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"why do we not make greater use of the findings of educational research in planning for the future?"

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A South African professor of education is reputed to have asserted that seventy five per cent of educational research in this country has no practical value. The late Stephen Wiseman, at one time Director of the National Foundation for Educational Research in England, however, claimed that experiment and inquiry are futile unless the findings of research reached those in whose hands lie the means of action whether the action referred to teaching in the classroom, planning in the education office or "decision-making in the corridors of power".[1] Research, especially published reports, it is claimed, keep the practitioners in education informed about changes and significant reforms in educational practice, but there are few teachers in South Africa who consciously use the results of research to improve their classroom practices. Most educationists would agree, however, that the criterion whereby educational research is to be evaluated should not be its usefulness: there is merit in the pursuit of truth for its own sake.

A researcher in Britain has asked why so many of the findings of educational research fail to appear convincing or relevant to those who are directly involved in education. The conclusions of educational research, it has been asserted, are given little attention by either teachers or policy-makers. Research studies seem irrelevant to educational practice and consequently journals of education are hardly ever read except by research specialists.[2] The American Psychological Association estimates that none of its papers is read by more than seven per cent of psychologists, and half its research reports are read by less than one per cent. If this is true of those committed to research, how much truer it must be of teachers, administrators and the politicians who influence education?[3]

The view has been expressed that the results of educational research have been disappointing: the practical benefits derived are considered incommensurate with the time, energy and funds which have been expended. The attitude of teachers makes the task of the educational innovator difficult; many teachers remain sceptical of research and prefer to rely on commonsense trial and error. Teachers work in an environment with strong links with the past and because of their conservative thinking, are hesitant to embark on innovation which invites a break with tradition.[4]

Another reason why educational research appears to have little practical value is that some critics brought up in a rigorous scientific discipline dismiss many research projects as worthless unless the findings are based on experiments conducted with complete objectivity and subjected to appropriate statistical analysis and controls. Because of this insistence that research should use the methodology of science, the range of educational problems which can be investigated is circumscribed and the examination of substantive problems in education is discouraged. As Kitwood puts it:

> "To practitioners of education, tentative or incomplete answers to significant questions are of more value than excellently contrived answers to trivial or trumped up problems".[6]

In spite of these doubts about the relevance and value of educational research, the time and energy devoted to it can be justified. The primary purpose of research is to increase educational efficiency and to make responsible planning possible. In a period of educational change and reform it is essential that innovations should be

evaluated. If education is regarded as an applied science, empirical research based on scientific experimental methods can be used to reach reliable decisions, and settle controversial questions by experiment instead of argument, e.g. which methods, the old or the new, are the more effective? There are many educationists, however, who have reservations about the use of empirical research as a guide to practice, as will be explained in this article. Because of the many subjective factors in education, empirical experimentation may not be advisable or practical in which case decisions will have to be based on reasoned argumentation.[7]

Confident empiricists may claim that when a solution to a controversial problem has been obtained by experimentation, there is no further need for argument because opinion will have been replaced by certain knowledge. But do we really solve problems in education? There are few questions in education in which a degree of finality has been reached. The current debate in the United Kingdom about the merits of progressive and traditional teaching styles is an example of a question which, in spite of the researches of Neville Bennett, is still wide open. There is a degree of impermanence in educational research and a feeling that, although advances may be made in some areas, we shall never reach the end of our problems. As Thouless has said:

> "The solving of our present problems is likely to lead to the uncovering of new problems that have to be solved".[8]

A critical attitude towards educational research is common among practising teachers today. Some are scornful of the apparent unreality of educational research. It has been suggested that because many research studies employ a specious view of science important problems are often trivialised.[9] Because of the insistence that the only authentic research is that which adopts a rigorous scientific approach, the range of problems which can be investigated is restricted.

Stephen Wiseman in surveying the field of research in 1968 expressed his disappointment at

> "the shortage — almost the complete absence — of the thoughtful, scholarly, analytical paper, attempting a reconciliation of disparate research findings, or seeking a theoretical basis for integration and synthesis. There are too many people actively rushing round testing, measuring and computerising; too few who are sitting down thinking, reasoning and speculating".[10]

Bantock in his criticism of educational research emphasises the failure to clarify adequately important concepts in education. As an example, he draws attention to the need to undertake a conceptual clarification of what it means to teach, what in fact is involved in the concept of teaching. There have been hundreds of unsuccessful research projects investigating competence in teaching, but the search for criteria as the basis for assessing teaching competence has failed because of the need first to clarify what is involved conceptually in the activity of teaching. Bantock is of opinion that "there are no fruitful universally applicable criteria of what constitutes a good teacher".[11] There are many variables which influence a teaching situation: Who is teaching what to whom? Other concepts which need to be clarified especially in any research into the effectiveness of teaching styles are "authoritarian" and "democratic" and "creativity".

Wilson draws attention to what he calls the "value-free myth" in educational research, the myth that one can do serious research in education by restricting oneself to "the facts" and that one can simply exclude one's own values, prejudices and preferences. His point is that whether we believe it or not, our value judgements do enter into the process. Not only has the presence of values in our thinking to be accepted, but we have to define these values precisely. What is meant by a

"morally educated" person? What is a "good reader"? As Wilson puts it:

> "Getting the values clear and precisely expressed is not only a preliminary to making value judgements . . . it is the proper way of determining what our values and desires actually are . . . In research it is a matter of getting clear what we mean by terms such as 'mature', 'responsible', 'well-educated'."[12]

Bantock and others have criticised the use of questionnaire techniques in educational research because too little attention has been given to respondents' interpretation of concepts of terms used in questionnaires, e.g. surveys have shown that respondents attached very different meanings to "sex education", "moral education" and "creativity".[13]

Another problem stems from the reasons underlying the answers given to questions: respondents do not always give their "real" reasons for an answer, e.g. some answers are given so that respondents will appear normal and well-motivated in case the results of the questionnaire are used in some hidden form of assessment. Not all research based on questionnaires results in "soft" facts or subjective impressions only: it is possible to design questionnaires which provide reliable information.[14]

The claim that the best educational research is scientific is frequently questioned and derided by those who prefer to put their trust in methods more appropriate to the study of education. One critic has asserted that education has fallen into a "scientistic trap" in its efforts to conform to scientific canons.[15] Educational research relies more on the performance of experiments which control the conditions under which observations are made instead of relying on observations of spontaneous happenings. The use of measurement in preference to description and the use of statistical processes in analysing quantitative data rather than verbal reasoning in arriving at conclusions are other examples of the application to education of the methods of scientific research.

Bantock has pointed out that the subject matter of education is qualitatively different from that of the natural sciences and therefore should have a methodology of its own rather than use uncritically techniques borrowed from non-educational areas of inquiry. In support, Bantock quotes Winch:

> "The notion of a human society involves a scheme of concepts which is logically incompatible with the kinds of explanation offered in the natural sciences". (Winch, P, "The Idea of a Social Science", quoted by Bantock.)[16]

R J Light of Harvard has asked how appropriate data analysis of some kinds is in educational research and has suggested a variety of alternative statistical techniques for the analysis of qualitative data.[17]

Phenomena in education are a manifestation of social activity which are "subject to human purposes and meaning in a manner in which natural phenomena are not. This implies that the understanding of social phenomena involves a qualitatively different approach to that needed with natural phenomena . . . such understanding implies something more than external observation: it necessitates at least an imaginative projection into what the phenomena concerned mean".[18]

Wilson and Bantock have reminded us that teachers are inescapably involved in the world of values and that they are continually called upon to make judgements about values, and therefore researchers cannot simply "stick to the facts".[19]

Bantock asserts that what is fundamentally wrong with English education is its unwillingness to face up to the need to raise questions of value.

> "So many educationists spend their time finding, often rather dubious, answers to not always very well framed questions, or asking factual questions in fields in which a profounder vision of human existence might have queried the relevance and importance."[20]

Barber in explaining some of the pitfalls of experimental research in education, has focused attention on the bias which is often introduced into educational research by investigators and experimenters because of their personal attributes, their underlying asumptions and way of conceptualising the area of inquiry. [21]

Educationists should guard against making the same error as historians of the nineteenth century. As Carr has expalined, historical works of the nineteenth century were characterised by "a fetishism of facts". It was a time when historians believed in the "untiring and unending accumulation of hard facts as the foundation of history, the belief that facts speak for themselves, and that we cannot have too many facts".[22]

J B Bury, the great Cambridge historian, represented this point of view when in his inaugural address of 1903 he asserted "history is a science, no less and no more". Although the insistence that history is a science with rigorous scientific methods of research has had a beneficial effect on the writing of history because it has led to greater care and caution in ascertaining and stating the truth, historians today are conscious of the intrusion of value judgements in historical writing. Barraclough puts it succinctly when he declared:

> "The history we read though based on facts is, strictly speaking, not factual at all but a series of accepted judgements".[23]

Other critics claim that the emphasis on scientific, empirical research in education, especially the use of measurement in the study of human behaviour, is dehumanising the study of education.[24] The characteristics of teachers "whose existence consists of people, places, ideas and skills," are all too frequently reduced to statistical procedures. To reduce human powers and characteristics to objective, scientific processes reflects an inadequate view of human nature, although it may make educational problems manageable within the constraints of scientific criteria. Parlett, an acknowledged authority in the field of evaluating curricula, has criticised the use of techniques which resemble those used in the study of botany and has suggested that "methods appropriate for people, not plants, should be developed".[25]

One of the myths in educational research is that of "replicability" of human situations. Wilson claims that, although attempts are made to control the variables in an experiment, even in the physical sciences a complete replication of any situation is virtually impossible. Nevertheless, as Wilson points out, although replication may be impossible the study of human beings in the human sciences by methods, which would not be considered scientific and objective, is worthwhile.

> "What we should rather do is to ask the difficult but important questions, and tailor our research methods (including some concept of replicability if you like) to fit these. To try to make psychology like physics is not the only defence against bias, prejudice or lack of rigour."[26]

A survey of the research undertaken by students and staff of South African universities and also by education bureaux, seems to indicate that less than 20 percent of the projects and dissertations have been based on empirical research conducted according to the scientific methods mentioned in this article. As the writer had to rely on the catalogues and registers of dissertations of such institutions as the Human Sciences Research Council[27], it was not possible to determine with any degree of certainty the degree of empirical research, e.g.

> "An Investigation in to the Reasoning Processes used by High School Students in Answering Questions of Different Types with Emphasis on the Differences Between Multiple Choice Questions and Comparable Open-ended Questions".
>
> "An Inquiry into the Problems of Medium of Instruction in Bantu Schools."
>
> "An Analysis of the Relationship Between Non-intellectual Factors and

Academic Achievement of First Year Students at Universities and Colleges."

"A Study of the Correlation Between Excellent Academic Achievement and Certain Personality Traits."

Although many teachers will doubt the practical value of comparative studies in education or research with an historical bias, there should be no doubt that such studies serve to give educationists today valuable perspectives at a time of rapid and radical changes in educational practice.

In glancing through the registers or catalogues of dissertations one gains the impression that there is a greater emphasis in Afrikaans universities on a philosophical and pedagogical approach to research. One is also led to the conclusion that some of these topics have been over-researched e.g.

"An Investigation into the Possibility of a Psychological-pedagogical Differentiation into the Education of Mentally Retarded Children".

On the other hand there are problem areas in education where research is urgently needed for the guidance of planners, e.g. curriculum evaluation projects at primary and secondary level as well as in higher education. All the changes in school syllabuses over the past few years have been made without reference to any empirical evidence. The validity of the assessment of student teachers at colleges and universities with special reference to their subsequent professional competence in schools is a difficult, indeed almost impossible, subject to research because of all the variables involved; nevertheless useful guidelines may be established for assessment procedures in training institutions.

Contemporary teacher training in South Africa appears to be a rationally designed system, its structure being based on the rigid national criteria as laid down in the commonly called "Green Book", i.e. the "National Criteria" for the Evaluation of Qualifications for Employment in Education"; but the time has come critically to evaluate these criteria which have such a binding effect on teacher education in South Africa. To what extent does the structure of teacher education as prescribed in these criteria make posible the realisation of the goals of education today? This is a question worth investigating.

In the field of assessment and evaluation many questions remain unanswered. A new problem has arisen, but examiners have not yet shown concern about it: what is the basis of differentiation between examinations set at Higher Grade and Standard Grade levels? How does one establish a comparability of standards?

When a headmaster of a private school claims that the freedom and responsibility which his pupils enjoy are a better preparation for university studies and for adult life generally than a school with an authoritarian climate, how should research be used to confirm or refute his claims?

A critical evaluation of educational research along the lines suggested in this article would be useful — this is research into research. How can research be made more relevant to the needs of education and more meaningful to those engaged in teaching?

Kitwood has suggested that it is necessary to establish fresh standards of acceptability in educational research. Firstly, techniques of inquiry appropriate to education should be adopted. "The acceptance of human characteristics is necessary for the study of human beings in educational setting." A re-appraisal of research methods is needed to ensure that there is no lack of humanity in investigations.[28]

Secondly, the method of research should be appropriate to the topic: if the use of experiment and statistical studies is best suited to illuminate a problem area, they are acceptable methods provided genuine answers are given to significant questions, but as Tukey has pointed out, it is:

"Far better an appropriate answer to the right question, which is often

vague, than an exact answer to the wrong question, which can always be made precise".[29]

Thirdly, there should be a greater emphasis on qualitative research and the findings of research presented in non-quantitative form should not be considered inferior.

There should be a greater involvement of teachers in educational research. They should be encouraged, not only to study for higher degrees based on research, but should be encouraged to become members of teams engaged in combined research projects which may be school-based. An interest in and an understanding of research should start with student teachers during courses of initial training. This appreciation of educational research should be fostered by continuing education in the form of in-service training. Such courses should give teachers an understanding of elementary statistical procedures to enable them to read research reports which give this sort of data.

Finally, the concept of extended professionalism, as opposed to restricted professionalism, must be encouraged among teachers. According to Stenhouse:

> "the outstanding characteristics of the extended professional is a capacity for autonomous professional self-development through systematic self-study, through the study of the work of other teachers and through the testing of ideas by classroom research procedures".[30]

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