The Contribution of Research to the Reform of Secondary Education in Western Europe*

Torsten Husén

If European educators were asked to indicate the most important educational problem with which most countries in Europe have been faced since the War, surely most of them would point out the introduction of universal secondary education. Most probably would also agree that two main forces can be traced behind the rapid expansion of enrollment in their secondary schools. These are increasing need for highly trained manpower and the democratization of our schools — strong political forces aiming at making the educational facilities available to all young people irrespective of their place of residence, financial level, or general social background. Everybody pays lip service to these two principles. In recent years even ministers of finance have been brought to the conviction that the investment in human capital that education represents must result in support of education in general and in putting more resources at the disposal of secondary education. If asked, everyone gives fervent support to the principle of equality of opportunity. Apart from the fact that unanimity disappears when it comes to translating this principle into concrete measures at the level of policy making, there would also be some disagreement as to the relative importance of the two principles.

This presentation will attempt to review some of the major educational problems related to these matters of increasing need for trained personnel and democratization of education and to indicate the role educational research is playing in our efforts to cope with the requirements of society.

The Problem of the Organization of Secondary Education

The pervading disagreement, at least in Western Europe, has been related to the problem of how secondary education should be organized. The core of the problem has been the dual or parallel school organization which stemmed from a highly stratified class society from which various countries are moving away at different rates.

Somewhat schematically, the basic problem in Europe has been how to eradicate the historic burden of the dual class-determined school system. In the more or less heated debate which is preceding the educational change, the points of view are almost purely educational, at least as long as they are stated by teachers, whereas social and economic factors are stressed by politicians and social researchers. It sometimes seems to be a professional disease, from which especially secondary school teachers are suffering, to overlook the fact that the school is operating in a social and economic context and that its goals and modes of operation will be tremendously affected by changes that society is undergoing.

Teachers usually conceive of the problem in the following way. Is it possible to keep all pupils together within the same type of school or within the same class? Furthermore, at what age should they be separated into different schools, if necessary, in order to profit from instruction in an optimal way? Provided the answer to the first part of the question is "Yes," i.e., the pupils could be kept together under the same school roof to the end of the secondary school, could they then be kept together in the same classes (without streaming) and at what age should they be separated into different streams or tracks according to criteria of ability?

These are the basic questions, which, clad in various national costumes, pervade the discussion about secondary school reform in Europe. Quite naturally, a good deal of educational research has been devoted to the problems of what effect grouping has on the intellectual development of the pupils.

Contrasted Philosophies of Grouping

The problem of how pupils should be differentiated according to criteria of ability and/or achievement has been structured differently by two philosophies. For lack of better labels these will be called the elitist and the comprehensive conceptions.

According to the elitist conception, the prime goal of the secondary school is to prepare for the university and/or the professions. Therefore, it is maintained, in order to keep up the standards admission to the academic program will have to be based upon strict requirements. The corresponding school organization is characterised by parallelism and selectivity. The compulsory elementary school and the academic secondary school run parallel to each other for a certain number of grades. Pertinent examples can be found in the Federal Republic of Western Germany, where in most states transfer from the *Volksschule* to the academic *Gymnasium* takes place at the age of 10. The two schools are then operating parallel to each other for an additional four or five years. However, reforms projected or to some extent already implemented in countries like France and the Federal Republic of Germany make provisions for modification of the parallelism at the age of 11-13 by means of letting it become an "observation stage" *(cycle d'observation)*, so that a definite categorization of students is, at least in theory, postponed.

The comprehensive philosophy, according to which the school, within a unitary organization, should cater to all kinds and all degrees of ability, rejects selectivity and emphasizes freedom of choice of subjects and programs. It tries to achieve a maximum of flexibility in programs and careers. In the Swedish Education Act of 1962, any classification of the pupils implying any kind of "streaming" is prohibited. The goal is to keep the system as flexible as possible so as to avoid blind alleys or premature choices that cannot be corrected.

Countries in the process of introducing universal secondary education, therefore, have to lessen the intellectual selectivity. In consequence, certain subjects or topics which in countries with a selective system are studied in the pre-university school have been moved up to the university.

Thus, the elitist conception contends that instruction will be very much impaired by having children of different levels of ability within the same classroom. Both the able and the dull will gain considerably by being separated, the earlier the better. The comprehensive conception stresses the social justice and unification that one hopes will emerge from mixing children of varying ability in the same classroom.

Empirical Tests of Philosophies of Grouping

So far, the writer has not questioned the possibility of subjecting some of the assumptions on which the two philosophies are based to empirical tests. His experience in Sweden makes it self-evident that any policy-making body that wants to come to grips with the problems of organizing secondary education should call upon educational researchers, if they are available, and put resources at their disposal to test assumptions upon which policies tend to be built, especially implicit ones.

Within the *elitist* frame of reference, the dominating problem has been how to maximize the efficiency of selection for the academic secondary school. The problem was from the outset considered to be very simple; namely, what predictors are good in forecasting scholastic success within the grammar school and what combination of such predictors might achieve an optimum of forecasting efficiency? Thereby it was taken for granted that selection should take place at, for instance, the age of eleven and that it would be possible to arrive at criteria not only of secondary school success but also of the selection system as such, i.e., criteria derived not only from individuals within a given type of school but also from those outside the school, i.e., non-applicants, not-admitted applicants, and products of attrition.

The most pertinent contributions to this research have been made in Great Britain, not least because of its excellent researchers with a psychometric background. Here will be mentioned only the outstanding research carried out by Pidgeon and Yates[10] at the National Foundation for Educational Research in England and Wales and the lucid inquiry that Vernon[11] made for the British Psychological Society. The latter points out that the problems connected with selection primarily stem from certain historical, social, and political causes and cannot be solved merely by improving the selection technique. This disparity of esteem and prestige of the various secondary schools, the bias towards a linguistic-academic type of education, the repercussion effects on the junior school, etc., are all inherent in the very system of selection at the age of 11+. Vernon also points out that selection now is as accurate as it can reasonably be, considering the changes in ability and interest that

take place among the children. With a top validity of the best combination of predictors, one would expect that about one quarter of those admitted to grammar school would fail according to certain criteria, and that six per cent of those rejected would have succeeded.

The problem of the number of failures in terms of early leaving and wrong rejections is not only a question of whether society should allow its schools to commit such mistakes or of how many it should be allowed to make in terms of validity coefficients. It is also a question of how much society can afford in terms of non-utilized talent.

Within the *comprehensive* frame of reference, two types of problems have been tackled by educational researchers. The first is the relative "productivity" of the comprehensive as compared with the selective system. The design of such studies is extremely difficult, since the criteria are legion and often selected within the frame of reference that will favor one or the other system. On this point the following lesson could be learned from Sweden.

The National Board of Education (which in several respects fulfills the functions of the Ministry of Education in England) in its evaluation of the report submitted by the 1946 School Commission, which proposed the Comprehensive nine-year school in Sweden, strongly advocated the necessity of making comparisons between the "old" selective and the "new" comprehensive system. The 1950 Education Act, which made provisions for a tryout on a pilot basis over a period of several years, was passed almost unanimously by the Swedish Parliament, since the Minister of Education and leading member of the Parliament emphasized that the outcomes of comparisons should lay the basis for the reshaping of the school after the tryout period. Very soon, however, there was a good deal of argument about how the decision had to be interpreted. Should a comprehensive school, irrespective of the outcome of the tryout, be introduced all over the country, or should it be dropped in favor of the previous dual and selective system if the outcome turned out to be negative? In any case, the research resources at the disposal of the National Board of Education were concentrated on comparing over a certain period the outcome of instruction of two systems that differed greatly in selectivity. The one, the academic *realskola*, admitted an intellectual and social elite and took care of roughly 20-25 per cent. The other system in principle took care of a hundred per cent of the pupils in a given area. But since in many cases the two systems operated in the same areas, a considerable number of more able students transferred to the well-established grammar school in the area, whereby the comprehensive schools were still more handicapped since they could not operate with pupils covering the whole ability and social range. The curricula were not comparable with regard to either the time table or the content of the subjects. The teachers were not comparable, since the most qualified secondary school teachers from the outset worked in the existing selective schools and the new ones (especially because teacher training had not been changed) wanted to be employed at schools for which they considered their training to be adequate.

Comparisons made in terms of attainments under these circumstances were almost completely irrelevant, since they were made in terms of objectives especially emphasized in the existing secondary schools and since only social-class differences between the two types of systems were kept under control. The main flaw in these comparisons, however, which was overlooked by almost everybody, was the fact that the traditional secondary school had a grade-repetition or dropout rate to such an extent that only 50 per cent of the originally selected group graduated from the academic secondary school in due time.

The Concept of Price Paid for Selectivity

The last point brings us to an important problem within the comprehensive frame of reference. Besides the quality of the fruits, i.e., the attainments of those who survive in the system, the main criterion of evaluation ought to be: how many are brought how far, and in general, to what extent is the principle of equality of opportunity actually operating? What is the price paid in the selective system for the high quality of the few who survive? The "price," then, consists of the number of able students who do not apply, who are wrongly rejected, who are thrown out during the course of study, and who fail to graduate.

This problem has not been studied to the extent that it deserves. In comparison with the tremendous research work devoted to the selection problem, it might be said to have been almost entirely neglected.

Very few surveys have been conducted in order to assess the price paid in a selective system for the high quality of those who survive until graduation. In the study on "Early Leaving"[1] initiated by the British Ministry of Education during the 50's, a 10 per cent sample of pupils admitted to grammar schools was followed up and their school records were related to the entrance examinations and their parents' social class. According to the operational criteria established, 38 per cent of the intake failed. The receiving grammar schools were asked to divide their intake into three equal

groups according to performance in the 11+ examinations. Among the students belonging to the best third and having fathers in the professional and managerial group, 10 per cent failed as compared with 54 per cent of those whose fathers were unskilled workers.

A similar study was made by Orring[9] in Sweden of a 20 per cent sample of a year's intake in the academic secondary school. In spite of the fact that admission was based on rigid selection and that total marks on standardized achievement tests constituted the criteria, more than one-fifth of the pupils in one type of school and almost one-third in another left school without taking an examination or without continuing their studies in the pre-university classes. Drop-outs and non-promotions were of course correlated with entrance marks, but these correlations were not very high. The marks from the first grade in the receiving school far from perfectly predicted future success. In a special analysis, drop-outs and non-promotions were also related to social class. With entrance qualifications controlled, pupils with working-class backgrounds failed much more often than others.[6]

In West Germany, several inquiries have been made into what is called *das Sitzenbleiberelend*, the grade-repeating misery. Professor Undeutsch reported at the 1959 convention of the German Psychological Association that most surveys had shown that less than 20 per cent of the pupils admitted on a competitive and selected basis to the 9-year Gymnasium reach their *Abitur* in due time. Another small group succeeds in graduating, but with a delay of one or more years, whereas the majority are drop-outs. The number of *Abiturienten* is far less than 10 per cent of an age group, although the West German economy needs at least 15 per cent. Professor Ralf Dahrendorf, in his recent book, *Arbeiterkinder an deutschen Universitäten*, has shown that of all first-year university students only six per cent are from working-class homes. This is in agreement with the findings from the International Project for the Evaluation of Educational Attainment (I.E.A.), which show that among the twelve countries West Germany has the highest social selectivity. Dr. George Picht, in a recent monograph on the German *Bildungskatastrofe* ("educational catastrophe"), pointed out that if all *Abiturienten* in the 60's were to enroll in institutions of higher learning in order to become teachers, there would be just about enough to satisfy the demand.

Social Factors in Relation to Equality of Opportunity

The study of social factors which can operate as barriers to equality of opportunity has in recent years been promoted by the Organization for Economic Cooperation and Development (OECD). Its publication, *Ability and Educational Opportunity*,[2] emerged from a conference organized in 1961 jointly by the Office of Scientific and Technical Personnel of OECD and the Swedish Ministry of Education. Among the participants were both researchers and top-level administrators within the Ministries of Education. A good deal of the pertinent research in this area has been conducted by British educational sociologists.

In the introduction to this paper, it was pointed out that within a selective system everyone would pay lip service to equality of opportunity. The immediate implication of this principle is that selection in a competitive situation should be made soley on the basis of ability and not with regard to economic or social background. What, then, are the criteria of "ability"? In most cases intelligence test scores, attainment test scores, school marks, and teacher ratings. But by closer inspection these criteria, as was already pointed out by Chicago researchers in the forties and studied in detail in Great Britain by a group of sociologists in the fifties, were "loaded" with social class factors. Thus, selection was socially biased and there was some evidence that the earlier the selection the heavier was this loading.

Estimates of the "Reserve of Ability"

A special field of study which is closely related to the one just dealt with is the attempts to estimate the size of the "reserve of ability" or "pool of ability," and attempts to assess the extent to which it is utilized.

It would bring us too far afield to delve into the technical problems that emerged in efforts in Sweden to identify and measure the reserves of ability. Some of the approaches can be indicated, however.

In 1945, the writer started to utilize data collected by the Swedish Central Conscript Bureau in connection with inductions to military service. By law, practically every man of 20 had to appear before an Induction Board for, among other things, a medical and psychological examination. Group-test data and school records made it possible to estimate the "pool of ability" with a technique similar to that later used by Dael Wolfle in his 1954 monograph on *America's Resources of Specialized Talent*.[12] Härnqvist of the University of Göthenburg used a follow-up approach whereby he could estimate the probability of success in secondary education for various levels of attainment in the elementary school. This was a much more elegant and accurate approach. Its technicalities are presented in the above-mentioned OECD publication and the 1962 Year Book of Educa-

tion,[4] which gives a rather complete record of the research carried out in Sweden in this area.

Cross-National Comparisons of School Systems

Comparative education has recently started to take advantage of the cross-national variation in certain important variables which can be expected to affect the "productivity" of various school systems by courageously trying to devise international evaluation instruments. This has been done in the domain of mathematics instruction in the International Project for the Evaluation of Education Attainment (the I.E.A. study). Social bias entering the secondary schools could be assessed by comparing the social-class distribution of the 13-year-olds, where one hundred per cent of the age group was still in full-time schooling, with the same distribution among the pupils in the pre-university year, i.e., in the terminal class of the secondary school. A selectivity index could be arrived at by relating the number of pupils at the terminal level in each social class with those in the schools for 13-year-olds. The selectivity index could then be related to the proportion of the age group in the pre-university year, i.e., in the terminal class. As could be expected, general selectivity is strongly related to social-class bias.

Of perhaps greater interest in this connection may be the attempts to estimate the "yields" of various school systems. It would be of only limited value, if not irrelevant, to compare, for instance, the average performance of a high-school graduate in the United States with, for instance, that of the pupils in England who are just about to sit for their G.C.E. examination A level. In the first place, the proportions of the age group in these two specific cases differ greatly. A comparison ought to be made with corresponding percentages. It would apparently be much more fruitful to compare, let us say, the 95th, the 90th, and the 75th percentile levels of pupils in the two types of schools. But this would not be fair to one school system taking care of a higher proportion of the age group than the other. One can, however, make the comparison by taking out the proportions of the total age groups at particular percentile levels. Thereby it is discovered that countries where educational opportunities are broadened do not suffer from "lowering of standards" measured by the achievements of a comparable proportion of the total age group. A quantitative increase in enrollment does not necessarily imply a decrease of quality.

Research on Curriculum Content

Another important problem area in secondary education, where empirical research can yield important contributions to the considerations of policy-makers, is related to curriculum content. One illustrative research program was carried out at the writer's institute in cooperation with the 1957 School Committee, which, according to its terms of reference, had to reconsider the objectives and hence the curriculum content of the upper section of the comprehensive school, i.e., grades 7 through 9. Five subject areas, namely, mathematics, mother tongue, physics, chemistry, and civics were the object of this research. Methods of teaching, time devoted to the various topics, and the outcomes of instruction were studied in representative classes. In cooperation with industry and commerce, analyses were made of requirements put upon employees in terms of topics included in the study. Retained knowledge and skills were assessed by means of tests given to school-leavers.

The 1960 Gymnasium Committee conducted an extensive study which comprised all the Swedish university professors and representative groups from the Civil Service, industry, and commerce. The *gymnasium* curriculum was divided into 65 small areas and the participants were, among other things, asked to rate these areas in two respects, their contribution to the university subject or the occupation which the rater represented and their contribution to general education.

The two studies have been presented in recent articles in the *International Review of Education*.[5, 7] An example will illustrate the kinds of leads that can be obtained not only for policy-makers but also for curriculum-constructors. Latin, on the whole, has been studied with the same objectives for more than a hundred years. The pupil was expected to be able to read classical authors. But it turned out that in the university evaluation Latin was to be regarded as primarily a vocational subject. It should prepare students who wanted to specialize in the study of modern languages (not to mention preparation for teaching Latin and the study of history). Most agreed that the important contribution that Latin could make to general education would be to give an etymological dimension to the study of modern languages in the secondary school. The capacity to read classical authors was not a primary goal.

Class-Room Implementation of Educational Research

School reforms to a great extent will have to be implemented in class rooms. There are tremendous implications for teacher training and in-service training. In several countries policy-makers (especially at the governmental and parliamental level) are far ahead of the teachers in their conception of the organization and the functions of the school. Policy

desicions on school organization have repercussions on curriculum construction and instructional practices. For instance, the keeping of heterogeneous classes and abolition of grade-repeating call for more individual instruction.

One striking feature of the school reforms, at least in Europe, is the strong resistance to change that especially secondary-school teachers in some countries have shown. In Sweden, the majority of subject teachers were against the grouping procedures decided by the Parliament and codified in the 1962 Education Act. In West Germany, the *Philologenverband* is strongly opposed even to moderate change proposed by the *Deutscher Ausschuss für das Bildungs- und Erziehungswesens.* This attitude, apart from institutional factors that account for resistance, might be ascribed to lack of awareness among teachers of the social implications of the school. Many teachers conceive of their role mainly in terms of purely instructional performances. It is as if the school operated in a social vacuum. Therefore, in following up policy decisions on educational change, one must very carefully consider the consequences for teacher training. Extensive in-service programs may have to be embarked upon. Surveys pertaining to information and attitude will have to be made so as to get a basis for the measures that will have to be taken. Marklund[8] made an investigation, on behalf of the 1957 Swedish School Committee, of all the trainee teachers who were just about to finish their training. The teachers' knowledge of the reform of education —aims, reorganization, methods of instruction, and consequences for the teachers—was measured by an information test. The teachers' attitude toward the reform was measured by an inventory containing statements about the reform taken from the daily press, teachers' periodicals, etc. Prospective class teachers (teaching grades 1 through 6) expressed a more positive attitude toward reform than did subject teachers (teaching grades 7 through 12). The correlation between information scores and attitude scores for subject teachers was as high as .5. The hypothesis advanced, that the attitudes of the teachers whose teaching situation will change more profoundly as a result of the reform will be more negative than those whose situation will largely be unchanged, was verified.

The fact that attitudes and information correlated more highly among secondary teachers than among primary teachers was explained by the same hypothesis, namely, that those whose situation tends to change greatly tend to be more emotionally involved.

The Question of Freedom of Research

But what about the freedom of research in terms of choosing problems and methods of inquiry? Would it not be endangered by getting assignments from policy-makers? If a research institution, inside or outside a university, is approached by, for instance, the Ministry, which proposes a study of a problem related to school organization and is willing to pay the bill, what is left of the freedom of the research worker? Well, he can of course turn down the proposal. But let us assume that he accepts it. Will he succeed in preserving his integrity? In the first place, the researcher has a rather wide margin of freedom in the sense that he must almost without exception have to re-frame the problem turned over to him by the policymaker, split it up into sub-problems and bring out its implications before he can try to work out a design as a basis for a budget to be submitted to his Ministry. Secondly, the writer cannot remember any case when he and his colleagues have not had complete freedom in choosing the methods for tackling the problems presented. Thirdly, when collecting data and analyzing them, in spite of very often conducting the study within a tight time schedule, the research worker encounters problems that otherwise he would not have met, problems that are really basic.

Utilitarian, short-time research can even promote the kind of inquiry that academicians usually praise at their banquets, namely, research that is of no use to anybody.

REFERENCES

1. *Early Leaving.* London: Her Majesty's Stationary Office. 1954.
2. Halsey, A. H. (ed.) *Ability and Educational Opportunity.* Paris: Organization for Economic Co-operation and Development. 1961.
3. Husén, T. *Problems of Differentiation in Swedish Compulsory Schooling.* Stockholm: Scandinavian University Books. 1962.
4. Husén, T. "Detection of Ability and Selection for Educational Purposes in Sweden." *Year Book of Education 1962,* London and New York, 1963, pp. 295–314.
5. Husén, T. "Curriculum Research in Sweden." *International Review of Education,* Vol. XI, No. 2, 1965, pp. 189–208.
6. Husén, T. "A Case Study in Policy-Oriented Research: The Swedish School Reforms." THE SCHOOL REVIEW, Vol. 73, No. 3, 1965, pp. 206–225.
7. Husén, T. and Dahlloef U. "An Empirical Approach to the Problem of Curriculum Content." INTERNATIONAL REVIEW OF EDUCATION, Vol. XI, No. 1, 1965, pp. 51–76.
8. Marklund, S. *Skolreformen och lärarutbildningen (The School Reform and Teacher Education).* Stockholm: Government Printing Office. 1960.
9. Orring, J. *Flyttning, kvarsittning och utkuggning i högre skolor.* Stockholm: Government Printing Office. 1959.
10. Pidgeon, D. A. and Yates, F. *Admission to Secondary Education.* London: National Foundation for Educational Research. 1957.
11. Vernon, P. E. *Selection for Secondary Education.* London: Methuen. 1957.
12. Wolfle, Dael. *America's Resources of Specialized Talent.* New York: Harper. 1954.

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