The Role of Research in Teacher Education

by Torsten Husén (Stockholm)

The Role of Teacher Training in Educational Innovation

In terms of its objectives, organisation and work practices, the school tends to be highly institutionalized. That also applies to the institutions for the training of teachers. It may well be asked whether these institutions are not more conservative in certain respects and more incapable of adapting to the new conditions than the schools out in the field. Whereas a consensus has largely prevailed within the Swedish political community in regard to those changes of school organization that have been made during the last two decades, large groups of secondary school teachers have opposed these structural changes. Most of the arguments advanced for the organisational changes have been social, with reference made to new societal needs and equality of educational opportunity; most of the arguments against them have been pedagogical. Those who have opposed adjustments of the school to new social determinants have implicitly reasoned as though the school's objectives and work practices were largely unrelated to the societal framework. This applied to some secondary school teachers, for example, when the debate on so-called differentiation at the upper level of the compulsory school was at its liveliest.

A central issue for the teacher-training institutions is how to go about introducing the innovations of course content and—above all—of work practices, which are necessary prerequisites to enable the school to adjust adequately to the radical new conditions emerging in a changing society. Teacher education must not become a conserving element of the school system, because generation after generation of educators teach time-honoured and unchallenged patent methods. The teacher-training institutions must be designed so as to foster the spirit of inquiry and experimentation, as well as undogmatic criticism of the established order, that is a prerequisite for introducing needed changes in the school.

Teacher education can be given a "strategic" position in this innovation process, partly by spearheading the development of methods of instruction, and partly by arrangements to ensure, both in teacher education and in in-service training, that the results of development work are disseminated and implemented in practice.

According to the curriculum studies conducted by the Stockholm School of Education for the 1957 Swedish Governmental School Committee and the Industrial Council for Social and Economic Studies, a considerable discrepancy was found between curricular prescriptions and actual classroom practice with regard to course content and work practices. Whereas the prescriptions gave fairly "progressive" directions for the teaching of Swedish, for example, the actual teaching adhered for the most part to the instructional plan dating from 1919.

It is not my intention here to analyse either the determinants of the school of to-
day or the altered demands that this has imposed on the teachers. The goals of teacher education have been thoroughly discussed in other contexts. It should suffice for present purposes to single out the following factors:

1. More and more young people are staying on in school for longer periods (this is the familiar "educational explosion"). As a result, the school must now take care of all kinds and degrees of abilities. There is no longer any question of the school being called upon to cull an elite. The object is to make the most of everyone's potentiality as far as possible, which in principle signifies a radical individualization.

2. The "knowledge explosion" denotes a shift away from the encyclopedic, knowledge-storing ideal of education towards the acquisition of skills: included here is the ability to think in those categories which characterize a certain discipline and the ability to solve problems in the subject field on one's own. The intellectual diet that the school can give its pupils does not provide sufficient nourishment. This observation applies with even greater force to the efforts made by the teacher-training institutions.

3. Research in the behavioural and social sciences and the advent of new technical aids are bound to react on the organization of work and on work practices in the school. In these latter respects the school is still very much at the pre-industrial stage.

Measures Which Promote Innovations in the School

As already observed, the teacher-training institutions enjoy a strategic position in the work of educational development, which follows from the new teachers they graduate as well as from assisting in the further education of already practising teachers. Should these institutions take little part in this work or not at all, they will readily become a conserving element in the school system. The impulses to renewal will then come from other quarters.

If the teacher-training institutions are to become a force for progress in the school's reform work, the following conditions must be met:

1. Research into problems that are thrust up by the continuing work of educational reform should be pursued in close contact with teacher education itself. For this purpose the contact must not be restricted to orienting student teachers and teacher trainers to the methods and results of research; instead, these groups should be actively involved in the research work. That applies in particular to the teacher trainers.

2. Every teacher training institution ought to be equipped with a laboratory school for experiments and demonstrations. Such a facility, which should be of moderate size, must not be used for practice teaching but, as the name suggests, serve two purposes, namely 1) to constitute an experimental school, where new types of teaching, methods and aids are tested on a trial basis; and 2) to give student teachers the opportunities to observe children more systematically than is possible in the normal school setting and—even more important—to enable the students to see sophisticated work practices in concrete use.

3. The methods teachers should be actively involved in the R & D work that is carried on in the laboratory school. When instructing in their subject they must be enabled to show concrete manifestations of the new methodological tools as well as to analyze their background more systematically. It follows that the posts of methods teachers should be shaped so as to give the incumbent considerable latitude to take part in the work of developing new methods of instruction. It may therefore be asked whether every methods teacher should not during some time of his career be assigned to a graduate school of education, so as to work closely with the educational researchers.

By taking steps to put methods teachers—and, for that matter, supervisors of student teaching as well—in daily contact with the educational R & D work, either through their own active efforts or through enabling
them to collaborate with those who continuously have to tackle the problems, the result will be to create, if not guarantees, at least much more favourable conditions than now exist for having them spearhead the work of methods development within the school.

With the measures outlined above, contact with scientific research in the school sector would help impart a more undogmatic climate to teacher education, deflate the cocksureness identified with training colleges and encourage greater receptiveness to innovations. There would be less danger of becoming petrified in patented routines. Research may be expected to produce these effects not only on the strength of its findings but also—and perhaps chiefly—by subjecting problems to debate by casting doubt on the axiomatic, on that which has been held to be self-evident and thoroughly confirmed by all so-called experience. The adjustment of teacher education to constantly changing determinants in the school system and the conduct of R & D programmes that can provide the school with adequate tools will stand or fall with the extent to which education takes place in that spirit of inquiry which permeates all research work and is the quintessence of higher learning.

Research and Development Projects

As a matter of course, the R & D pursued in connection with teacher education would have to tackle key problems in the practical sphere, not least those which are brought to the fore by educational reforms. Emphasis should therefore be put on applied i.e. decision-oriented research. It is assumed that basic research, particularly in the behavioral or social sciences, of relevance to the educational sphere will have to be pursued in large part at other institutions, for instance the institutions of experimental psychology, statistics and sociology. But here, no less than in other sectors, the distinction between basic and applied research should not be drawn too hard and fast. A project that aims at a very specific target often gives rise to new methodological problems of the greatest importance for basic research. The same holds true for the results of applied research. A couple of examples may be cited. The standard tests used for equalization purposes in certain grades of the comprehensive school were for some time developed at the Stockholm School of Education. Their actual construction generated various methodological problems especially of determining the reliability of the tests used. The analysis of these problems has mattered a great deal for the theory of educational measurement, which indirectly conferred benefits on the concrete application. Data collected for entire school grades have permitted special study of large populations of twins, which has resulted in new methods for shedding light on the heredity-environment problem. Another example: Representative data have been collected whereby the intellectual development of boys and girls at certain age levels could be subjected to exhaustive investigation.

The following problem areas must be considered central to research into practical education, namely

1) the objectives and content of teaching;
2) the didactic principles that are most conducive to learning; and
3) the evaluation of outcomes of teaching by objective methods.

Objectives and course content have been successfully illuminated with specific methods in the past. Cases in point are the curriculum studies that were carried out by the Stockholm School of Education in conjunction with the work of the 1957 Governmental School Committee and the 1960 Commission of Inquiry into the pre-university school (gymnasium). The latter body came to base a considerable part of its curriculum recommendations on the research findings obtained. Considering that curricula in a changing society continuously have to be revised, it is necessary to endow curriculum research with permanent institu-
tional resources so that it can be continuously maintained. Since it is worthwhile to have this work carried on in close contact and collaboration with experts on subject methods, it should be sited at the teacher-training institutions.

Systematic try-out experiments are required to underpin the development work that relates to methods and teaching aids. These experiments should, with the assistance of the methods teacher concerned in their “exploratory” preparatory phase, be conducted at the experimentation-and-demonstration laboratory schools referred to above. This field of work is large enough to warrant the operation of many such laboratory schools, preferably one at each teacher training institution. As soon as the laboratory schools have completed the preliminaries, experiments on a bigger scale can be undertaken “out in the field”, that is, in ordinary schools.

To the extent that schooling is considered an investment, there arises the need to evaluate the effect of invested resources. Since a scarcity of teachers and physical plant must be reckoned with for the foreseeable future, a great deal of effort will have to be put into investigations which seek to explain the conditions under which the effect of resources can be optimised. Since any reform of a specific grade level touches off a debate as to the appropriate length of schooling or the volume of instruction that should be given in a specific subject, an investigator must find out what relations exist between age, maturity and length of schooling on the one hand, and the outcomes of teaching on the other.

**Theory and Practice in Teacher Education**

When the 1946 School Commission submitted its report on the first school of education in 1952 to the Minister of Education, it recommended providing for a new professorship in a subject called “School Research”. The incumbent of this chair would be responsible for the teaching of educational foundations both in the regular undergraduate curriculum and in connection with in-service training, where the new school was envisaged to play a leading role. He would also see to it that instruction in psychology and education tied in closely with research in the area, especially with research that related to experimental programmes. As envisaged by the Commission, this post would emphasize research over teaching duties.

Several arguments have been advanced in support of the thesis that educational research ought to be pursued in institutional integration with teacher education, both in the undergraduate phase and in in-service training. Mention has already been made of the concentration on problems that have to do with the school reform. It goes without saying that decisions taken by parliament with regard to the organization of the school, as well as the schedules, syllabuses and directives issued by the authorities, will have extremely limited impact on the school’s internal work unless the teachers can be actively motivated to explore new paths and aim at new objectives.

It has repeatedly been observed that the potentials for reshaping the school will greatly depend on the extent to which teacher education can be reformed. This is not only a matter of inculcating new methods of teaching but also of providing a body of facts that carry conviction. The researchers are enabled by their work to keep in first-hand touch with innovations in this sector. It lies in the nature of research to be pioneering: efforts are made to elucidate factors that were formerly disregarded or kept in the dark. It is vital to imbue the student teachers with a measure of this pioneering and inquiring spirit. Anyone who has helped to discover facts finds it easier to abandon erroneous and biased notions and practices, in short to change his attitudes. That cause will be further fostered if the student teachers take part in the institute’s research work, even if no more than modestly. The Swedish School Commission in 1952 held out the vision that this would take place to a fairly considerable extent.
But experience has shown that the curriculum as a whole is such heavy going that the students cannot devote very much of their undergraduate time to pursuing their own inquiries taking part in the research work at the School of Education's Institute of Education and Research. Some of the students, particularly those who plan to pursue graduate work, gathered data for the study of didactic questions in the course of their practice-teaching terms.

Further, one should not overlook the value of permitting research to fertilize teacher education with its inquiring and undogmatic outlook. A great deal of practical teacher training consists in learning certain rules of thumb. The risk here is for a student to make do with the "handlebars" he has once learned in the belief that these form the very essence of educational wisdom. One way of trying to neutralize this risk is to let a bit of the researcher's healthy skepticism permeate the instruction. One advantage of getting the student teacher to take a skeptical view of most things in the educational world is that he will not tend as readily to regard himself as a "finished product", which will make him more receptive to impulses to keep on educating himself.

It is of great importance that those responsible for research at the School of Education have a certain teaching contact with the undergraduate students, such that these will be given certain lectures, particularly with reference to research projects relating to the school reform.

The educational researchers at the School of Education have considered it extremely important to establish cooperation with teachers in methods as well as with supervisor-teachers in the laboratory school. This cooperation has been established in various situations and in different forms. Many teachers of methodology attend seminars which deal with both the Department's own research projects as well as those undertaken in quest of the doctorate. In connection with planning the curriculum studies referred to earlier, the methods specialists in both elementary and secondary education were actively engaged. Their efforts went into the analyses of existing syllabuses; and wording of the questionnaires that was used to map out actual course content and methods of instruction.

There has also been fruitful cooperation between the educational researchers and the supervisors of student teaching in the design of standardized achievement tests. It started out by going at length into the objectives of teaching in the subject concerned. The next step was to discuss the selection of suitable test material to measure different topics of a subject area. Only then could work commence on the "authorship" of test problems. In that work the experience of subject experts and able teachers was of the utmost value. As a valuable by-product, it became possible to crystallize and examine the syllabuses in a quite different way than before. The approach taken here was to determine the extent to which the syllabuses square with the generally expressed objectives of teaching in the subject concerned.

It would have been desirable to extend the cooperation between educational theorists and practitioners to embrace other aspects. In the opinion of many, the weakness that has long attached to teacher education is the inadequate coordination of the theoretical foundations in psychology and education with methods and teaching practices. It should be considered extremely important to have all three actors in teacher education—professors of education, methods specialists and supervisors—share the same frame of reference, so that they look upon school problems more or less similarly, or at least that they understand one another's viewpoints. Failing that, there is the risk that they will not talk the same language, which is bound to have a confusing effect on the students. Obviously, the advice on general methods which comes from the supervisor in the laboratory school, or the specific pointers related to a particular subject area given by the professor of methodology, will have to be rationally justifiable with reference to more general psychological and
pedagogical principles. For that to happen it will be necessary for both supervisors and teachers of methodology to grasp certain fundamentals of educational theory and also to have close contact with those teachers who impart the subject matter. Unless that is the case to a sufficient extent, it is only too likely that instruction in theory will be perceived to bear slightly, not to say dubiously, on the realities of practical education.

Another form of cooperation between teachers of education, researchers, supervisors and teachers of methods is to let the students know, when they pursue their own small research projects or field investigations, that they can also count on assistance from the methods teachers. It must be stressed that instruction in methods should not be restricted to the communication of manual artifices. It is important to subject the methods to investigations of a more scientific and systematic character. That is the only way to guarantee the promotion of a rational development in the didactic field. These self-evident observations by no means imply a degrading of the instruction in practical methods and the broad experience on which this is based, but only a reminder of the need to test the validity of everyday experience with the help of instruments from the armoury of science.

The researcher, not least the one who pursues lines of inquiry in those social sciences whose results have applications for the larger community, often has reason to ask himself: What “good” will come from all my pains? If he is completely shut up in the ivory tower, he can derive satisfaction from having helped to map out new areas, from having discovered new laws and principles or, in his efforts to solve problems, from having hit upon new methods with apparent promise for further scientific use. Society must accept such basic research without casting anxious side-glances at the “practical” applications. There is a good reason for this: we can never predict with any great accuracy what will be solid ground in the future for building up the scientific edifice.

There is a fruitful interplay between basic and applied research. Time and again a project launched out of sheer curiosity, simply in order to find out more about something, has led to discoveries and findings whose practical application were neither intended nor even dreamt of by the researcher. Conversely, the focus on applied research has often given rise to problems that suggest themselves for basic inquiry or lead on the methods that have significantly borne on the further development of theoretical models.

For natural reasons the educational researcher cannot sit permanently in the ivory tower—though, at times, sheer fatigue may make him wish for periods when he could hang out the Do Not Disturb” sign. Most of his problems crop up in practical life situations, not least that of the school. His methods have to be tested out in the field. His facts are gathered in the classrooms, and the sustaining power of his results will sometimes be applied and put to the test in the school’s everyday reality. Yet he stands outside the ivory tower in another respect as well. The problems he is assigned to investigate are often controversial, being loaded with the dynamite of professional and scholastic politics. This means that the researcher readily gets caught in the cross fire between interest organisations and pressure groups. Since he cannot afford to align himself with either, or display either a black or white coat of arms, he risks being squeezed between both sides. Fortunately, he need expose himself to that predicament only in the more exceptional case. It also happens that he will be brought into the decision making arena if his results influence the school’s practice or the acts of educational authorities.
Le Rôle de la Recherche dans la Formation des Enseignants

par Torsten Husén (Stockholm)

Le problème fondamental des institutions qui forment les enseignants est de savoir comment introduire, dans le contenu du cours et dans les stages pratiques, des innovations qui sont nécessaires pour un ajustement de l'école à des conditions nouvelles dans une société qui change. Les institutions de formation des enseignants doivent avoir pour but de faire naître l'esprit de recherche et d'expérimentation de façon à ce qu'ils soient le fer de lance du développement et de la propagation de nouvelles méthodes et de nouveaux contenus de l'enseignement.

Parmi les facteurs qui influencent les buts de la formation des enseignants il y a 1° un plus haut degré de scolarisation chez les jeunes de toutes catégories, de toutes aptitudes et de tous milieux, 2° «l'explosion du savoir» conduisant à un changement dans les idéaux pédagogiques; on préfère l'acquisition des compétences à l'accumulation des connaissances, 3° de nouveaux développements dans la recherche en éducation et la technologie éducative.

De façon à être une force dans la réforme des écoles les instituts de formation des enseignants doit créer un climat favorable à l'innovation, 1° en faisant participer activement les enseignants et les futurs enseignants à la recherche pédagogique, 2° en développant les liens avec une école pilote, 3° en encourageant les spécialistes qui enseignent des matières à contenu dans les centres de formation des enseignants à participer à la recherche et au développement.

La recherche et le développement en matière de formation des enseignants devraient essentiellement porter sur des matières appliquées plutôt que sur des sujets fondamentaux (bien qu'on ne puisse pas et ne doive pas établir de limites strictes). Les domaines qui posent des problèmes et qu'il faut étudier sont les suivants: 1° les objectifs et le contenu de l'enseignement, dont la Commission d'Enquête sur les Gymnases en Suède (1960) est un exemple; 2° les principes didactiques; 3° l'évaluation des résultats. La nécessité d'une révision continue des programmes demande des ressources institutionnelles permanentes et celles-ci nécessitent d'être accompagnées par des facilités pour expérimenter systématiquement et pour évaluer les résultats.

La réorganisation politique des écoles ne peut être efficace que si elle est soutenue par la volonté de l'enseignant d'explorer de nouvelles voies. Des liens entre la recherche sur les écoles et la formation des enseignants dans laquelle les étudiants participent, même modestement, au travail de recherche sont nécessaires de façon à créer le désir chez l'enseignant d'explorer de nouvelles voies et de développer un scepticisme sain à propos de pratiques en vigueur. Si les enseignants ne possèdent pas ces qualités la réorganisation systématique des écoles ne peut être efficace.

En Suède, des liens entre les chercheurs et les spécialistes de la méthodologie d'une matière donnée se sont développés de manière fructueuse, tout particulièrement en ce qui concerne la révision des programmes.
Il est souhaitable que ce genre de coopération se multiplie, par exemple en liant des notions de psychologie aux stages pratiques et en liant les techniques de recherches avec l'expérimentation sur place. Une telle coopération profite aussi au chercheur qui sort de sa « tour d'ivoire », et peut, non seulement le conduire à des directions de recherches nouvelles et fructueuses liées directement aux besoins journaliers de l'école, mais peut-être l'amener à participer à l'élaboration des décisions.