medicines or something.

(II) Roger interviewed his own pupils.

Roger: You remember that, and you had to try to save water yourself didn't you? Yes?

Tracey: Yes.

Roger: Well, what did you do to stop it evaporating away?

Tracey: We put a dish on the top of a beaker with water in it and put ice in it.

Roger: Oh, yes. Why did you get that idea?

Tracey: I'm not quite sure.

Roger: You're not quite sure. Did you see other people doing that?

Tracey: No.

Roger: Or did you work it out for yourself?

Tracey: No.

Roger: How did you get it then? You just don't remember.

Tracey: You told me.

Roger: I told you! Deary me. That's the second person who's said I told them, been splitting obviously. What was the ice doing then?

This process of evaluation has highlighted to Roger Barrow the gap between his intentions and his actual classroom practice. Roger modifies his approach with the following result.

Roger: Now what I want to do is just ask you one or two questions about what we've been doing in science this term. First of all what did you do, what were you expecting when you discovered that you'd got science on your timetable? Did you have any idea

what you would do?

Boy: No, not much. Well, some that we did in our other school was very different.

Roger: I see, what was different about it?

Boy: Well, it was more set, you know, they did more for you instead of now you have to do more for yourself.

Roger: You feel you've had to do more for yourself?

Boy: Yes.

Roger: Have you enjoyed doing more for yourself?

Boy: Yes. It's the independence of it . . .

Roger: The independence of it you enjoy?

Boy: Yes. Discovering the actual thing with nobody telling you what's going to happen.

Roger: You really enjoyed that did you?

Boy: Yes, that's what I liked about it.

Roger: You really liked that? Oh, splendid.

Finally, Roger Barrow attempts, in dialogue, to make sense of his experiences.

Jack: How far do you think that the basic ideas that we are working with are feasible?

Roger: Well, I think the questions pupils ask fall into three categories, there are those who are asking a shallow, trivial question for the sake of asking a question, or because sir said they were to think about some questions on the topic; there are those who ask a question quite seriously but are totally lacking in the ability to follow through their question with any sort of mature thought about it because the questions they've asked require some kind of thought and therefore they need guidance. This is where they need a resource, something you can put into their hand, at least to start them. This is the biggest problem with any project, getting them going. Once you've started the lesson off, or particularly the project overall off, then one can spend time in individual groups, one can then help them. Now the third group asks serious questions and are capable of following them through, like Ian and Gary with that plastic stuff. They were capable of a very mature level of thinking and the way they faced up to the problems they met en route was exceedingly encouraging.

This example shows how the evaluation process has helped a teacher to appreciate the varying reactions of children to learning situations, and therefore to a modification of his behaviour in a direction which is most likely to lead to the practical realisation of his intentions.

The above form of in-service support for teachers has been described in terms of the teachers problems, access to the resources of different institutions and a process of self-evaluation. The claim that this form of in-service support has influenced improvements in practice is based on the following evidence. This evidence clearly demonstrates how learning has actually taken place within a classroom where the children were working on a series of experiments highly structured by worksheets. The majority of the class could continue their activities with a minimum of supervision from the teacher. This allowed the teacher the opportunity of fulfilling the role of "consultant, advisor or tutor".

It allowed the process of self-evaluation to occur in dialogue between a teacher and small groups of learners.

Four second year girls were measuring the acidity or alkalinity of lead monoxide (a fine orange powder) by adding drops of indicator (a green liquid) into a mixture of the powder and water. One pair obtained an orangy-red liquid indicating an acid and the other pair obtained a blue liquid indicating an alkali. They went to the teacher, formulated their problem, "We got different colours" and received permission to continue work to solve their problem.

By the end of a double lesson they succeeded, after three failures involving highly creative work, to obtain the same blue colour indicating that lead monoxide is alkaline.

Teacher: What was important about what you were doing?

Tracey: It's just that, well, when we got different answers, we couldn't see why we got different answers and so we wanted to get them so that they were the same.

Judith: We were excited . . . It would have been better if we'd had longer.

Teacher: I mean, why was what you did so valuable? What was its value to you?

Judith: I suppose it was our own little discovery.

Denise: We achieved something . . . we don't normally get so interested in lessons, but this-time we just got interested because we wanted to find out the answer to it.

Teacher: Was it the answer, the so-called answer that was important or was it something else?

Tracey: Well, we was very pleased when we got the right answer, but I don't know . . . well, every other experiment that I do is normally a complete flop and, well, this one seemed to be going quite well and so I got really interested in it.

Teacher: But for someone coming into the room, your experiment would have seemed *more* of a flop than the normal. Do you understand that? They would have seen one of you with a blue colour and one of you with an orange colour and said 'Well something has gone wrong . . . do it again . . . it's not right'. In fact it would have seemed a complete flop.

Tracey: Well, it came out of a . . . well, it wasn't exactly a flop, but it was more or less, but the reason was . . . it started off with a flop and we got it to a good experiment. Well, I thought it was.

Teacher: What do you feel you created in this room?

Sandra: Noise!!!

Judith: I suppose, you know, the atmosphere was, we were just getting more excited after it didn't work twice, so, you know, we just kinda, well when the teacher come into the room and saw it was a flop, I don't think I could have seen it as a flop, because it was, you know, just a discovery which you wanted to take further. So if they saw it as a flop then I can't see why.

And subsequently:—

Judith: Well, I suppose really it was that we were doing an experiment off our own bats, and it was working was the most important thing because it was our achievement and not prompted by the teacher and it wasn't what everybody else was doing, so it was different and so we enjoyed it more than we would have before.

Teacher: Are there any questions that you want to ask me?

Judith: Well, in the next lesson, can we carry on?

Sandra: Yes, 'cos we didn't find out why. All we did was we finished the experiment, you know, just got the result the same, but we didn't find out why!!!

Teacher: Right! Yes. That's what you want to do. That would be good, you know, to find out what it was that made the lead monoxide go, on the one hand blue and on the other hand red.

> The dialogue shows how the evaluation process has encouraged the formulation of a new question; A sudden realization that another problem has arisen to which they were personally committed.
>
> This personal commitment to the solution of a question which they had formulated produces a huge leap in their understanding of the scientific process, in their motivation and in the understanding of the concepts of acids and bases.

They continue their investigation:

Teacher: Denise, can you tell me about the experiment you are doing today?

Denise: Well, I get two test tubes, but I *don't* fill them up with the same amount

of water and I measure up the *same* amount of lead monoxide, one spatula, and 7 drops of indicator. Tracey uses dirty test tubes, Sandra uses exactly the same amount of water but different amounts of indicator but the same amount of water and lead monoxide.

They say that the results might have been wrong the first week, for one of four reasons:
1. They used different amounts of water.
2. They used different amounts of lead monoxide.
3. They used different amounts of indicator.
4. They used dirty tubes.

The experiments they devise use a sophisticated technique called "a controlled experiment" where one variable (i.e. amount of water) is altered while all other factors are kept constant. This concept is notoriously difficult for a major proportion of children at this age when taught in the more conventional ways.

They obtained their results.

Teacher: Now you've said "It's nothing to do with the amount of water, it's nothing to do with the amount of lead monoxide, or with dirty tubes, or the amount of indicator. In fact it doesn't seem to be to do with anything that you've tested.

Sandra: No.

Teacher: Now what do you think was different about the experiment that you did last week which makes it different to the experiment you did this week?

Tracey: Well I suppose what we could try, sir, is that we could have say, different amounts of water in the test tubes *and* different amounts of lead   monoxide and dirty test tubes and see whether it was all four of them.

They are saying "It wasn't one factor on its own that made the difference but it could have been caused by all these factors acting together!

Teacher: Yes, that is certainly true. It could

have been. What about this idea. The lead monoxide should turn indicator a blue colour, but last week you had one tube that went red. Could it have been a dirty test tube which had had acid in it?

Tracey: Wouldn't it go neutral, because a certain amount of acid and a certain amount of alkali in there . . . shouldn't it turn neutral, but we didn't. We got a very strong acid and one got a very strong alkali.

Teacher: You think about that.

Sandra: I don't get what you mean.

Tracey: I thought about it before I asked you!

Teacher: Well, think about it again. Sandra, you don't understand what we are driving at, do you?

Sandra: No.

Teacher: The mistake might have occurred last week because you had a dirty test tube and it had acid in it already. Now what would happen if you did all this in a test tube which was dirty to begin with, with a bit of acid. What might happen?

Sandra: What . . . what, you mean if we did an ordinary experiment and it turned acid and then we tipped it out without washing it, do you mean?

Teacher: Mm.

Judith: Well then it would turn acid wouldn't it.

Tracey: Well no, it wouldn't. If you have got lead monoxide and that's, well we found out it was a very strong alkali. A strong alkali and a strong acid is going to make neutral isn't it?

Teacher: Well it depends . . .

Sandra: You've got to have virtually the same haven't you.

Teacher: Yes it's a balance isn't it.

Sandra: Tracey said if you had a strong acid and a strong alkali — would make a neutral, but how is Tracey going to know how much

acid is in there to add the same amount of alkali?

Teacher: Good point.

Judith: If we use a syringe, then we could put exactly the same in, so we know that it's balancing, or we know if it's stronger or weaker.

Sandra: But we don't know how much acid is in there.

A minute ago Sandra didn't understand the problem the other girls were raising. She has now grasped the idea of 'acids cancelling out alkalis' and of her own accord is appreciating the idea of balancing out different quantities of acids and alkalis whose "strength" is unknown. A giant leap.

Conclusion

The form of in-service support offered to teachers from Bath University Science Centre has influenced improvements in educational standards in 11-14 year old mixed ability science groups. This form of support has emerged from an exploration of the 4 assumptions above. These assumptions are related to enquiry learning, teachers isolating their own problems and evaluating their own practice and an easy access to resources. The resources included the objective evidence on which the teachers evaluate the contradictions between their intentions and classroom practice.

The above form of in-service education is not offered as a blueprint for improvements in classroom practice. The improvements occur through the creative power of individual teachers to transform their own situation. The above form of support is one attempt to respond helpfully to the problems of those teachers who are involved in their own local curriculum development.

2.3

Whitehead, J. (1982) Assessing and Evaluating an Individual's Higher Education, *Assessment and Evaluation in Higher Education*, Vol. 7. No.1, pp. 74-83.

ASSESSING AND EVALUATING AN INDIVIDUAL'S
HIGHER EDUCATION

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ABSTRACT

My purpose is to raise a number of questions concerning the nature of what is being assessed and evaluated by the contributors to this Journal. I also wish to challenge a number of the assumptions concerning the concept of Higher Education which is implicit in the work of these contributors.

I will be arguing that important dimensions of Higher Education are being omitted from the Journal, not because they do not concern the contributors, but because of the prevailing view of knowledge in institutions of Higher Education. My particular concern is that the aesthetic dimensions of the concept of Higher Education are omitted from the Journal. I am thinking specifically of the quality of human relationship in education within which the unity of humanity is not violated.

Introduction

Brewer and Tomlinson (1, p.152), in "The use of learning profiles in assessment and in the evaluation of teaching", make the point that:

> "A fundamental problem of psychology as applied to education is the measurement of learning. Cognitive learning is usually measured by testing performance in some form of examination. However, measurements of this type frequently do not distinguish overall achievement prior to assessment, nor does it give any information about the efficacy of the teaching technique used."

What Brewer and Tomlinson take for granted is the application of 'measurement of learning' to education. Their question is how to measure the learning. I suggest that a prior question should be asked by researchers who are interested in the use of psychology in education. This question concerns the elements of an individual's educational development which are amenable to

evaluation. I would say that there are serious inadequacies in the way in which Brewer and Tomlinson are conceptualising Higher Education. They are assuming explicitly that both the measurement of learning and the evaluation of teaching can be carried out with the same type of criteria. The criteria involved in assessing those components of Higher Education which are amenable to measurement are surely different in kind from the criteria involved in the evaluation of teaching.

I will discuss these differences in the presentation of my dialectical concept of Higher Education. I will suggest that assessment requires the explication of criteria in a propositional form which can be applied directly to an educational outcome. In contrast to this I will suggest that evaluation involves the use of values in making choices. Choices which are so intimately related to an individual's form of life that they cannot be adequately represented in a purely propositional form.

My second point is directed at Mathias' (2) work on "Topic Evaluation". A fundamental problem with the present forms of presentation of research on assessment and evaluation in Higher Education is their denial of the individual. Although Mathias presents four short extracts of transcripts of discussions with students in which they refer to I, the individual nature of their educational development is ignored. Consider the following extract from Mathias's article (p.115).

> "As one physics student despairingly put it:
>
> 'I found it difficult at first and because I wasn't keeping up with it, it was getting on top of me; and then eventually I sort of gave up.' "

In the analysis which follows the I is ignored. In my own dialectical conception of Higher Education the I, which appears in our educational discourse, the discourse which is part of our educational development, exists as a living contradiction. By this I mean that every developing I in education exists as a dialectical unity: a unity which contains the negation of fundamental human values and the struggle to overcome this negation.

This point still forms a focus of debate between formal and dialectical logicians. The formal logic which structures all the past contributions to this journal explicitly excludes contradiction. Yet I assert that in my educational development in Higher Education, I exist as a living contradiction. I further assert that any form of presentation of a claim to know my educational

development must contain *I* as a living contradiction, if it is to be an adequate and valid claim to knowledge.

My arguments rest upon my dialectical conception of Higher Education in which I am taking a Platonic view of the dialectic as a process of coming to know through a method of question and answer. This distinction is crucial to the debates between propositional and dialectical logicians. To understand my arguments it is necessary to understand the different ways in which propositional and dialectical logicians use the concept of contradiction. My reason for focusing upon the distinction in logical terms is that everything we assert as a claim to knowledge can be assessed and evaluated in terms of its internal logical consistency. If I make two assertions (in a theoretical exposition) which are mutually exclusive and which I say are simultaneously true, I would be violating a fundamental premise of formal logic, namely the Law of Contradiction. This law holds that two mutually exclusive statements cannot both be true simultaneously.

In contrast dialectical forms of presentation are grounded in contradictions: not contradictions in the relationship between statements in the propositional form, but in the nature of the subject under investigation. A dialectician would argue that individuals exist as living contradictions in the sense that they hold within their dialectical unity mutually exclusive opposite experiences.

This distinction between the formal and dialectical views on contradiction holds the key to the problem of the implicit concept of Higher Education held by the contributors to this journal.

Every contributor has assumed that assessment and evaluation in Higher Education are related to Popper's 'Third World' of Objective Knowledge (3). All the assessments and evaluations are understood in terms of a direct relationship with Objective Knowledge. *My* questions are directed at the view of humanity which is within this view of knowledge: the relationship between knowledge and educational values implicit within this view; and the relationship between papers in this journal and the art of education.

The view of Higher Education which is restricted to 'assessing' and 'evaluating' in a direct relationship to Objective Knowledge has led inevitably to the omission of the aesthetics, ethics and dialectical logic of an individual's educational development.

My evidence for this assertion is my analysis of my own education development.
In the analysis I try to demonstrate the nature of the aesthetic and ethical
components in my educational development and relate them to my concept of
Higher Education.

My dialectical conception of Higher Education

In August 1981, fifty-four Nobel Laureates (4) appealed for a dramatic change
of political will in the world:-

> *"We cannot stand idly by and watch as disaster approaches. Our
> knowledge tells us that the whole of humanity is increasingly
> in danger of death and we must use this knowledge to create
> hope and salvation, to give substance to our beliefs and opinions."*

In this appeal there is the implication that we must learn to integrate and
apply in life the knowledge which will help us to improve the world. In
learning how to integrate and apply this knowledge we are engaged in a pro-
cess of educational development. In coming to understand this process we are
engaged in educational research. In claiming to know our own educational
development (in a way that is amenable to public criticism) we are constitut-
ing educational theory.

The words of the Nobel Laureates also reminded me of Kilpatrick's view (5)
that Educational Theory is a form of dialogue which has serious implications
for the future of humanity. He states that both within his own country
(America) and within the world, contending philosophies are so far apart that
consensus is made very difficult, if not impossible. He believes this con-
stitutes the greatest single long-term threat to our civilization and that
education must face up to this problem in spite of its inherent difficulties.

The idea that educational research must face the problem of contending philo-
sophies of education is a central theme in this paper. I am thinking specifi-
cally of the differences between the disciplines approach to educational
theory (6) and a dialectical approach (7). In the disciplines approach it is
held that educational theory must be presented in terms of the disciplines of
education, such as philosophy, psychology and sociology of education. The
dialectical approach contends that educational theory may be presented in
terms of the explanations which individuals give for their own educational
development. In the dialectical approach, an educational enquiry begins with
the experience of an affront to our aesthetic sensibilities. This experience
is related to the idea that education is a form of art and to the idea of

Humanity as a Whole.

The art of education and Humanity as a Whole

If we take an artist to be essentially concerned with giving form to whatever material he is working with, we can take the art of education to be concerned with the giving of form to human existence. If we take our own existence to be the material, then we can take the art of education to be our own struggle to give form to our existence. This struggle can be related to a conception of *Humanity as a Whole*.

I am making the assumption that the existence of fifteen million children dying of starvation each year, and the dropping of the nuclear bombs on Hiroshima and Nagasaki, violate our understanding of 'Humanity as a Whole'. This is an aesthetic form of understanding in the sense that we have a view of humanity as a whole in which the existence of starvation, torture and nuclear war has been overcome. The actual existence of these events in the world violates our aesthetic understanding of humanity and prevents the integration of our understanding into a unity.

If the above events are central examples of the violation of our aesthetic understanding of humanity, more limited cases in which our aesthetic sensibilities are affronted occur in our work in education. In my own work as a teacher and as a lecturer in education, I have found myself watching a teacher who has made racist comments in the classroom. I have seen others, including myself, making sexist comments. There have been occasions where I have denied my pupils the freedom to organise their own learning, not because it wasn't in their interests to do so, but because of my own failure to organise the learning resources in a way that made it possible.

There have also been long periods when I have drawn back from the struggle to establish democratic forms of control in my workplace because of the stress involved in the struggle. There have been other times when I have violated the basic respect and quality in human relationships which are required for a conception of humanity as a whole.

So these are important components in my conception of Higher Education: concern with the art of education which contains a conception of 'Humanity as a Whole'; a concern with educational values, such as freedom, justice, consideration of interests, respect for persons, worthwhile activities, and democratic forms of social organisation.

In making such statements I am also evaluating the quality of my own Higher Education. I am pointing out that the quality of my Higher Education rests within the art, ethics and dialectical logic of the process of higher education itself.

The distinction I would draw between assessment and evaluation concerns the criteria we use to judge an individual's educational development. I have suggested that evaluation is concerned with those areas which involve the aesthetics, ethics and logic of educational enquiries. I would distinguish assessment from evaluation by considering assessment in terms of the Popperian 'Third World' of Objective Knowledge.

Let me give an example of assessment in relation to my own educational development. As part of my educational development, I have produced a series of research reports which constitute a research programme and which embody my knowledge producing activities. (These are listed in chronological order under (8)).

When analysed, these reports demonstrate that my educational development can be understood in terms of a scientific and methodological form of life. The research programme conforms to Popper's (3) Schema for describing the growth of Scientific Knowledge; to Medawar's (9) classification of the phases of a Scientific Enquiry; and to Mitroff and Kilman's (10) classification of Methodological Approaches to the Social Sciences.

Popper's Schema is that we formulate a problem, propose a solution of tentative theory, eliminate the error, and reformulate our problem. Medawar says that this formulation has a serious defect in that it disavows any competence to speak about the generative aspects of an enquiry. Medawar separates a scientific enquiry into two phases: a creative phase and a critical phase which alternate and interact. In the creative phase we have an idea and the formulation of this idea is outside formal logic. It is the generative episode of thinking which takes the investigation forward. In the critical phase we subject the idea to empirical and logical testing.

Mitroff and Kilman distinguish four methodological approaches to the social sciences with a set of criteria which include the mode of enquiry and the preferred logic of four distinct groups of scientists; the Analytic Scientist; the Conceptual Theorist; the Conceptual Humanist and the Particular Humanist. The application of the criteria from these classifications reveals

the following pattern:

REPORT	METHODOLOGICAL APPROACH	SCIENTIFIC SCHEMA	PHASE OF ENQUIRY
1	ANALYTIC SCIENTIST	S(1)	CRITICAL
2	NONE	NONE	CREATIVE
3	CONCEPTUAL THEORIST	S(2)	CRITICAL
4	NONE	NONE	CREATIVE
5	CONCEPTUAL HUMANIST	S(3)	CRITICAL
6	NONE	NONE	CREATIVE
7	PARTICULAR HUMANIST	S(4)	CRITICAL
8	NONE	NONE	CREATIVE
9	outside the classification	S(5)	CRITICAL

Report nine is interesting because it is outside the Mitroff and Kilman classification. In report nine I give the following explanation for my own educational development in asking, 'How do I improve this process of education here?':

(1) I experience a problem because some of my educational values are negated.

(2) I imagine a solution to my problem.

(3) I act in the direction of this solution.

(4) I evaluate the outcomes of my actions.

(5) I modify my problems, ideas and actions in the light of my evaluations.

I would distinguish my attempts to assess and evaluate my Higher Education in terms of the different criteria which can be applied to that education. For example, where the criteria can be explicated in a propositional form and applied directly to an educational outcome I would say that I was *assessing* some aspect of my educational development. Where the criteria are the values I use in making choices, rather than rules of choice, I would say that I am *evaluating* the quality of my educational development.

In making a claim to know my own educational development in Higher Education I can show the separate ethical, scientific, methodological and aesthetic enquiries taking place. These separate enquiries exist within the one enquiry, 'How do I improve this process of education here?'. In claiming to know this

enquiry I am making an aesthetic claim to know the art of education in the sense of a struggle to give a form to one's existence in a way which does not violate the integrity of humanity as a whole.

Each of these claims is open to public criticism. The scientific and methodological enquiries were distinguished through the application of explicit criteria in the analysis. I 'assessed' the nature of my educational development by applying these explicit criteria in the analysis. The claim to know my educational development as a valued form of life (in Report 6) included the presentation of visual records of my educational practice which, together with a description of the practice, is open to public criticism. I 'evaluated' the nature of my educational development in terms of the values I used in making the choices which gave a form to my life in education.

My purpose in offering this analysis is to draw attention to a number of important implications for papers in this journal. If propositional logic is used in the linguistic form of presentation of papers this actually masks the ethical components in Higher Education and fails to communicate the nature of the art of education.

Propositional forms of discourse are certainly appropriate for assessing those components of education which are amenable to purely propositional forms of representation. In evaluating the quality of an individual's educational development, however, it will be necessary to supplement linguistic statements with other records, possibly visual ones, in order to build up a body of discourse which has shared understanding of the meaning of statements which contain value judgements.

In judging the aesthetic qualities involved in the art of education, a poetic form of presentation may be more appropriate. This may of course be anathema to the majority of the readers of the journal. I would, however, like to bring these issues into public debate.

Conclusion

I have presented an analysis of my own educational development in Higher Education in an attempt to question the concepts of Higher Education and Knowledge which underlie the papers in this journal. I have argued that the present conception of Higher Education treats education as if it were solely concerned with the 'Third World' of Objective Knowledge - of propositional forms of discourse. In contrast to this conception I have presented an

analysis which contains aesthetic and ethical dimensions in an individual's form of life rather than in a propositional form.

Thus I am questioning the concept of Higher Education which is implicit in the epistemological position of the contributors to the journal. As the journal is now concerned with educational evaluation as well as assessment, it seems an appropriate time to consider the epistemological implications of attempting to evaluate the quality of an individual's Higher Education. In such an examination it could well be that the problems of assessing and evaluating an individual's educational development will focus upon the question of what it means for you and I to be human beings in education.

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An Analysis of an Individual's Educational Development: The Basis for Personally Oriented Action Research

Jack Whitehead

My purpose is to draw your attention to the development of a living form of educational theory. The theory is grounded in the lives of professional educators and their pupils and has the power to integrate within itself the traditional disciplines of education. Educational theory occupies an ambiguous position in the educational profession. Its importance is due to the fact that a profession supports its skills and techniques with a body of systematically produced theory. On the other hand, teachers tend to decry educational theory because of its lack of relationship to their practical skills and techniques.

My purpose in writing this chapter is to outline how I think a professionally credible educational theory could be generated and tested from a form of teacher action-research. I take teacher action-research to be a form of self-reflective inquiry undertaken by participants in educational contexts in order to improve the rationality and justice of:

(a) their own educational practices,
(b) their understanding of these practices,
(c) the situations in which the practices are carried out.
     'It is most empowering when undertaken by participants collaboratively, though it is often undertaken by individuals sometimes in co-operation with "outsiders"' (Kemmis and Carr, 1983).

I am assuming that a teacher action-researcher, who is interested in contributing to knowledge of the process of improving education within schools, will be faced by an academic community who will

examine the legitimacy of the claim to knowledge. I am also assuming that a teacher-researcher is concerned to establish a direct relationship between the claim to know what he or she is doing and the pupils' educational development.

The educational analysis which follows is focused upon the nature of the validity of an individual action-researcher's claim to know his or her own educational development. The analysis outlines a form of educational theory which can be generated from professional practice and which can integrate the different contributions of the disciplines of education. Let me say at the beginning how I see the relationship between my own research and teacher action-research. In my work in a university I am paid to make a scholarly and acknowledged contribution to knowledge of my subject, education. I characterize my attempts to make this contribution a form of academic action-research. In my investigations of my own claims to know my own educational development I have explored the nature of a form of educational theory which is directly related to educational practice. My particular concerns have focused upon the academic legitimacy of an individual's claim to know his or her own educational development. I think that my findings will be of use to those teacher-researchers who wish to justify their own claims to knowledge to the academic community.

The approach to educational theory I am suggesting we adopt rests on a number of assumptions concerning both the idea of a 'living form of theory' and the personal and social criteria which can be used to criticize the theory. I use the term a 'living form of theory' to distinguish the suggested approach from the 'linguistic form' in which traditional theories are presented for criticism. In a living approach to educational theory I am suggesting that teacher action-researchers present their claims to know how and why they are attempting to overcome practical educational problems in this form:

> I experience a problem when some of my educational values
> are negated in my practice.
> I imagine a solution to my problem.
> I act in the direction of the solution.
> I evaluate the outcomes of my actions.
> I modify my problems, ideas and actions in the light of my
> evaluations.

For educational theory to be directly related to educational practice it must have the power to explain an individual's development. One of

the major problems which has led to the discrediting of traditional forms of educational theory was that they could not produce adequate explanations for the educational development of individuals. A theory should also be able to answer questions concerning why things happen. In the approach to educational theory advocated here the 'why' questions are answered in terms of 'value'. Like Ilyenkov (1982) I take 'value' to be a human goal for the sake of which we struggle to give our lives their particular form. In relation to the enquiry I take it that the experience of the negation of educational values moves the enquiry forward and that the values are taken, by the holder, to be concrete universal laws in the sense that we hold our educational values with universal intent.

Questions concerning the academic legitimacy of a claim to knowledge are often focused upon the criticism of a particular piece of work. The work being criticized can be a single hypothesis or theory (Popper 1972) or a research programme (Lakatos 1972). Whatever is being criticized is known as the unit of appraisal. In criticizing a claim to knowledge it is important to be clear about the unit and the standards of judgment which can legitimately be used in the criticism. There is some dispute amongst philosophers about the nature of the standards which can be used to criticize a claim to knowledge.

The unit of appraisal in my conception of educational theory is the individual's claim to know his or her own educational development. Although this unit may appear strange to most educational researchers I think that it is clearly comprehensible. The standards of judgment are however more difficult to communicate. I use both personal and social standards in justifying my own claims to know my own educational development. In using personal criteria I draw upon the work of Michael Polanyi. I am grateful for *Personal Knowledge* (1958) because in my case Polanyi fulfilled his purpose of 'stripping away the crippling mutilations which centuries of objectivist thought have imposed on the minds of men'. The personal criteria I use in making a claim to know my own educational development include Polanyi's values of respect and commitment.

> To claim validity for a statement merely declares that it ought to be accepted by everyone because everyone ought to be able to see it ... The affirmation of a scientific truth has an obligatory character; in this it is like all other valuations that are declared universal by our own respect for them. (Polanyi and Prosch, 1975)

> It is the act of commitment in its full structure that saves personal knowledge from being merely subjective. Intellectual commitment is a responsible decision, in submission to the compelling claims of what in good conscience I conceive to be true. It is an act of hope, striving to fulfil an obligation within a personal situation for which I am not responsible and which therefore determines my calling. This hope and this obligation are expressed in the universal intent of personal knowledge.
>
> ... Any conclusion, whether given as a surmise or claimed as a certainty, represents a commitment of the person who arrives at it. No one can utter more than a responsible commitment of his own, and this completely fulfils his responsibility for finding the truth and telling it. Whether or not it is the truth can be hazarded only by another, equally responsible commitment. (Polanyi, 1958.)

In grounding my epistemology in *Personal Knowledge* I am conscious that I have taken a decision to understand the world from my own point of view, as a person claiming originality and exercising his personal judgment responsibly with universal intent. This commitment determines the nature of the unit of appraisal in my claim to knowledge. The unit is the individual's claim to know his or her own educational development.

The social criteria I use to criticize my claim to knowledge appear to conform to Habermas' view on what claims to validity I am making if I wish to participate in a process of reaching understanding with you. Habermas (1979) says that I must choose a comprehensible expression so that we can understand one another. I must have the intention of communicating a true proposition so that we can share my claim to knowledge. I must want to express my intentions truthfully so that we can believe what I say. Finally, I must choose an utterance that is right so that we can accept what I say and we can agree with one another with respect to a recognized normative background. Moreover, communicative action can continue undisturbed only as long as participants suppose that the validity claims they reciprocally raise are justified.

From this I take it that the action-researcher has a responsibility to present a claim to knowledge for public criticism in a way which is comprehensible. The researcher must justify the propositional content of what he or she asserts, and justify the values which are used to

give a form to the researcher's life in education. The researcher must be authentic in the sense of wanting to express his intentions truthfully. Habermas says, and I agree, that a claim to authenticity can only be realized in interaction: 'in the interaction it will be shown in time, whether the other side is "in truth or honestly" participating or is only pretending to engage in communicative action'.

The personal and social standards I use to judge the academic legitimacy of my claim to knowledge are the values I use in giving my life its particular form in education. In judging my own claim to educational knowledge I use the following logical, scientific, ethical and aesthetic values. In such a brief space all I can hope to do is to sketch out the general principles of my position and to draw your attention to the locations where the position is being worked out in more detail in practice. The most difficult problem to be overcome in presenting my ideas to others in a comprehensible way concerns the logic of my position. As a dialectician I am aware of the attacks on dialectical logic by such eminent Western philosophers as Karl Popper. Popper (1963) dismisses the use of dialectical logic in the presentation of theories as based on nothing better than a loose and woolly way of speaking. His case rests on the way he thinks about contradictions. The point at issue has been clearly put by Ilyenkov (1977).

> Contradiction as the concrete unity of mutually exclusive opposites is the real nucleus of dialectics, its central category . . . but no small difficulty immediately arises as soon as matters touch on 'subjective dialectics', on dialectics as the logic of thinking. If any object is a living contradiction, what must the thought (statement about the object) be that expresses it? Can and should an objective contradiction find reflection in thought? And if so, in what form?

Formal logicians such as Popper (1963) hold that any theory which contains contradictions is entirely useless as a theory. This view is based upon a linguistic presentation of theory. In this paper I am drawing your attention to the locations (Note 1) where a living form of educational theory is being produced. The theory is embodied in the lives of practitioners who exist as living contradictions. The inclusion of 'I' as a living contradiction within a theoretical presentation creates problems if we attempt this presentation in a purely propositional form because the propositional logic holds that we cannot have two mutually exclusive statements which are true simultaneously.

In my own development I am conscious of attempting to overcome the experience of myself as a living contradiction in order to minimize the tensions between, for example, values negated in practice and the current practice. I am also conscious of the need to give a form to my life and of the need for meaning and purpose. If I attempt to describe my development in a purely propositional form I will fail to communicate my meaning because of the existence of 'I' as a living contradiction in my development. The central problem is how to present a dialectical claim to knowledge in a publicly criticizable form. My own presentation is in the form of ten research reports (Whitehead 1982) produced over the past ten years as I have explored my existence in terms of 'I' as a living contradiction in the School of Education of the University of Bath. The table in Appendix 1 summarizes the educational analysis of my educational development. I would also draw your attention to the work of colleagues and students of mine, past and present, who are struggling in a similar way to improve the quality of education (see Note 2). By drawing your attention to where the theory is being generated and tested in practice, I hope to emphasize that it is embodied in the form of life of practitioners rather than existing in a propositional form within textbooks on library shelves.

This is not to deny that the propositional form can have significance for the genesis of educational theory. On the contrary the standards I use to justify my claim to know my own development as a scientific form of life are drawn from Popper's (1972) views on the logic of scientific discovery. The main difference between the traditional view of educational theory and the dialectical approach is that the traditional view was presented in a propositional form which excluded dialectical logic. The dialectical approach is presented in terms of the forms of life of individuals in education and shows how propositional forms exist within the forms of life.

In using Popper's work I check to see whether or not the claim to know my own educational development conforms to the cycle of experiencing and formulating problems, imagining a solution, acting on the imagined solution, evaluating the outcomes and modifying the problems and ideas. This capacity of the dialectical approach to integrate within itself the insights from a propositional form is what gives the approach its power to integrate the concepts of the disciplines of education. I think that this power rests upon the imaginative capacity of individuals to relate the concepts to their practical concerns. For example as the individual encounters personal and social constraints in his or her attempts to improve the quality of

education in schools, the concepts from the psychology or sociology of education might prove useful in helping to overcome the barriers to improvement. The form I suggested above for the presentation of our claims to know our own educational development has the capacity to allow the inclusions of the concepts from the disciplines of education whilst being itself irreducible to the form of any of the present disciplines of education.

As the individual presents a claim to educational knowledge the academic community will be able to judge whether or not the work demonstrates an understanding of contemporary accounts in the different disciplines of education. It might also be the case that the claims to educational knowledge could point out deficiences in the present state of development of the disciplines of education.

Because of a desire to give a correct account of the nature of educational theory I want to hold up the value-laden nature of my claim to knowledge for public criticism. I want you to understand and accept for good reasons, the normative background of my ethical values.

I recognize a major problem, almost as great as the problem of contradiction, as soon as I attempt to communicate the ethical values in my claim to know my educational development. The problem is grounded in the principle known as the autonomy of ethics. This principle, usually attributed to Hume (1738) and upheld by linguistic philosophers, holds that statements of value and statements of fact form logically independent realms of discourse. In my educational development matters of fact and matters of value are integrated in my experience of practical problems of the kind, 'How do I improve this process of education here?'. How then do I present a claim to know my educational development in a way that truly represents this integration?

I can talk about the ethical values I use in making decisions which give a form to my life in education. I can use value-words such as those of consideration of interest, worthwhile activities, respect for persons and democratic forms of social control (Peters 1966). The meanings of my ethical values are however embodied in my educational practice. Their meanings emerge in the course of my attempts to overcome their negation (Feyerabend, 1975). In order to communicate these meanings I think that it is necessary to present visual records of that practice. I must show you where I am experiencing the denial of my educational values, give a public formulation of my problems in terms of the denial and I must present a programme of activities which I believe will overcome the denial. I must show you

my actions and hold up my evaluations of those actions for your criticism. In this way it is possible for an individual to hold up a claim to know his or her educational development as an ethical form of life for public scrutiny. The individual can thus generate a personal form of educational theory and submit it for public test.

However, since the meaning of values cannot be expressed in a purely linguistic form of discourse, they must, as I have said, be shown in action. Hence, it will be necessary for whoever is validating the claim to knowledge to use ostensive, as well as linguistic, criticism, in judging this aspect of the claim to knowledge. In judging the legitimacy of a value-laden claim to knowledge the individual is faced with the problem of justifying one set of values against another. In recent Islamic publications (Abdullah 1982), for example, the Western view of democracy has been declared inimical to educational theory viewed from an Islamic perspective. My own justification for my educational values is grounded within Polanyi's view of personal knowledge. Given that I am using a particular set of values in attempting to give my life its particular form in education, I am committed to examining the implications of attempting to overcome the experience of the negation of these values, in a way which fulfils Habermas' views on the validity claims I must fulfil if I am to reach an understanding with you. If our values conflict it seems to me inevitable that we are engaged in a political struggle. Conflict is most intensive when particular forms of life cut across those of others to the extent of one form negating the value-laden practice of another.

In the justification of a claim for scientific status for the individual's claim to know his or her own educational development I advocated the use of criteria from the work of Popper. To judge the logical status of the claim I suggested the use of a dialectical logic based on the work of Ilyenkov. To judge the ethical status I explained that my values were embodied in practice and that public criticism of the ethical base of my claim would require a form of ostensive criticism in which I must present visual records of my practice. I recognize that the cultural relativity of ethical values presents a serious problem for educators in a multicultural society who are asked to justify their own educational values. How the problem is being resolved must be shown and criticized in practice.

The final criterion is concerned with the notion of authenticity. This is a difficult concept to define because I think of education as a form of art in the sense that the individual is attempting to give a form to his or her life in a way which does not violate the integrity of other individuals. The aesthetic standard I use in judging the authenticity of

the claim to knowledge requires an approach I have termed, following Holbrook (1979), 'indwelling'. Its use involves an ability on the part of the reader to empathize (through written, aural and visual records) with another individual's form of life as it is presented in a claim to knowledge and, through 'delicate intuitions, imagination and respect' (Russell, 1916), to judge whether or not the form of life can be seen in terms of the quality of human relationships in which the unity of humanity appears to be possible.

Just as the artist attempts to give a form to his or her material, so teachers, who are practizing the art of education, are giving a form to their own lives in education and assisting their pupils to do the same. When the artist presents his or her work, the appreciation of it will come as the viewer spends time 'reliving the work of its creator' (Lipps in Holbrook, 1979). In a similar way, in judging the aesthetic form of a claim to know another individual's form of life in education, the reader must attempt to identify with the process in which that individual struggled to give a form to his or her life in education. In affirming or rejecting the claim to knowledge as embodying an aesthetic form of life it is necessary, I think, for the reader to judge whether the quality of the actions presented in the claim to knowledge has violated the integrity of an individual or the unity of humanity as a whole. I say this because education has, for me, significance not only for its personal influence but also for its role in the world as a whole.

In offering the unit of appraisal and the standards of judgment which I think can be used by educational action-researchers to establish the academic legitimacy of their claims to knowledge I wish to emphasize that the logic of education proposed by Hirst and Peters (1970) is mistaken: ' . . . facts are only relevant to practical decisions about educational matters in so far as they are made relevant by some general view of what we are about when we are educating people. It is the purpose of this book to show the ways in which a view of education must impose such a structure on our practical decisions.'

In my view of educational theory the theory is essentially transformatory. Structures may exist in the process of transformation but they must not be *imposed* on the individual. The idea of imposing a structure is inconsistent with the view of educational knowledge proposed above. I would remind readers that they should always bear Polanyi's point in mind and approach their own claims to knowledge in a creative and critical way as individuals who have made a decision to understand the world from their own point of view, and who are claiming originality and exercising their judgments

with universal intent. For the sake of the development of the profession of education they should also feel obliged to offer their claims to knowledge in an open forum for rational criticism.

Every educational action-researcher has a part to play in the development of the profession. Teacher action-researchers must be prepared to make public the educational theory which is embodied in their practices. Academic action-researchers must be prepared to help to establish the standards of judgment which are appropriate for judging the validity of such claims to knowledge. Administrator action-researchers must be prepared to show in what sense their activities are sustaining or improving the quality of education with the pupils in their institutions. My own work is concerned with assisting teacher action-researchers to justify their professional claims to know what they are doing through the provision of standards of judgment which themselves can stand the test of public and rational criticism. The only reason I have for writing this Chapter is the hope that it will lead you to contact some of those action-researchers who are participating in the programme or who are described in the bibliography and notes. Through such contact we hope that a shared form of educational theory will be generated and tested in our professional practices. We believe that this will lead to improvement in the quality of education in our educational and other social institutions.

Notes

1 *The Need for a Conference*
   The past five years have seen an upsurge in the potential of action research as a way of relating practical and theoretical work in education, and thereby improving the quality of classroom learning. A number of our higher degree students have submitted dissertations using an action research approach and an increasing number of students are registering with us because of the work we do in this area. Because of the work either completed or in progress we are now able to organize a one-day conference which we hope will bring teachers, academics and administrators together. We hope to develop a network of action researchers and also to contribute to in-service days and to DES courses which could help teachers to explore the nature of their educational practice.
2 The ideas in this Chapter have developed over a number of years through the collaboration, criticism and support of colleagues and students. In particular I have benefited from the support of Dr. Cyril Selmes and Mary Tasker in the School of Education at the University of Bath and from the unpublished Masters Degree dissertations, listed below, of students who

have worked with me to improve the quality of education in both theory and practice.

BARRETT, M. (1982) 'An approach to the in-service professional development of teachers', University of Bath.

FORREST, M. (1983) 'The teacher as researcher — the use of historical artefacts in primary schools', University of Bath.

FOSTER, D. (1982) 'Explanations for teachers' attempts to improve the quality of education for their pupils', University of Bath.

GREEN, B. (1979) 'Personal dialectics in educational theory and educational research methodology', University of London.

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POPPER, K. (1963) *Conjectures and Refutations*, London, Routledge and Kegan Paul.

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Appendix 1

The Form of Life of a Living Contradiction

Report	1	2	3	4	5	6	7	8	9/10
Medawar's phase of scientific enquiry	critical	creative	critical	creative	critical	creative	critical	creative	critical
The Popperian schema	s_1	—	s_2	—	s_3	—	s_4	—	s_5
Mitroff's and Kilman's methodological approach	analytic scientist	—	conceptual theorist	—	conceptual humanist	—	particular humanist	—	—
Kosok's self-linearizing form	A non-linear dialectic process depicted as a self-linearizing form which reveals transition structures (in the schemas and critical phases) as nodal points of self-reflection								

Whitehead, J. (1989) Creating a Living Educational Theory from Questions of the Kind, 'How do I improve my Practice?'
Cambridge Journal of Education, Vol. 19, No.1, pp. 41-52.

Creating a Living Educational Theory from Questions of the Kind, 'How do I Improve my Practice?'

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Have you ever made a claim to know your own educational development and subjected the claim to public criticism? If you have, what does such a claim to educational knowledge look like?

I'm assuming that all readers of this journal will at some time have asked themselves questions of the kind, 'How do I improve my practice?', and will have endeavoured to improve some aspect of their practice. I believe that a systematic reflection on such a process provides insights into the nature of the descriptions and explanations which we would accept as valid accounts of our educational development. I claim that a living educational theory will be produced from such accounts.

The idea that philosophers interpret the world whilst the point is to improve it is not a new idea. I have been urging my fellow academics for some years (Whitehead, 1972) to carry out an investigation into their own educational development as they question themselves on how they are improving their practice. I believe that academics who write about educational theory should do just that: make a claim to know their development and subject it to public criticism. In this way I believe that they will come to see that it is possible to create a living educational theory which can be related directly to practice.

PRODUCING A LIVING EDUCATIONAL THEORY

The traditional view is that a theory is a general explanatory framework which can generate descriptions and explanations for empirically observed regularities and the behaviour of individual cases. The explanations are offered in the conceptual terms of propositions which define determinate relationships between variables. Piagetian cognitive stage theory is a classical example of such a theory. By their nature concepts involve grasping principles thus ensuring that theories are presented in general terms.

A commitment to the propositional form can also be seen, surprisingly, in those researchers who are committed to a reflexive approach to understanding. For example, Kilpatrick's (1951) view on the importance of dialogue in educational

theory is presented in a propositional form. A more recent example in the work of Gitlin & Goldstein (1987) on a dialogical approach to understanding shows the authors presenting their case within a propositional form. Whilst I can recognise the importance of what they say, about teachers forming relationships that enable school change to be based on a joint inquiry into what is really appropriate, I believe that the propositional form of presentation will prevent them getting closer to answering their final, dialogical question, "How can we encourage the conditions necessary for teachers to enter into a dialogue aimed at understanding?".

Even those academics one would expect to understand the need to create an alternative to the propositional form of theory remain within it. For example, Donald Schön (1983) points out that "when someone reflects-in-action, he becomes a researcher in the practice context. He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case".

Schön is however committed to the fundamental category of established theory in holding to the propositional form,

> Theories are theories regardless of their origin: there are practical, com-mon-sense theories as well as academic or scientific theories. A theory is not necessarily accepted, good, or true; it is only a set of interconnected propositions that have the same referent—the subject of the theory. Their interconnectedness is reflected in the logic of relationships among proposi-tions: change in propositions at one point in the theory entails changes in propositions elsewhere in it.
>
> Theories are vehicles for explanation, prediction, explanatory theory explains events by setting forth propositions from which these events may be inferred, a predictive theory sets forth propositions from which infer-ences about future events may be made, and a theory of control describes the conditions under which events of a certain kind may be made to occur. In each case, the theory has an 'if...then...' form. (Argyris & Schön, 1975)

I am arguing that the propositional form is masking the living form and content of an educational theory which can generate valid descriptions and explanations for the educational development of individuals. This is not to deny the importance of propositional forms of understanding. I am arguing for a reconstruction of educa-tional theory into a living form of question and answer which includes propositional contributions from the traditional disciplines of education.

Gadamer (1975) points out that despite Plato we are still not ready for a logic of question and answer. He says that Collingwood (1978) helped to move us forward but that he died before he could develop this logic in a systematic way. Collingwood points out that if the meaning of a proposition is relative to the question it answers, its truth must be relative to the same thing. I agree with his point that meaning, agreement and contradiction, truth and falsehood, do not belong to propositions in their own right, they belong only to propositions as the answers to questions.

In saying that the theory should be in a living form, I recognise that this creates

a fundamental problem. The way academics think about theory is constrained by propositional logic. All academics working in the field of educational theory present the theory in terms of propositional relationships. However, the purpose of my own text is to direct your attention to the living individuals and the contexts within which a living theory is being produced (Lomax, 1986). Again I wish to stress that this is not to deny the importance of propositional forms of understanding. In a living educational theory the logic of the propositional forms, whilst existing within the explanations given by practitioners in making sense of their practice, does not characterise the explanation. Rather the explanation is characterised by the logic of question and answer used in the exploration of questions of the form, 'How do I improve my practice?'.

In developing such an approach I have had to come to terms with questions concerning an appropriate methodology for enquiries such as, 'How do I improve this process of education here?'. In looking at video-tapes of my practice I have had to confront the questions which arise on recognising the 'I' in the question as existing as a living contradiction. In the production of an explanation for my practice I have had to question how to include and present values whose meaning can only be clarified in the course of their emergence in practice. I have had to face questions related to validity and generalisability. I have also had to question the power relations which influence the academic legitimacy of a living educational theory.

In such a short article all I can do is outline the present state of my thinking in relation to these questions.

(1) 'HOW DO I IMPROVE MY PRACTICE?'—A QUESTION OF METHODOLOGY

If we look at the locations where a living form of educational theory is being produced (Lomax, 1986; McNiff, 1988) we can trace the development of a number of teacher–researchers who have used the following form of action/reflection cycle for presenting their claims to know their own educational development as they investigate questions of the form, "How do I improve this process of education here?".

I experience problems when my educational values are negated in my practice.

I imagine ways of overcoming my problems.

I act on a chosen solution.

I evaluate the outcomes of my actions.

I modify my problems, ideas and actions in the light of my evaluations . . . (and the cycle continues).

This form of enquiry falls within the tradition of action research. It can be distinguished from other approaches in the tradition through its inclusion of 'I' as a living contradiction within the presentation of a claim to educational knowledge.

(2) A QUESTION OF ACKNOWLEDGING ONE'S EXISTENCE AS A LIVING CONTRADICTION

My insights about the nature of educational theory have been influenced by viewing video-tapes of my classroom practice. I could see that the 'I' in the question 'How do I improve this process of education here?', existed as a living contradiction. By this I mean that 'I' contained two mutually exclusive opposites, the experience of holding educational values and the experience of their negation.

I searched the back issues of *Educational Theory* to see if I could find details of similar experiences reported by other researchers. I began to appreciate how the crucial issues of logic and values continued to reappear in the journal. From Cunningham's (1953) analysis of the 'Extensional limits of Aristotelean logic', through Mosier's (1967), 'From enquiry logic to symbolic logic', to Tostberg's (1976), 'Observations of the logic bases of educational policy', the debate about the logical basis of educational theory continues to rage in the literature.

A similar debate can be seen in the realm of values. We have 'The role of value theory in education' (Butler, 1954), 'Are values verifiable?' (Bayles, 1960), 'Education and some moves towards a value methodology' (Clayton, 1969) and 'Knowledge and values' (Smith, 1976). What these articles pick out is the continuing concern of educational researchers with the fundamental problems of logic and value in the production of educational theory.

I began to understand the concrete problems experienced by adherents to dialectical and propositional logics when they try to establish a sustained dialogue. The nucleus of dialectics, contradiction, is eliminated from descriptions and explanations presented in the propositional form (Popper, 1963). Dialecticians claim that the propositional form masks the dialectical nature of reality (Marcuse, 1964). I traced the tension between these logics to differences between Plato and Aristotle. In the *Phaedrus,* Socrates tells us that there are two ways of coming to know. We break things down into their separate components and we hold things together under a general idea. He says that those thinkers who can hold both the one and the many together he calls dialecticians. Aristotle, on the other hand demands, in his work on interpretation, that the questioner puts his question into a definite form and asks whether or not a person has a particular characteristic. Aristotle's propositional logic eliminates contradictions from correct thought.

An understanding of a living form developed, in my case, from the combination of the following insight from Wittgenstein with visual records of practice:

"I" is not the name of a person, nor "here" of a place, and "this" is not a name. But they are connected with names. Names are explained by means of them. It is also true that it is characteristic of physics not to use these words. (Wittgenstein, 1953)

Now 'I', 'this' and 'here', are contained within questions of the form, "How do I improve this process of education here?" In viewing video-tapes of our own educational practices I believe that we can see our own 'I's existing as living contradictions. This revelation, through the visual record, is crucial for the recon-

struction of educational theory. Yet there is a tendency to reduce the significance of 'I' as it appears on a page of text. It is so easy to see the word 'I' and think of this as simply refering to a person. The 'I' remains formal and is rarely examined for content in itself. When you view yourself on video you can see and experience your 'I' containing content in itself. By this I mean that you see yourself as a living contradiction, holding educational values whilst at the same time negating them. Is it not such tension, caused by this contradiction, which moves us to imagine alternative ways of improving our situation? By integrating such contradictions in the presentations of our claims to know our educational practice we can construct descriptions and explanations for the educational development of individuals (King, 1987). Rather than conceive educational theory as a set of propositional relations from which we generate such descriptions and explanations, I am suggesting we produce educational theory in the living form of dialogues (Larter, 1987; Jensen, 1987) which have their focus in the descriptions and explanations which practitioners are producing for their own value-laden practice.

(3) HOW DO WE SHOW OUR VALUES IN ACTION?

The reason that values are fundamental to educational theory is that education is a value-laden practical activity. We cannot distinguish a process as education without making a value-judgement. I am taking such values to be the human goals which we use to give our lives their particular form. These values, which are embodied in our practice, are often referred to in terms such as freedom, justice, democracy (Peters, 1966) and love and productive work (Fromm, 1960). When offering an explanation for an individual's educational development these values can be used as reasons for action. For example, if a person is experiencing the negation of freedom, yet believes that he/she should be free, then the reason why he/she is acting to become free can be given in terms of freedom, i.e. I am acting in this way because I value my freedom. If someone asks why you are working to overcome anti-democratic forces in the work place then I believe that a commitment to the value of democracy would count as a reason to explain your actions. I do not believe that values are the type of qualities whose meanings can be communicated solely through a propositional form. I think values are embodied in our practice and their meaning can be communicated in the course of their emergence in practice. To understand the values, which move our educational development forward, I think we should start with records of our experience of their negation (Larter, 1985, 1987). I want to stress the importance of the visual records of our practice. In using such records we can both experience ourselves as living contradictions and communicate our understanding of the value-laden practical activity of education.

Through the use of video-tape the teachers can engage in dialogues with colleagues about their practice. They can show the places where their values are negated. A clear understanding of these values can be shown to emerge in practice through time and struggle (Jensen, 1987). The kind of theory I have in mind forms part of the educational practices of the individuals concerned. It is not a theory which can be constituted into a propositional form. It is a description and

explanation of practice which is part of the living form of the practice itself. I have suggested a dialogical form enables such a theory to be presented for public criticism. Within this form the action reflection cycle has been found (Lomax, 1986) to be an appropriate way of investigating questions of the kind, "How do we improve this process of education here?" In this cycle we can study the gradual emergence of our values through time as we struggle to overcome the experience of their negation. We can describe and explain an individual's attempts to improve his or her educational practice (Foster, 1980). This approach to educational theory is being developed in a community of educational researchers who are committed to forming and sustaining a dialogical community (Bernstein, 1983) and who are willing to offer, for public criticism, records of their practice which are integrated within their claims to know this practice (Lomax, 1986). I am suggesting that a form of question and answer can also show how to incorporate insights in the conceptual terms of the traditional forms of knowledge whilst acknowledging the existence of ourselves as living contradictions as we refer to the records of our practice.

(4) HOW DO WE KNOW THAT WHAT THE RESEARCHER SAYS IS TRUE?—A QUESTION OF VALIDITY

Questions of validity are fundamentally important in all research which is concerned with the generation and testing of theory. Researchers need to know what to use as the unit of appraisal and the standards of judgement in order to test a claim to educational knowledge. I suggest that the unit of appraisal is the individual's claim to know his or her educational development. Within this unit of appraisal I use methodological, logical, ethical and aesthetic standards to judge the validity of the claim to knowledge (Whitehead & Foster, 1984).

Whilst most researchers may find it strange to take a unit of appraisal as their claim to know their educational development I think the unit is clearly comprehensible. My commitment to this unit owes a great deal to the work of Michael Polanyi. As I read *Personal Knowledge* (Polanyi, 1958), and reflected on my positivist approach to research (Whitehead, 1972), Polanyi's work fulfilled its purpose of "stripping away the crippling mutilations which centuries of objectivist thought have imposed on the minds of men".

> In grounding my epistemology in Personal Knowledge I am conscious that I have taken a decision to understand the world from my own point of view, as a person claiming originality and exercising his personal judgement responsibly with universal intent. This commitment determines the nature of the unit of appraisal in my claim to knowledge. The unit is the individual's claim to know his or her own educational development. (Whitehead, 1985)

I have given above some indication of the nature of the standards of judgement I use to test the validity of an individual's claim to know their own educational development. The questions I ask in judging the validity of the claim include,

(a) Was the enquiry carried out in a systematic way? One methodological criterion I have used is the action reflection cycle described above (Foster, 1980; Forrest, 1983).
(b) Are the values used to distinguish the claim to knowledge as educational knowledge clearly shown and justified?
(c) Does the claim contain evidence of a critical accommodation of propositional contributions from the traditional disciples of education?
(d) Are the assertions made in the claim clearly justified?
(e) Is there evidence of an enquiring and critical approach to an educational problem?

I characterise the application of these criteria as an approach to social validation. They are related to Habermas' view on the claims to validity I am making if I wish to participate in a process of reaching understanding with you. Habermas (1976) says that I must choose a comprehensible expression so that we can understand one another. I must have the intention of communicating a true proposition so that we can share my claim to knowledge. I must want to express my intentions truthfully so that we can believe what I say. Finally, I must choose an utterance that is right so that we can accept what I say and we can agree with one another with respect to a recognized normative background. Moreover, communicative action can continue undisturbed only as long as participants suppose that the validity claims they reciprocally raise are justified. However, such claims to knowledge may conform to acceptable standards of judgement yet still raise questions about their generalisability.

(5) HOW CAN WE MOVE FROM THE INDIVIDUAL TO THE UNIVERSAL?—A QUESTION OF GENERALISABILITY

Instead of thinking of an educational theory in terms of a set of propositional relationships between linguistic concepts I am proposing a view of educational theory as a dynamic and living form whose content changes with the developing public conversations of those involved in its creation (Whitehead & Lomax, 1987). The theory is constituted by the practitioners' public descriptions and explanations of their own practice. The theory is located not solely within these accounts but in the relationship between the accounts and the practice. It is this relationship which constitutes the descriptions and explanations as a living form of theory. In being generated from the practices of individuals it has the capacity to relate directly to those practices. To the extent that the values underpinning the practices, the dialogues of question and answer and the systematic form of action/reflection cycle, are shared assumptions within this research community, then we are constructing an educational theory with some potential for generalisability. The 'general' in a living theory still refers to 'all' but instead of being represented in a linguistic concept, 'all' refers to the shared form of life between the individuals constituting the theory. Now history shows us that new ideas have often met with scepticism, rejection or hostility from those who are working within the dominant paradigm.

Researchers who are trying to make original and acknowledged contributions to their subject, education, might expect powerful opposition to their ideas.

(6) WHICH POWER RELATIONS INFLUENCE THE ACADEMIC LEGITIMACY OF A LIVING EDUCATIONAL THEORY?—A QUESTION OF THE POLITICS OF TRUTH

My enquiry has led me to the question of how to support those power relations which support the autonomy of practical rationality within education. As part of this enquiry I think it important to examine the power relations which are distorting, undermining and systematically blocking the development of dialogical communities:

> In addition to the attempt to recover and reclaim the autonomy of practical rationality and show its relevance to all domains of culture, we realize that today the type of dialogical communities that are required for its flourishing are being distorted, undermined, and systematically blocked from coming into existence....But today, when we seek for concrete exemplars of the types of dialogical communities in which practical rationality flourishes, we are at a much greater loss. Yet we can recognize how deeply rooted this frustrated aspiration is in human life." (Bernstein, 1983)

Whilst this part of my enquiry is still embryonic I am continuing to study my own educational development as I engage with the following three problems.

A crucial issue in gaining academic legitimacy for a particular view of educational theory concerns the institutional arrangements for appointing examiners for Research Degrees in Education. For example, in some institutions a student is not permitted, under any circumstances, to question the competence of an examiner once the examiner has been appointed by the Senate. Given that the academics in one such institution have committed themselves to the statement, "A University has a moral purpose in society in the sense of upholding certain standards of truth, freedom and democracy", this raises a question on how the academics are upholding these values.

I wish to question the power relations which sustain the view that competence is a matter of appointment rather than of judgement, on the grounds that any academic judgement should, as a matter of principle, be open to criticism and to the possibility of incompetence. Could any academic keep his or her integrity and at the same time accept the truth of power which sustains the view that no questions of competence can be raised in the light of actual judgements?

I argue that, on principle, the power of truth is served by permitting such a challenge in relation to an examiner's judgement rather than seeing competence to be a procedural matter of appointment.

The second problem concerns the problem of self-identification in texts for publication. A problem I would have had in sending this work to a journal such as *Educational Theory*. The problem follows from a central point in this paper that

academics and practitioners should identify themselves in their work context and, at some point in their research, offer for public criticism a claim to know their own educational development. However, the guidelines and procedures of the staff of *Educational Theory* state:

> Manuscripts are subjected to a double-blind reviewing process (i.e. reviewers do not know the identity of authors, the authors will not learn the identity of reviewers)...
> To preserve the advantages of blind reviewing, authors should avoid self-identification in the text as well as the footnotes of their manuscripts.

In asking that an alternative form of presentation is considered by the readership of such journals as *Educational Theory,* a presentation which demands self-identification, I am conscious of entering, as Walker (1985) says, long-standing and fiercely defended positions in the history and philosophy of science. I do not enter such a debate lightly. I have found it necessary to engage with such politics of educational knowledge for the sake of developing an educational theory which can be directly related to the educational development of individuals.

The third problem is one in which the power relations in the academic community support the power of truth against the truth of power. I am thinking about the problem of testing one's ideas against those of others. In supporting the power of truth against the truth of power, academics offer their ideas for public criticism in a forum where the power of rationality in the force of better argument is paramount. Acknowledging mistakes is a fundamental part in developing our ideas.

In his paper, 'Educational theory, practical philosophy and action research', Elliott (1987) treats Hirst (1983) rather gently and choses a statement which does not fully acknowledge Hirst's mistake in advocating the "disciplines approach to educational theory":

> It is not so much that what I wrote in 1966 was mistaken as that what I omitted led to a distorting emphasis. Educational theory I still see as concerned with determining rationally defensible principles for educational practice. (Hirst, 1983)

Because our views about educational theory affect the way we see human existence I believe it imperative to acknowledge that mistakes have been made and to understand the nature of these mistakes so that we can move forward.

Paul Hirst has in fact made a most generous acknowledgement that he was mistaken in his view of educational theory:

> In many characterisations of educational theory, my own included, principles justified in this way have until recently been regarded as at best pragmatic maxims having a first crude and superficial justification in practice that in any rationally developed theory would be replaced by principles with more fundamental, theoretical, justification. That now seems to me to be a mistake. (Hirst, 1983)

I believe both Hirst and Elliott are making a mistake in their view of

rationality. They both subscribe to a view of rationality which leads them to use a propositional form of discourse in their characterisations of educational theory. What I am advocating is that the propositional form of discourse in the disciplines of education should be incorporated within a living form of theory. This theory should not be seen in purely propositional terms. It should be seen to exist in the lives of practitioners as they reflect on the implications of asking themselves questions of the kind, 'How do I improve my practice?'.

What I wish to do is to push Elliott's position forward. I think Gadamer points the way, but his propositional logic does not permit him to make the creative leap to a new synthesis.

Elliott points out that in developing our understanding we have to risk our values and beliefs. As we open ourselves to the things we seek to understand they will force us to become aware of problematic pre-judgements and to criticise them in the light of new meanings.

Let us be clear about my purpose. I am attempting to make an acknowledged and scholarly contribution to knowledge of my subject, education. This purpose is part of my contract of employment as a university academic. I have chosen the field of educational theory because I am committed to the profession of education and believe that it needs a theory which can adequately describe and explain the educational development of individuals. I am writing as a professional in education. In saying this I want to distinguish my activities from those of a philosopher, psychologist, sociologist or historian. I value their contributions to education but I do not believe that educational theory can be adequately characterised by any of them. I believe the limits of philosophers, whose work I have benefited from, such as Elliott, Carr (1986) and Hirst, are limited by the propositional form of their discourse. As philosophers, rather than educationalists, they have not taken the leap necessary to comprehend the nature of educational theory. I am saying that educationalists, through studying their own attempts to answer questions such as, 'How do I improve my practice?', are constructing a living educational theory within which the work of Hirst, Carr, Elliott, Habermas and Gadamer, is usefully integrated (Eames, 1987, 1988; Larter, 1987).

It seems to me to be crucial to ask the right questions in Collingwood's sense of moving our enquiry forward. In his work on 'Educational theory and social change', Pritchard (1988) says that the questions are: "How much do we wish to see? How much do we wish to understand? What conceptions, and alternative conceptions, of human practices do we have that will enable us to enhance and significantly enrich life and well-being?"

Prichard argues that we urgently need studies within educational theory which will serve to demystify institutions and to unmask ideologies. He concludes,

> It is evident that the attempt to 'raid' the disciplines of education and to use materials drawn from these areas without considerable theoretical understanding and support is ill-advised and, ultimately, is based upon an incoherent conception of the theory of education.

My worry is that Pritchard's questions are still grounded within the conceptual

forms of the disciplines of education. In order to construct an educational theory for professional practice I believe we will have to face the practical and theoretical implications of asking ourselves questions of the kind, 'How do I improve my practice?'

In the past I have been critical of academics who are unwilling to study their own educational development and subject their claim to know this development to social validation (Whitehead & Foster, 1984). It seems that Whitty (1986) voices a similar criticism in the context of the work of American and Australian sociologists on the politics and sociology of education:

> Yet, if the prescriptions of these writers are not to remain purely rhetorical, there is an urgent need for them to engage in an active exploration of the implications of their work among the political constituences in whose interests it is supposedly being carried out.

I hope to demonstrate my own engagement by investigating how relations which support the power of truth against the truth of power influence my own educational development. These influences are emerging as I engage with the politics of truth within arenas such as the educational research associations and institutions of higher education.

In conclusion I identify with a conversation between Giles Deleuze and Michel Foucault which considers the necessity for the practitioner of speaking on his or her own behalf:

> You were the first to teach us something absolutely fundamental: the indignity of speaking for others. We ridiculed representation and said it was finished, but we failed to draw the consequences of this 'theoretical' conversion—to appreciate the theoretical fact that only those directly concerned can speak in a practical way on their own behalf. (Foucault, 1980)

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