This article reviews Swedish research from around 1980 and onwards concerning teacher education, predominantly the education of teachers for the comprehensive school. It is organised into 8 parts, (i) The status of international teacher education research, (ii) Historically oriented studies of Swedish teacher education, (iii) Investigations concerning the recruitment of teacher students, (iv) The role of the school-based studies in basic teacher education, (v) The content of the university-based studies in basic teacher education, (vi) The effects of basic teacher education, (vi) Investigations into in-service training of teachers, and (viii) Concluding, evaluative remarks.

An overall purpose is to evaluate the Swedish research against the characterisations of international research on teacher education provided by the editors of Handbook of research on teacher education (Houston, Haberman & Sikula 1990), Research in teacher education: International perspectives (Tisher & Wideen 1990) and Teachers¹ Professional Learning (Calderhead 1988). It is demonstrated in the first part of the article that these editors share the opinion of the scientific standard as being low and that "the adjectives 'exciting', 'stimulating', 'barrier-breaking', 'trend-setting', 'knowledge-expanding' and 'innovative' can hardly be used to describe research of this nature" (Tisher & Wideen 1990 p 256). Furthermore, teacher education research is said to play a minor role in the formulation of national policies, at least in England, since "... there is little hard evidence or sound theoretical understanding from which policy can be derived..." (Calderhead 1988a p 1f). The question we pose is if the same picture emerges when reviewing the corresponding Swedish research.

The interest in research on the history of teacher education has been weak but seems to be growing. Common characteristics of the studies we have reviewed are that they are firmly based on theories, like frame factor, bureaucratization and professionalization theories, and focus how institutions for training specific categories of teachers have developed different traditions with respect to goals and orientations as well as the background and nature of these traditions. In a few cases, the analyses have also included the threats to the traditions and the conflicts arising between them when the older forms of teacher education have been merged into a new and common university education. A couple of these studies have especially directed the spotlight on the education of female teachers, the devaluation and discrimination of them, and their struggle for "the teacher¹s chair" as well as for equality of status and salary.

For about 20 years overviews have been published every year showing the results of selection to all professional schools, including teacher education and the various branches within these schools. There are, however, only a few studies analysing the changes of recruitment to teacher education with respect to sex, age, social background and amount and type of earlier schooling over a longer period of time in one case from 1860 to 1972 or the orientations of becoming teachers today. It has been demonstrated among other things that recruitment and training interacted until at least 1960 in reproducing dominant values and norms as well as classes and class differences in the society, and that teachers generally are recruited among those who have performed moderately well but have been
extremely well adjusted in school. Thus, both types of studies indicate
that teacher education only rarely attracts students highly critical toward
the school or its teachers, and that teacher education may confirm already
existing beliefs and convictions, if the programmes do not encourage
critical reflections concerning schools, schooling and teaching.

The latest state inquiry on teacher education (SOU 1978) argued for the
importance of helping both student teachers and practising teachers to
develop a 'practical theory' of their own to guide their work as teachers,
which ought to be founded on values and ideas, shared by all teachers, and
be as explicitly formulated as possible. Otherwise a collective basis of
professional knowledge cannot be developed. This is the background for a
handful studies of the guidance and supervision provided in the school-
based part of teacher education.

These investigations have adopted various theoretical perspectives as well
as methods. Common to them is the reliance on qualitative analyses of tape-
recorded conversations between student teachers and their supervisors or
visiting university tutors, as well as of interviews with the actors. All
studies show that the teacher educators have different goals and
conceptions of tutoring: Some supervisors were found to be more problem-
oriented and expressing a reflective perspective of the teacher's
professional knowledge, while others expected the trainee teacher to take
their views for granted and to treat the pupils the same way as they would
have done themselves. The remarks were often 'episode-oriented' or
'atomistic', which made it impossible for the trainee teachers to
understand their origin in a practical theory and, of course, the content
of this theory. When the implicit practical theories held by university
tutors were analysed from interviews based upon the content of tutoring
sessions, the tutors were found to have very different conceptions of
knowledge and learning, of the teacher's role in the classroom etc, and,
thus, to stress different aspects of teaching and often disparate opinions
about the same thing. They were also highly ignorant of other tutors' views, though they had been colleagues for many years.

It is evident that both supervisors and visiting teacher educators act
independently, and that a common view on teaching and tutoring does not
exist. It is an open question whether a common view on teaching is
desirable or not, for pluralism is the engine of development, but if the
existing practical theories are not open for inspection and scrutiny,
colleagues and students cannot contribute to their development. There have
been no studies analysing the effects of this pluralism on the
socialisation of becoming teachers.

The way the university-based content is taught within a department does
probably also reflect the private and implicit practical theories held by
the individual teacher educators. In a study, a large number of different
opinions about the importance of the school curriculum to teacher education
and notions about teachers' work and knowledge as well as the objectives
and curriculum of teacher education were identified in protocols from
semistructured interviews with teacher educators within the same
department. A similarity analysis revealed three patterns, considered to
reflect a 'progressive', a 'cultural-conservative' and a 'cultural-radical'
ideology. The 'progressives' stressed psychological theory as a normative
basis for teachers and personality development as a goal in teacher
education, and contained teachers of educational theory, classroom
methodologists, teachers in aesthetic subjects and subject teachers in
biology. 'Conservatives' were upholding teacher autonomy, demonstrated
indifference or negativism towards the school's curriculum, and emphasized
disciplinary subject knowledge. They were recruited from teachers of
subject theory and subject methods. 'Radicals' stressed the role of the
teacher and the school in changing the society, either by providing the
pupils with the intellectual tools necessary for a critical analysis of society, or by preparing them for practical actions as change agents. They belonged to a wider spectrum of teacher categories.

The 'progressive' ideology seems to be related to progressivism as a philosophical tradition, 'cultural radicalism' to the reconstructivistic tradition, and 'cultural conservatism' to have some elements common to both essentialism and perennialism. 'Progressivism' is also discernible as a tradition associated with the former seminaries for classroom teachers and 'cultural conservatism' with the former university education of teachers in disciplinary based school subjects.

The existence of conflicting views even within the same subject area is demonstrated by another study. Two courses in science teaching, considered to comprise subject theory and subject curriculum theory components, were analysed in detail for two successive years. Three different 'models of teaching' were identified, each taught as if no other alternatives existed, i. e. in an indoctrinating manner. One of them, the 'subject theory model' was the most influential, and its shadow was said to be continuously cast over the curriculum theory components of the courses, where the other two models were put into practice. Though some actors may have tried to understand the perspectives that others held, no real effort could be observed to develop a truly cohesive programme.

There is, accordingly, little or no cohesiveness as to views on educational matters within a department, and different 'ideologies', 'models of teaching' or 'paradigms' may dominate different courses, as the studies referred to above indicate. Consequently, the goals and content of teacher education as well as its effects may vary from department to department in the country depending upon the traditions existing and the composition of the staff, which has been confirmed in a recent study focusing how the national guide-lines for teacher education were interpreted and implemented by a dozen universities and university colleges.

In spite of the interest in studying and analysing traditions, 'ideologies' and the (lack of) cohesiveness of teacher education, only two Swedish researchers have carried out studies of the effects of teacher education describing other outcomes than pass-fail rates. Both are interesting from the point of view that they tried to identify effects of training seldom considered in these kind of studies.

One of them compared how pre-school student teachers and a control group, consisting of physiotherapy students, apprehended and described a group of spontaneously playing children, at three occasions during their professional education. The children were divided into three groups, videotaped for about 10 minutes per group. The subjects saw the three films in different order and all films were shown equally often at each occasion. The subjects' task was to describe what the children were doing. The descriptions were considered to be 'fragmented', when different and unrelated events were related to, 'partial', if a seemingly important detail among the events was focused, and 'chronological' if the events were related in a chronological order. The denotation 'abstracted account' was reserved for the case when a principle was referred to, summarising the total course of events.

Both groups were distributed equally over the categories at the first occasion. While the teacher students changed systematically and irreversibly in the order fragmented partial chronological abstracted from the first to the third session, the distributions of the control subjects were unchanged, and individual reversals occurred as often as progresses. Accordingly, the way teacher students apprehend groups of
playing children seemed to have been affected by the experiences they have had during teacher education. It is, however, impossible to say which specific experiences have been decisive.

The other study demonstrated among other things that becoming pre-school teachers became less 'child-referenced' and 'psychologised' and more concerned with the activities of the adults towards the end of their training, and in accordance to the theoretical study programme. However, another group that had been trained when the programme was highly 'child-referenced' and 'psychologised' did in fact demonstrate the same development. Accordingly, the practice during the school-based studies seems to have greater effects on the students educational views than the theoretical study programme, which is, of course, a memento for the planners.

A new system for State financial support of local development work and in-service training of teachers was introduced in 1982. The funds were allocated to the municipalities and their distribution was to be organised by the politically elected local school boards. Local school development projects were thus regarded as a key strategy of in-service education. Specific courses for in-service purposes were established as a supplementary strategy in which universities and university colleges played a dominating role.

In-service education of teachers per se has, for unknown reasons, been totally unattractive to Swedish educational researchers, who have been more interested in analysing how local development work is carried through and what effects are achieved.

According to the official view of school-based innovative work, what is intended and why, should be formulated and the results evaluated against the curriculum goals, but it was found in a study based on phenomenographical analyses of interviews with teachers in development projects, that this official, 'technical rationality' type of view, corresponds to only one of four kinds of conceptions that teachers have of innovative work and the activities which the innovations are intended to bring out, namely evaluating a new teaching content. Among the other conceptions of innovative work 'development of a new practice as content', 'adoption of a new practice as content' and 'adoption of a new practice as form' development was governed by a 'pragmatic rationality' and the adoption of an 'empathic rationality'. Thus, the in-service courses given to support teachers in doing development work have to adapt to the existing purposes behind this and not to the official view.

An investigation, based on field-observations and interviews and targeting how development work affects the everyday classroom work of teachers, studied female teachers at the primary stage when they had extra funds to use for development projects and also when the funds had expired. The primary value of the projects turned out to be the effects they had on personality development and collegiality the opportunities the projects had given the teachers to combine their personal and professional competence and identities and to learn to co-operate with and trust their colleagues in the staff. The same study also elucidates the motives for doing development work. It is i. a. argued that the motivation among women to become a good teacher is as strong or stronger than the wish to find a higher position, and that the carrier concept cannot only be understood as upward mobility; it must as well have a horizontal extension and include deeper insights and personal development, co-operation, increased self-esteem and informal influence.

A conclusion to be drawn from our review is that Swedish research on teacher education has been national. We have found no attempts to compare Sweden with other countries. Among other things the list of references
makes it clear that the theoretical and methodological approaches used in the studies are firmly anchored in international educational research. We have distinguished between research about and research for teacher education, i.e. between descriptive-analytical versus prescriptive research, and reviewed research of the first-mentioned kind. This does not imply that the results cannot be utilised in order to change teacher education. This depends upon whether planners use them as a basis for decision making or not. A recent evaluation report on teacher education, initially commissioned by the Social-Democratic government 1989, illustrates that this is not always the case. It was presented in 1992 to the then new Liberal-Conservative government which did not take any measures.

The majority of the studies have been concerned with the background and nature of the contextual determinants of teacher education or have highlighted them as explanations to various findings. In our view Swedish research in this respect favourably differs from much international research. It could of course be argued, that research closely linked to national policies and local particulars narrows the possibilities for comparisons, but we would rather emphasise that a note of warning against international comparisons is at place, especially at present and in the perspective of a common Europe when comparative statistics concerning teacher education is produced en mass.

Swedish research on teacher education has to a large extent been pursued by teacher educators who have recently obtained better though still unsatisfactory conditions for research. It cannot be considered a major area of educational research in Sweden if a quantitative standard is applied, but the number of studies is steadily accelerating. Carried out within departments of education it is a part of general educational research theoretically as well as methodologically, and since these departments belong to and at present are firmly embedded in the social sciences, educational psychology is underrepresented in comparison to other countries.

The criticism levelled against international research on teacher education and mentioned in the introduction, is in our view not applicable on the research we have reviewed. In contrast to e.g. Tisher and Wideen (1990a, p 256) we have not observed "unwarrented overkill with sophisticated statistical analyses", nor studies "with no relevant theoretical frameworks", and it is evident from the review that the researchers have had the ambition to refer to as well as control findings made by others, i.e. "replicate the the work of others".

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In this lecture three different themes are explored. The first is the development of teacher education, the second epistemological aspects on special education, and finally some preferable trends for the future.
In 1977 all teacher education in Sweden from pre-school to upper secondary school level were incorporated into one organisation, Stockholm Institute of Education, which is linked to the university through the faculties. Despite their common organisational structure these educations tend to be very different and to be based on different traditions. Some are focused on knowledge of child development and psychological aspects while others are more didactically oriented and emphasise aspects of content and the teaching-learning process. Generally, it can therefore be argued that the co-operation between and integration of different teacher educations has been limited. Characteristically, special education has been defined as a supplementary education for specialists and not general knowledge indispensible in all teacher education.

Other traditions that have been difficult to integrate in teacher education are the theoretical "university" tradition and the practical "seminary" tradition. The former is based on scientific knowledge and methods of investigation and the latter on practical experience and model learning. Recently, there has been in Stockholm a conscious and intentional trend to incorporate research into all teacher education. This also implies that researchers and teacher educators work together in formulating problems and designing research activities. Of course there are problems in this integration process. Researchers may feel that more basic and theoretical questions are being neglected and teachers are afraid that their practical experience will not be appreciated.

In Sweden pecial education has been incorporated into the general educational research field and has followed the same trend as that area. Education as a scientific discipline was originally very broadly defined by its first professor, Bertil Hammar, in 1905. In his inauguration lecture he claimed that it consisted of three basic elements: the educational content or goals, the psychological field of knowledge (e.g. child development) and the social or societal field of knowledge (e.g. the organisation and performance of educational activities). This broad introduction of the field was never fulfilled. Instead, all the subsequent professors at the beginning of the century concentrated their research on psychological questions and tried to methodologically imitate the natural sciences. In 1948 psychology became a subject of its own and after that sociological and historical/philosophical issues have slowly begun to take over as the most important research areas. This trend has been evident also within the special education field where the focus on treatment of individual difficulties has changed towards critical studies of the role of special education in society and how schooling in itself both creates and maintains problematic behaviour.

Gunnar Kylén, former associate professor at the department of special education in Stockholm, has developed a holistic model that has been found very useful not only within the special education field but also in general to illustrate the interdisciplinary approach in educational issues. He postulates that human beings interact with their environment and that both human beings and environment consist of experiential and material matter. This results in four epistemological areas: psychology = the experiencing human being, biology = the material human being, sociology = the experiencing environment and physics = the material environment. Examples from the psychological field could be learning difficulties or lack of self confidence in relation to schooling, from the biological field it could be different types of functional impairments. The sociological field is very broad and includes varying levels such as societal views on deviancy, priority of resources and the professional status of special teachers. It also has to do with classroom relations, mobbing, ethnic/cultural differences and parental influences with regard to schooling or appreciation of the child. In the physical area focus is on the use of technical and other devices to facilitate learning and development as well
as more general stimulating factors in the physical surroundings. None of the above-mentioned areas alone form the focus of special educational research. It is rather the interaction of individual psychological and biological prerequisites and social and physical demands in the environment which is crucial to this field.

The holistic model is not specifically adapted to the educational process with an intentional goal-directed activity aiming towards change and enhancement of optimal development. In my own research of heredity-environment influences I found that interactional effects were often very powerful. This means that the same treatment can have varying outcomes in different individuals and also that varying treatments can have the same effect. Sometimes the aim is to increase variation and sometimes to decrease it. In a more permissive environment individuals tend to choose according to their own prerequisites and thus the influence of psychological and biological factors will increase. In a more restrictive and structured environment, on the other hand, social and physical influences will be more powerful. Both permissive and restrictive environments can be more or less stimulating and the results from twin research has led to the development of an educational model of interaction incorporating both process and product influences.

In this model individual prerequisites (e.g. gender, maturity, functional impairment etc.) and experiences (e.g. from the home, living area, ethnical/cultural traditions etc.) interact with educational influences at different levels (e.g. teacher, school, regional and societal) to produce changes in for instance knowledge, behaviour, attitudes etc. A permissive and stimulating environment could be called a project-learning situation where the teacher functions as a supervisor and gives feed-back to pupil suggestions. A restrictive and stimulating situation is characterised by authoritative teaching where the teacher defines the goals and ways of reaching them but at the same time allows the pupils to influence their own learning and showis respect for each individual. In a permissive and non-stimulating situation the students are free to plan their own learning but they get very little feed-back and therefore the goal is often not reached. Finally, the restrictive and non-stimulating situation is characterised by authoritarian teaching with very little pupil influence. The model has been used to study interactional processes in many different educational areas such as physical training, medical and physiotherapeutic treatment, educational evaluation, methodological comparisons as well as special educational goals and processes. Summarising the above-mentioned, something should be said about the future:

• Special education is a broad and interdisciplinary area and thus it is vital to integrate and develop this perspective further.
• Research and development has so far been fairly limited in Sweden and it has mainly taken place within general education or other disciplines. It is therefore necessary to increase financing and support of the special educational research field.
• Within all these themes we try to integrate research and teacher education. To do this we apply both deductive and inductive approaches.
• Finally, in view of diminishing resources and increasing heterogeneity, the inclusion of special educational knowledge in basic teacher education is vital in order to avoid the situation where "experts" are supposed to take care of problems created by the regular school system.

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