From Research into Action

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It is customary at conferences such as these to hear two recurring themes. Firstly for one or more participants to say that research is under-valued and under-funded, that there should be much more pf it, and that some, if not all society's ills could be put right if only the appropriate research were funded. Secondly it is customary for at least some self-flagellation to take place whereby we all admit that much research in education is piddling and second-rate, has little impact on practice and is barely worth pursuing. I want to argue that research has an important part to play in contemporary education, but that one must recognise it is only one of several sources of influence.

It would be wrong to assume that research has had little influence on teaching. In a different context, I remember John Hipkin saying that he had visited a school which had once been the jewel of Lawrence Stenhouse's Humanities Curriculum Project, and was disappointed to find cupboards full of unused project material, thus showing how short-lived curriculum-development projects were, and how rapidly they died when the first driving force disappeared. This is an unnecessarily gloomy view, as I suspect thousands of teachers' longer-term teaching habits were influenced by the Stenhouse Project. Similarly in educational research it is impossible to quantify how many schools which now have better consultation processes for parents, were influenced by the research carried out by Douglas [1] and Wiseman [2] in the early 1960s, and the action-orientated Home and School Project directed by Patrick McGeeney [3] at Exeter University from 1967 to 1969.

The Place of Educational Research

It is over-optimistic to expect many decisions made by teachers to be based on current research findings. Teaching is a busy job involving 1000 or more interpersonal transactions in a day and there is little time to reflect on practice. I suspect few of us read Donald Bligh's [4] summary of research into lecturing before we harangue our audiences, nor do we reflect too long on the massive research literature dealing with assessment before we mark an essay or a dissertation. If we did we should be paralysed.

In any case many areas of education are completely under-researched. Although there has been a substantial amount of work in Piagetian psychology, there is almost nothing on, say, the effects of in-service courses on teachers' classroom behaviour. Thus we are

barely in a position to offer what Nate Gage [5] has called "a scientific basis for the art of teaching".

By comparison it is hardly surprising that there are important new developments in the treatment of cancer. Around the world armies of investigators are researching every aspect of the disease on a scale way beyond anything being undertaken in education.

Amongst our most desperate needs are the following two:

(i) Data for Policy Decisions

Although most local authorities would collect basic information on pupil numbers, expeditions etc., a great deal of other kinds of information is unknown, for example beliefs, aspirations or anxieties of teachers, pupils or parents, or the implementation of previous policy at school level. It is current policy to place a micro-computer in every school. Will anyone take the trouble to see whether in some small rural three-teacher primary school the teachers are favourably disposed to it, properly trained to exploit its potential, have enough software; will anyone enquire how it is actually used, or even whether the wretched machine is ever unwrapped?

(ii) Data for Curriculum Development

One most fruitful way in which educational research can make an impact on practice is in association with curriculum-development projects. Unfortunately the timescales of the two parts of the enterprise rarely coincide. By the time the Nuffield language and interest surveys had fully reported, the Nuffield language courses themselves were all into production. On the other hand in the 1920s Thorndike [6] was very influential on the teaching of arithmetic and his carefully worked out and tested psychological theories led to some marked changes in teaching, and were directly influential on the writers of major textbooks.

Strengthening the Contribution of Research

There are several ways in which the contribution of research can be made more significant. The first prerequisite is a greater public and professional confidence in research findings. This would be helped if:

(a) There Were More Re-analysis of Data

Much of the debate about the National Children's Bureau [7] report on progress in secondary schools surrounded the use of certain statistical techniques to compensate for initial differences in achievement. These data should be reanalysed; it would be worth the expense. It is regrettable that Neville Bennett [8] was attacked for reanalysing his teaching-styles data when this seemed to me a most responsible act, leading as it did to the testing out of new clustering techniques. Unfortunately the researcher has a lot to lose. If the results are the same cynics will say that those who peer through green

spectacles will always find the world is green, if the results are different he will appear a fool or a charlatan. Nevertheless reanalysis is essential.

(b) More Replication Studies Were Undertaken

It is impossible to replicate exactly, but without near replication it is impossible to arrive at any usable generalisations. Again replication studies can be controversial and acrimonious. Barber's [9] replication of Rosenthal's studies of experimenter bias effect led to angry exchanges in the research journals. Certainly the use of meta-analysis, the technique developed by Gene Glass [10] for aggregating studies to discover effect size, for example the success rate of psychotherapy, or the strength of the smoking-lung cancer link, would be more meaningful if the studies being put together were not so disparate in nature as is sometimes the case.

(c)There were More Direct Involvement of Teachers and Others in the Educational Service

It is, of course, very fashionable to say that teachers should be more involved in research. It gets four cheers at a conference like this, and about half a cheer and a few hisses at a teachers' conference.

If there is one fact of modern life that is now well recognised, it is that we live in a period of rapid change. Some research is out of date when it is published, given that books appearing today often describe fieldwork undertaken five or six years ago. Thus to have real impact, action-orientated research must be done in full cooperation with local authorities, schools and individual teachers.

(i) *At LEA Level*

It is nothing short of a scandal that systematic enquiry into practice hardly exists at all in some areas. Yet it would cost little for the authority to nominate areas of concern and second teachers, heads or advisors to local universities, polytechnics or colleges to pursue these. For example, if an authority agreed to second one teacher for two years and three teachers for a term each, a team of four working in the right environment could hope to make a real impact on a problem.

(ii) *At School Level*

One of the most encouraging aspects of the Teacher Education Project was when we found a whole school becoming excited by the notion of enquiry. Thus at Priory School in Weston-super-Mare several teachers watched each other teach and analysed each other's lessons. Over a three-year period at Nottingham University nearly 200 deputy heads attended courses during which they undertook small-scale research into decision-making, teaching strategies or departmental organisation. No school can give much of its time to systematic enquiry, but a general spirit of curiosity, once fostered, can allow two

teachers to interview a sample of parents one year, ten teachers to investigate pupil learning another, two deputy heads to study staff morale a third year, and so on.

(iii) *Individual Teachers*

Lawrence Stenhouse's notion of the teacher-researcher is an important one, and I am delighted it is beginning to be so influential at BEd and PGCE level. If teachers are to be willing to hone their professional skills throughout their career, they need to learn at the training stage how this can be done. In the new BEd at Exeter all third- and fourth-year students will do a school-based project, to be negotiated in their teaching practice school.

Although no committee, would ever have painted the Mona Lisa, no individual would ever have sent a man to the moon. A massive team effort is often needed in our complex technological society, with experts and semi-experts working together. Little will be achieved in educational research unless some significant team work of this kind is undertaken.

The Political Dimension

When Copernicus was a young man he was invited by the Pope to help reform the calendar on the basis of his expertise in astronomy. He declined on the grounds that he did not yet have a sufficiently strong theoretical basis. Later in life he proposed calendar reforms, by which time his notion that the Earth was not at the centre of the universe was acutely embarrassing to the Church.

A similar fate befalls educational researchers in controversial areas such as evaluation of schools or the measurement of pupil learning. Hence the substantial public debate which accompanied the Bennett studies of teaching styles and open plan schools, Michael Rutter's [11] research into twelve London schools, and the NCB report comparing secondary schools.

When Clare Burstall's [12] evaluation of primary-school French was published, those who were hostile seized the critical parts to attack or even discontinue French in the primary schools, whilst those of who were supportive pointed to the section which described how pupils did better when teachers and heads were positively committed.

It is a sad but inescapable fact of life that reports in policy-sensitive areas will bring out the political nasties from under their stones.

In the wake of the vitriolic attacks on some research reports, which go far beyond what is legitimate academic criticism, the future for research in areas of public concern is a bleak one. I would urge all those who critique research to resist the temptation to savage a professional colleague. Trenchant criticism is an essential part of research, character assassination is not. I would commend as, a model of sensible criticism of a controversial

report the critique of the NCB study by Jack Wrigley [13]. I do not agree with all the points he makes, but the tone is about right.
Unfortunately the excessively savage treatment given to some researchers recently may, in future, lead to only three kinds of investigator being willing to tackle controversial topics:
(1) the extremely naive, unaware of what they are letting themselves in for;
(2) the extremely robust, who enjoy a public crucifixion;
(3) the politically motivated, interested more in polemic than research.
It would be a sad day for education research.

Researching the Future

Probably our most arduous assignment is research for and about the future. Alvin Toffier [14] in *Learning for Tomorrow* said, "All education springs from some image of the future. If the image . . . held by a society is grossly inaccurate, its education system will betray its youth."

How can educational researchers offer advice to schools about the future? At school level quite a deal of educational research is relevant because it is hypothesis-generating. For example, Rutter's finding that there was an inverse correlation between vandalism and the display of pupils' work is not 'proof' that putting children's work up on the walls reduces vandalism, nor that the incidence of vandalism results in less work being displayed, it is rather an invitation to schools to embark on a little experiment: if there is vandalism, display the pupils' work and see if this creates communal pride.

But I can foresee some events in the future that may cause us to wring our hands in anguish and wonder why we never did anything about them. What role does educational research have in predicting the future?

First of all historical research allows us to look at parallels in our own and others' recent history, so that we may either avoid the mistakes of our foolish forefathers, or at least minimise the likelihood of a recurrence. That is why I am glad to see the presence of a historical strand at the conference chaired by Brian Simon. .

Secondly long-term studies can create a sense of perspective, which may sometimes be a salutary one. Joan McCord's [15] thirty-year follow-up of the Cambridge-Somerville Youth Study, a project begun in the 1930s to help reduce delinquency amongst disadvantaged boys in industrial Massachusetts, showed more crimes, more alcoholism, more stress-related disease and lower-prestige occupations amongst the experimental group than a matched control. Unless we monitor previous experiments over a long period of time there is no basis for planning future experiments more successfully.

Thirdly a lot of data about the future are already there. Eric Briault [16] was able to make some predictions about the effects of failing rolls by studying schools which had already faced the problem. If we want to know how many non two 'A' level people are

capable of taking a degree, we only have to analyse the vast amount of data on certificate of education students who stayed on to do a BEd, available in the files of every college in the country.

Finally there is a problem in the future to which we must address ourselves. We are in the greatest danger of seeing an appalling catastrophe in Britain before the year 2000 because of the serious under-education of the present generation. The age participation rate for higher education has fallen from 1 in 7 to 1 in 8 during the last few years, whilst Japan's increased from 1 in 4 to 1 in 3. This year 20,000 university places are being obliterated. Hundreds of thousands of young school leavers, unable to obtain proper training through apprenticeships, are either on street corners or are being sent on Micky Mouse schemes leading to no qualifications. The consequences in an increasingly complex technological society of having a badly under-educated citizenry are appalling. Where will the expert adult workforce of the 1980s come from? Unless we turn our skills of enquiry and prediction to hot issues like this, intractable, controversial though they may be, despite the opprobrium, the accusations of political dabbling or sensationalism we may arouse, we are taking the easy path.

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