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Teachers' Professional Core Competencies

Pedagogy and Educational Science in Swedish Teacher Education

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Abstract
Concepts of Pedagogy[2] about nurture/cultivation, learning and education originate from our ancient cultural heritage, but Pedagogy as an academic discipline was established in Sweden more than a hundred years ago to provide teacher education with a scientific basis. Education and its goals and means became essential societal issues in connection with industrialization, and Pedagogy, as a field of knowledge, has had, and still has, great significance in the shaping of society. Evidently, Pedagogy in the post-World War era has been put forward by various stakeholders to legitimize positions and actions in a field of tension between science, politics and education. This text presents the position and function of pedagogy in Swedish teacher education with emphasis on the ways in which the discipline has been treated in connection with the major teacher education reforms in Sweden that followed the founding of the nine- year compulsory school (Grundskolan) in 1962 up to today. Particular attention will be paid to the term "utbildningsvetenskap" (educational science), which was introduced in the 1990s and established at the turn of the millennium when an "educational science core" was prescribed in teacher education. At the same time, an Education Science Committee was formed within the Swedish Research Council to promote "research on learning, generation of knowledge, education and teaching". Educational science arose as a way out of a sometimes tense relationship between traditional pedagogy and a more modern, content-oriented, didactic research stream in order to strengthen teachers' scientific knowledge base and professional identity. Nevertheless, educational science remains imprecise, seeking an identity in relation to other more established pedagogical disciplines.

Keywords
Pedagogy/pedagogik, didactics/didaktik, educational science, utbildningsvetenskap, Swedish Teacher Education.

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[2] Pedagogy is used here as an equivalent to the Swedish term '*Pedagogik*', which sometimes corresponds to English 'education' and French 'éducation' and sometimes not.

Introduction

Historically, in Sweden the subject Pedagogy has been linked to teacher education. Requirements concerning teachers' pedagogical skills are found in school regulations and statutes from the 16th century, but pedagogy as a requirement for prospective teachers at the country's universities was introduced much later (Lindberg & Berge, 1988; Lindberg, 2011). In a royal letter from 1803, issued at the request of the Chancellor's Guild (*Kanslergillet*) [3], it was stipulated that prospective teachers should be examined in, *inter alia*, pedagogy and didactics, and that lectures in pedagogy at the country's three universities were accepted.

However, the subject's place in teacher education was not immediately obvious; there were strong voices that questioned its necessity and utility, at least for university and college teachers. Education in the subjects to be taught was what counted most. Education and training in pedagogic instruction was considered more appropriate for teachers of the "non-literate classes in society" who were often priests, so it was suggested that such education should be part of the priesthood seminary program and the public school teachers' seminars (Lindberg & Berge, 1988, pp. 15-17). The latter were established in connection with the 1842 primary school statute in all episcopal cities. Studying Pedagogy at these seminars originally meant specific methodology. After a few years, the seminars were expanded to include lectures in general methodology, educational history and psychology (Sjöstrand, 1965).

At the beginning of the 20th century, the *Riksdag* (parliament) raised the question of a professorship in Pedagogy in order to strengthen the university and college teachers' professional education with a scientific basis. Among the arguments put forward when the *Riksdag* discussed the Bill in 1906 were that Chairs in Pedagogy had been established at several European and North American universities, that the subject's knowledge base and methods for solving educational problems were considered fully comparable to those in other sciences, and that study plans already existed in the subject at university. The Bill was not approved and a new inquiry was commissioned, resulting in a *Riksdag* decision in 1907 to allocate funds only for a professorship in Uppsala, but not in Lund, since the Consistory there considered that one of the professors in Philosophy could undertake teaching Theoretical Pedagogy as well. Two professors in

[3] A committee, founded in 1801, which consisted of the chancellors of the three universities Uppsala, Turku (belonging to Sweden at that time) and Lund. The Chancellor's Guild had an overview of the universities and the educational system and was responsible for reforming the school system.

Lund found this solution unsuitable, and in 1909 the Humanities faculty proposed that Pedagogy should be practised in seminars and not just studied theoretically, which indicated the need to establish a professorship. By doing so, people who studied in Lund could also qualify to serve as primary school inspectors and headmasters, just like those who studied in Uppsala. The Humanities faculty endorsed the professors' request with an amendment to the Consistory to establish a professorship in psychology and pedagogy. The proposal was forwarded to the Chancellor of the University, who approved it with the addition that only the part of psychology related to pedagogy, for example experimental psychology, should be included in the scope of the Pedagogy professorship. Consequently, in 1911, the *Riksdag* granted funding for the establishment of a Professorship in *Psychology and Pedagogy* at Lund University (Lindberg & Berge, 1988; Kroksmark, 1991).

How the professorship in the new "pedagogical" field of knowledge should be termed was the subject of extensive discussion. Inspired by Lund's professorship in psychology and pedagogy, Uppsala University also wanted, after the first professor, Bertil Hammer, passed away in 1929, to change the title of the chair as Lund University had done. One of the main arguments was that psychology was one of the basic sciences of pedagogy. The National Board of Education, to which the proposal was referred, did not find sufficient reasons to change the professorship in pedagogy to a professorship in psychology and pedagogy. On the contrary, they saw a risk that pedagogy would be overshadowed by psychology, while there were other important auxiliary sciences to pedagogy such as practical philosophy, ethics, cultural history and sociology. The same view was also shared by the central board of the Swedish Association of Public School Teachers (*Sveriges Allmänna Folkskollärarföreningen*), which had long strived to establish a professorship in pedagogy as a stage in the teachers' professionalisation process. (a.a)

There was a similar development at the University of Gothenburg, where a chair in philosophy and pedagogy was established as early as 1913, but this was later transformed into a professorship in "psychology and pedagogy" in 1936. As regards Stockholm University[4], the first professorship in pedagogy was named “Olof Eneroth's Professorship” after the person who donated money for a professorship in:

[4] Stockholm College was established as an alternative to the traditional universities in Uppsala and Lund and granted university status in 1960. Thereby, Stockholm University became a part of Sweden’s

> "*... the doctrine of the connection between the natural laws and the moral and physical nature of man, with special regard to the upbringing of the growing family to spiritual and physical health, with particular regard to the upbringing of the rising generation to spiritual and physical health*" (Olof Eneroth's testament, 1876 in Lindberg & Berge, 1988, p. 23, our translation)

The content of pedagogy as an academic discipline of knowledge will, in the following, be traced in the various positions taken by a selection of central representatives of the discipline and in the official investigations and propositions that form the basis for regular teacher-education reforms. The last part of the chapter charts and discusses the current status of educational sciences in initial teacher education and training at the Swedish universities and university colleges.

Pedagogy: We know what it is, yet not

The term *pedagogy* is used today with different meanings depending on the context to which we refer. While the everyday use of the term is rather problematic, the scientific community does not have an acceptable definition of what it is and what it means (Nilsson Sjöberg ed., 2018). In the first case, pedagogy indicates the transfer of knowledge between individuals in a pedagogical way, that is, in a way that makes this transfer successful, and above all, the ability to convey a message. How many times have we said or heard that someone or something is (or is not) pedagogical? It should be noted that this designation refers not only to people but also to things, such as a book or the presentation of a political program. It often happens that politicians who fail in an election try to justify themselves by saying that they lagged behind in their 'pedagogy', so the voters failed to understand their positions. In this case, politicians are convinced that their positions are right and that the problem is a matter of …pedagogy!

The academic view of pedagogy is much broader, encompassing the full range of research and theories that have in common the processes of influence and change that take place at individual, group, organization and society levels - not only in educational institutions but also in other environments where people come into contact and communicate with each other.

infrastructure for education and research (www.su.se/english/about/facts-figures/the-history-of-stockholm-university-1.22103) .

It is a narrow perception that education is an activity of a professional teacher-craftsman who processes some material, the apprentice, to shape it according to a predetermined form. In this sense, pedagogy is relegated to a kind of technology that specifies the rules and manipulations of the teacher-craftsman.

The opinion that this is an excessively narrow view of the phenomenon of education was expressed by Bertil Hammer, the first professor in the chair of pedagogy at Uppsala University, in his inaugural speech in 1919:

> *Nurture (education) is something else and more than a professional activity of a few individuals; it is a life process, a developmental process; it is the new generations who grow up and grow into social life and culture; it is a piece of history: the history of the transfer of cultural heritage from generation to generation. For the theoretical educator, then, education is not really an activity for which he should write laws but a process, a course of development which he will describe and understand*. (Bertil Hammer, in Lindberg & Berge 1988, p. 32 et seq., our translation).

From another standpoint, pedagogy is seen as a process of communication and influence, inherent not only in organized education but in all human relationships, working through communication:

> "*Pedagogy as a science deals with different aspects of the so-called educational process ("the process of education"). This means that in every society and in every culture a constant influence is exerted on the people, with the intention that, through learning, they should be shaped in the best possible way in accordance with what society and culture want them to be*." (Sjöstrand, 1968, p. 22, our translation)[5]

Communication through linguistic and paralinguistic signs is the driving force of human culture (Dewey, 1916/1966) [6] and the binding substance of society, as long as it is integrative and participatory (democratic), that is, socially sustainable. Although there are different approaches to pedagogy as a scientific discipline and social practice, the common view is that it deals with nurture, teaching and education in general.

[5] Wilhelm Sjöstrand, 1909-1989, was a professor of educational psychology at Uppsala University.

[6] "Society exists through a process of transmission quite as much as biological life. This transmission occurs by means of communication of habits of doing, thinking, and feeling from the older to the younger." (p.3).

Therefore, pedagogy is a basic parameter of human existence; it is no wonder that there are different ideas and norms concerning its purpose and methods.

In his inaugural speech, Bertil Hammer tried to delineate the discipline of pedagogy:

> *To understand what a science is and wants, answers to the following three questions are required: What is the subject of the study? What problems does this question pose? With what research methods does it seek to solve its problems?* (Bertil Hammer, 1910)

Pedagogy as a subject is rooted in several knowledge traditions. It has emerged in interaction with, for example, philosophy, sociology and psychology; it has also developed its own theories and language. The subject's identity is shaped by phenomena such as nurture/cultivation, education, teaching and learning, which in turn are affected by various societal changes, both nationally and globally (Nilsson Sjöberg ed., 2018; Hartman, 2009; Ödman, 1995; Kroksmark, 1991). Both theoretical and practical knowledge in pedagogy are necessary for all those who have the task of leading learning processes and developing an understanding of the goals, content, organization, means, views of knowledge, people and society in education and training. Since pedagogy was institutionalized as a university subject in the early 20th century, it has served as a knowledge base for teachers at various levels. The establishment of pedagogy as a scientific discipline in Sweden was part of the primary school teachers' struggle for professionalisation and resulted in an extension of teacher education (Florin, 1987). The same is true today. Educational research in the knowledge and information society faces major challenges and demands from the political level to deliver solutions that create good conditions for learning and acquiring skills, innovation and competition, rapid changes in production and the labour market, democracy, risk minimization, sustainability and social cohesion (UNESCO, 2005; van Weert, 2006).

From time to time, pedagogical research is criticized in public discourse as being irrelevant to the actual problems and needs of the school and the teaching profession (see, for example, Fritzell, 2011). In Sweden, the debate about the position of pedagogy in teacher education was lively during the 1990s. It was also during this period that a shift occurred, from a North Continental way of thinking and organizing pedagogical research towards an Anglo-Saxon way of thinking, in Swedish education and research policy (Sundberg, 2018; Biesta, 2011; Lindeberg, 2002). According to the North

Continental tradition, pedagogical research is organized according to the discipline's own knowledge traditions and theories; that is, the study object/research area is framed and seen like a "map". In the other, Anglo-Saxon tradition, interest is focused on how the study object should be studied empirically, like a "terrain", by using theories from several different disciplines (Sundberg, 2018). These two traditions are also termed differently, where *pedagogy* alludes to the North Continental tradition and *educational sciences* to the Anglo-Saxon. One effect of this development is that the pedagogical research area has become broader but also more contourless and elusive, which gives the impression that the discipline suffers from blurred identity (Lagemann, 2000). Of course, this description is not shared by everyone; it may be attributed to the lack of pedagogical and didactic historical awareness, which makes it difficult for these subjects to find their own profile. It may be the case with pedagogy and didactics that they shoulder a legacy of dealing with deeply disputed phenomena and concepts about which there are different perceptions of right and wrong, which makes them vague (Kroksmark ed., 2003).

About teacher education's research base

For a long time, pedagogy (and psychology) was perceived as the research base of teacher education, not least in connection with perhaps the greatest educational policy reform of the 20th century, which was the introduction of the compulsory 9-year school (*Grundskolan*) in 1962 (SOU 1948: 27; Hartman, 2009; Hartman, 2012)[7]. When the teacher-training colleges were formed in the 1950s, it was proposed to establish a professorship in pedagogy at each teacher-training college with a focus on the actual professional education that teacher education had to provide prospective teachers with. This vocational training was assumed to take place in contact with pedagogical and psychological research and to be conducted at the teacher training colleges:

> "*It should be emphasized that the main task will be to enrich teacher education as far as possible with a scientific approach to nurturing and teaching problems and, therefore, to provide students with the opportunity to participate, to some extent actively, in the pedagogical research work with material from ongoing large*

[7] The educational policy ideas presented in the main report of the 1946 School Commission have formed the basis for the major educational reforms in Sweden and many of the main lines formulated there continued to influence pedagogical thinking and debate in the country.

> *experimental activities*[8] *and from the teacher training college's own experimental school in accordance with what has been developed above. The research in question would thus be mainly focused on scientific investigation of pedagogical application issues. For this particular part of the vast domains of pedagogy, the term school research would possibly be practically useful*." (SOU 1952:33, p. 28, our translation)

The creation of teacher-training colleges was motivated by the belief that the new 9-year school (*Grundskolan*) required in-depth pedagogical training of teachers. In addition, integrated teacher training colleges for different groups of teachers would eliminate the tension that existed between the primary school teachers and the university-educated high school teachers. It was also hoped that the new teacher training colleges, with different teacher traditions represented, one focusing on teaching issues (practice) and the other on the subject (theory), would be brought together into a new whole. The academicization of teacher education would also strengthen its scientific basis (Hartman, 2012). The teacher-training college reform was a natural consequence of the compulsory school reform. Many of the teachers who actively worked with alternative working methods during the 1950s were linked to the teacher colleges. Some of the researchers who were involved in large research projects and who analyzed the conditions for the compulsory school reform were later recruited as pedagogy professors at the teacher colleges to conduct school-oriented research. The division between a general pedagogical branch of the pedagogical discipline and a school-oriented one was a fact and would eventually be expanded with more pedagogical specializations (a.a.)

A milestone in the history of teacher education is the 1977 university reform, when teacher colleges were merged into a unified HE landscape regulated by common legislation. Ideologically, the restructuring of the HE sector in the 1970s was characterized by efforts to make higher education accessible to new groups of students and more adapted to the needs of society and the labour market. The incorporation of several previous post-secondary education programs into the university college system was intended to increase equality by reducing the status differences that existed between university education and other post-secondary education programs. (SOU 1973: 2; Gougoulakis & Fredriksson, 2019). The higher education reform meant that teacher

[8] Refers to the experimental activities that had preceded the introduction of the compulsory 9-year school in 1962.

education would follow the Higher Education Ordinance's requirements for research affiliation and that the education would be based on scientific grounds. However, the requirement for research connection was interpreted in slightly different ways at each university college. The merging of the different traditions also led to conflicts of interest between, on the one hand, teacher education's need for connection to practice, vocational relevance and coordination and, on the other hand, the university's other departments, which were mainly focused on subject specialization and postgraduate education (Hartman, 2012). It was not uncommon to have two 'pedagogical' departments in the new university regions created after the reform, one linked to teacher education and the school world, while the other had a more general pedagogical orientation.

Subsequent teacher education inquiries, such as the 1960 Teacher Education Expert Committee (SOU 1965:29) and the 1974 Teacher Education Inquiry (LUT 74) (SOU 1978: 86), perceived Pedagogy as the research base of teacher education. This is how the experts expressed themselves in the 1960 Inquiry report on the subject of Pedagogy:

> "*As an academic discipline the subject of pedagogy has been added precisely for teacher education. The fact that the subject has gradually expanded to apply to teaching and educational issues outside teacher education and its focus on the school's needs must not obscure this particular task central to the subject. (...) Pedagogy can thus be defined as the science of how to teach. The concept of teaching must not /... / be narrowly limited to refer only to the teacher's actions. The research and teaching that are centered on this issue may branch out into many other areas of research, mainly psychological and sociological, but their large and central fields concern the teaching process and what it entails in terms of objectives, conditions and results."* (SOU 1965:29, p. 134, our translation)

The experts asserted the need for research focused on teaching methods in the didactic field, and especially learning psychology. Even the inquiry that took place nine years later (LUT 74) emphasized the importance of strengthening teacher education's research connection. Based on the main parts of teacher education, that is, subject studies, pedagogy, methodology and practice, in an attempt to achieve better coordination between these into a meaningful whole for the students, LUT 74 proposed that pedagogy, methodology and practice be combined into one subject under the name

practical pedagogy. According to the inquiry, practical-pedagogical education should be given a broader content and some areas should receive more attention. These were:

- *sociology of education*: because teachers need knowledge of how different social conditions shape the conditions of people and especially children and young people and how education can affect these different conditions
- *analysis of the school's goals*: for the teacher to be able to independently interpret the school's goals and develop appropriate teaching and working methods
- *conditions and forms for a democratic way of working in the school*: teachers need to study in detail the conditions and forms for a democratic way of working and have insights, knowledge and the ability to handle problems from a study organizational point of view, such as how to organize students' studies in group and project work
- *developmental psychology and social pedagogy*: insights and knowledge about relationships and conflict management
- *communication*: knowledge of communication sociology and the psychology of language development as well as skills to collaborate with others both inside and outside the school
- *special education*
- *immigration issues*: school staff need insights into the problems faced by immigrant children,
- *international pedagogy*: for a better understanding of other countries' economic, cultural and social conditions and problems
- *education planning and school administration*: prompted by decentralization of the school system and other reforms entailing more autonomy and responsibilities for teachers

The LUT 74 inquiry highlighted the importance of increased demands for knowledge in adult education, especially in upper secondary school but also in the education of teachers for compulsory school. Also mentioned is subject didactics as a central area of knowledge in teacher education:

> *"An important boundary area between subject theory, theoretical pedagogy and teaching methodology is what in several other countries is called subject didactics.*

This includes issues concerning, among other things:

- *how knowledge in the subject is gained and structured (theory of science)*
- *the importance of the subject for further personality development in different cultural environments and contexts*
- *the subject's position and goals according to the school's curricula and in relation to other subjects*
- *how knowledge in the subject is learned by students at different age and maturity levels*
- *how the structure of the subject may need to be reshaped with regard to the age and maturity of the students. "* (SOU 1978:86, p. 209 et seq., our translation)

The scope of the practical-pedagogical education was calculated to be about 50 credits (corresponding to 75 ECTS since 1 credit=1,5 ECTS), of which the practicum would comprise about 30 credits and the theory about 20 credits for the primary school teacher education and about 40 credits, about 25 practicum credits and about 15 theory credits for the other teacher programs.

LUT 74's proposal was heavily criticized, and the reform decision that came in 1985 took into consideration the public criticism. The education for the two categories of primary school teachers (teachers for the lower grades for years 1-7 and the upper grades 4-9) was extended by about one year. This meant that there were significantly more subject studies and fewer practical pedagogical elements than the inquiry had proposed. This weakened the connection to the school activities, and the vocational specialization in pedagogy as well as in subject didactics towards different groups of students became unclear.

‘Pedagogik’, ‘didaktik’ and ‘utbildningsvetenskap’ in Swedish teacher education

A review of Pedagogy in Swedish teacher education reveals that it was gradually developed in a strong behavioural direction, where individual conditions are at the centre of applied research on development, learning and individual differences. These psychological perspectives were challenged during the 60s, 70s and 80s by sociological perspectives that were usually based on a conflict perspective (Englund, 1996; 2018).

In the 1980s, a didactic research field emerged, which, unlike previous psychological and sociological research approaches within pedagogy, focused on

content issues. This didactic research focuses its interest on the content as a) learning content, laying the foundation for the phenomenographic didactic tradition (Marton, ed. 1986), and as b) teaching content, from a curriculum theoretical perspective (e.g. Lundgren, 1986). If pedagogy could previously be described as split between the aim aspect (the WHY of education and learning) and the means aspect (HOW), the launch of didactics was perceived as "a way of reintroducing the philosophical dimension of pedagogy (which was self-evident for, among others, Herbart and Dewey), thereby refocusing content issues, that is, to focus on the field of tension between education and learning, goals and means" (Säfström, 1996, p. 86 et seq.).

Before didactics as knowledge orientation and service designation entered into teacher education, it was the methodology teachers who were responsible for the practical parts of teaching. They were experienced school teachers who were recruited for that purpose. When these were given the opportunity to conduct supplementary studies in pedagogy, they strengthened their scientific competence and began considering themselves to be not only methodology teachers, but also teachers in didactics or teachers in pedagogy, with a didactic orientation. University studies in the science of pedagogy provided the methodology teachers with analytical tools to "scientificize" their experiences and school practice. Another advantage of the methodology teachers identifying with the new field of knowledge, didactics, was that they were also qualified to teach pedagogy courses after studying pedagogy, but not the contrary. This could lead to conflicts of interest and positioning between the traditional pedagogy teachers and the new didactics teachers, which were often less about different disciplinary identities than about competition for power and teaching hours.

In order to avoid taking a position in this occasionally infectious debate about either pedagogy or didactics, although it is not always easy to discern the boundaries between them, a new name was introduced to ward off the tendencies towards polarization and widening the gaps between them: *'utbildningsvetenskap',* educational science.

The term and, later on, the scientific field of *utbildningsvetenskap* (educational science) was launched by the 1997 Teacher Education Committee (LUK 97), a parliamentary committee, which proposed a new teacher education reform (SOU 1999: 63). A reform was justified by the altered working conditions of teachers due to far-reaching changes that had taken place in society and in the education system. Among other things, the political governance of schools and higher education institutions

shifted towards goal and performance management, with a division of responsibilities between the state and the municipalities as well as between politicians and professionals. In addition, the compulsory school, upper secondary school and municipal adult education had been reformed, and new curricula, syllabuses and grading systems entered into force.

The directives (SOU 1999: 63, Appendix 1) to the parliamentary committee emphasized that a new teaching role requires leadership based on extensive professional knowledge. How teachers can support students with difficulties calls for knowledge about, for example, relationships, communication, children's and youth culture, and about the school as a social and cultural environment. The teaching profession also requires a more theoretical foundation, and the new teaching role a broader competence in subject and general didactics:

> *An important element of the teacher's profession is understanding the conditions of learning. This requires awareness of the students' different conditions and needs, and knowledge of the learning processes of children, adolescents and adults. It is also important that teachers have knowledge of the way students react to being bullied or subjected to other abusive treatment. Teacher education has traditionally had the task of providing both strong subject knowledge and pedagogical competence for future teaching action. How the different educational objectives in teacher education should be balanced is not obvious*. (p. 417, our translation)

Furthermore, the directives highlighted immigration and the need for knowledge about other cultures, the development of new pedagogical approaches with regard to new student groups, not least in adult education, and also the idea that student teachers should have the opportunity to build up their critical ability to analyse the conditions, responsibilities and content of the teaching profession. Therefore, it matters how the relationship between theory and practice is manifested in teacher education. According to the directives, the practice and the experience gained from it form the theoretical knowledge basis in teacher education; it is a prerequisite for knowledge-seeking and critically experimenting pedagogy within teacher education.

Another motive for a reform of teacher education was the criticism that emerged in several evaluations. Gran (1995) considered in his review, which was initiated by the Swedish Teachers' Union, that teacher education lacked professionalism and that the institutions involved seemed not to have a common idea of what they want to achieve

with their teacher education. The same review also showed that the education of the prospective teachers did not help them develop the skills necessary to cope with their social and student-care tasks and to drive the local development of the school.

Another evaluation commissioned by the National Agency for Higher Education found that compulsory school teacher education does not always correspond to the basic general guidelines for higher education that are prescribed in the Higher Education Act (Högskoleverket, 1996). Two examples are the lack of a research connection regarding the practical pedagogical elements, and the low quality of the undergraduate examination theses. Furthermore, the evaluation emphasized the need to strengthen the scientific basis of teacher education, emphasising research on the conditions of the teaching profession and didactics in various forms, in order to increase the quality of education and teacher professionalism. The evaluators see as the real future challenge the ability of didactic research "to ask the right questions and produce fruitful knowledge for the development of teacher education, school and society".[9]

It is important to point out that the 1997 Teacher Education Committee paid special attention to the above-mentioned criticisms in the inquiry's analysis and proposals.

Teacher competence

The Teacher Education Committee's view was that all teachers need to possess a basic competence that comprises a cognitive competence, a cultural competence, a communicative competence, a creative competence, a critical competence, a social competence and a didactic competence (SOU 1999: 63, pp. 67-73). The Committee regards teacher competence as a dynamic process and not as a quantitative set of different knowledge and skills. The dynamic approach means that competence is something that is constantly renewed and developed throughout life. This competence is both culturally and personally bound, so the teacher is never fully trained, possibly better trained. From such a perspective, the concept of competence is seen as a relational term that describes the relationship between an individual's ability in different respects and for certain tasks or a certain job. Thus, a teacher's competence consists of:

[9] The explicit focus on didactics in teacher education had its origin in the Teacher Education Bill of 1984/85 and was a directly influenced by rapidly growing pedagogical-didactic research and a lively debate about didactics' relationship with pedagogy (see Englund, 1996).

a) *general areas*, such as the skills, abilities, knowledge and convictions teachers need to be able to carry out their assignment
b) *subject knowledge*, such as facts, concepts and theories in the subjects they teach
c) *principles for teaching and learning*, both general and subject-specific, aimed at understanding

The Committee also considered that teacher education as an academic vocational education with a complex mission presupposes that it should be based on "scientific knowledge and proven experience". A more detailed presentation of the proposed scientific basis is made in the next section on educational science (*utbildningsvetenskap*).

A recurring question in all professional education is the relationship between theory and practice and what knowledge is the basis for the content of teacher education. Who defines which knowledge is most relevant in order to best prepare the student teachers for their professional activities? Is it the theory generation that develops within the pedagogical institutions or the educational activities in the field? Are the professionals in the schools recipients of knowledge and theoretical models developed by others than the teachers themselves or are they co-creators of knowledge based on the issues that they consider important to systematically investigate and reflect on? Are teachers objects of pedagogical research and consumers of it or are they subjects of research and thus pedagogical development agents?

The committee's answer to these questions is that teacher education must be more clearly anchored in concrete and practical experiences; this raises demands on how school placements during the education should be organized so that this forms a basis for the theoretical knowledge during the campus-based seminars. Learning, both in terms of how knowledge is formed, but above all how people learn what they learn in relation to different subjects, constitutes the very core of the teaching profession. For teachers to live up to the requirements of the new assignment, they need to have "access to concepts from different areas of knowledge in such a way that they can be used as intellectual tools in many different pedagogical contexts", including areas of society other than schools. The role of the teacher is not limited to communicating, but increasingly includes teaching students to screen, process, interpret and evaluate information themselves and motivate them to want to learn. It is assumed that teachers should possess good knowledge of the subjects they teach, but that is not enough. There is also a requirement for good knowledge about learning and its conditions, about

students' different needs and the ability to create attractive environments for interaction, learning communication and development.

In order for teacher education to fulfil its mission of being higher education, vocational education and a means for the state to steer school, the Committee's conclusion was that it needed to be renewed and restructured. A new structure was proposed for teacher education that would promote integration into school activities and collaboration in teams of different teachers. The new structure meant that eight previous teacher qualifications were merged into a single one, with three integrated areas of education:

1) *a general area of education,* common to all teacher programs, that included central areas of knowledge such as learning, socialization, values and the social mission of professional activities, as well as central, interdisciplinary subject studies and school-based education
2) *different orientations,* corresponding to the subjects prospective teachers intend to work with. The field of subject orientation also includes school-based training, and
3) *specialization,* that may involve deepening of previous studies, broadening of or a complement to these, or a new perspective of previously acquired knowledge

It is important to point out in this context that it is up to each teacher education institution to design the concrete content of the education and the allocation of the various proposed knowledge areas over time, and/or how they should be integrated with each other. By increasing the volume of subject studies in the education, the investigators wanted to increase its academicization, by, for example, having a higher number of employed teacher educators with a doctoral degree, at the same time as the teacher program was transformed into generalist education. The intention was to make teachers fit for different types of teaching assignments, but it was not certain that teachers' professional knowledge would become stronger (see Hartman, 2012). The students would also be trained in scientific methodology and the education would end with a degree project (examination thesis) of 15 ECTS with a focus on a theme related to future professional activities in one of the three areas. The latter was a direct reaction to the strong criticism the National Agency for Higher Education had directed concerning the low academic standard of the degree projects.

Utbildningsvetenskap /educational science/ as the teaching profession's core of knowledge

To realize the ambitions and proposals presented by the 1999 Teacher Education Inquiry, it was proposed that a new field of science should be established to strengthen teacher education's connection to research; in other words, linking to science, research and postgraduate education. The proposal for the new subject area (faculty) should be seen in the light of the weak position that teacher education has traditionally had within academia when it comes to research and postgraduate education. This would mean that teacher training colleges also should receive fixed research grants, something that was otherwise reserved for universities or higher institutions with university status. This, as it turned out later, raised a number of problems that were important for the continued fate of the proposal. The argument for more research focused on teacher education was partly justified by the increased demands placed on the school professionals, to be able to independently design and develop their work in a decentralized and goal-oriented school, and partly by the necessity to strengthen the scientific base for teacher education, which, it was assumed, would increase the professional identity of teachers. In addition, the establishment of the notion of *field of science* (*vetenskapsområde*) was expected to increase the opportunities for creating multidisciplinary and interdisciplinary research environments.

The Teacher Education Committee (LUK 97) proposed the establishment of *utbildningsvetenskap* (educational science) (SOU 1999: 63) as a field of science to clarify the kind of knowledge teachers needed that would increase their understanding of learning and development in education and in working life. Educational science was presented in the Bill (Prop. 2000/01: 3) as a strategic area based on interdisciplinary and multidisciplinary research to meet the demands of the knowledge society. At the same time, *educational science* can be seen as an attempt to gather under one roof a diversity of research specializations that deal with education, training, teaching and learning. This diverse field of knowledge, consisting of many different subjects and disciplines, would be organized within an academic framework that resembled more established disciplines, with what that entails in terms of financial resources, organization and research environments (SOU 1999: 63; Fransson & Lundgren, 2003; Askling, 2006; Jansson ed., 2011).

According to the Teacher Education Committee, the emergence of the new science area *utbildningsvetenskap* (educational science) would make it possible to utilize existing research and postgraduate education in the field, creating conditions for developing new areas of knowledge and new research orientations in relation to teacher education and pedagogical professional activities. The reasoning presented by the committee basically lacks a deeper analysis of the kind of knowledge, which research in educational science should generate. The following government bill (Prop. 1999/2000: 135) defines educational science as follows:

> *" Educational science is a broad collective term used for the subject area by several universities and colleges. It is also used by the Teacher Education Committee. Below, the term educational science is used for the broad research and postgraduate education that is conducted in connection with teacher education and that corresponds to needs in teacher education and pedagogical professional activities."* (a.a., p. 38, our translation)

With regard to the scientific basis for teacher education, the Government shared the Committee's assessment that it should be strengthened but did not accept the proposal to establish educational science as a new field of science. Instead, a new organization for research funding in the form of the Swedish Research Council was proposed. The Government considered that, within this Council, a special committee for educational science should be established (see SOU 2008: 109, p. 98f; Fransson & Lundgren, 2003).

" Sustainable teacher education"

The new education staged in 2001 did not last long, for various reasons. Among the most serious were: a) teacher education institutions were given a very short time to adjust; and b) there was continued criticism based on the national evaluations of teacher education. Several evaluations criticized the teacher programs for insufficient scientific grounding, excessive freedom of choice for students and the absence of important areas of knowledge. Only a few years after the first students had graduated from the new teacher program, a new government commissioned a new inquiry entitled Sustainable Teacher Education (HUT 07); one of the starting points for this inquiry was, according to the directives (see Dir. 2007: 103 in SOU 2008: 109, p. 453), to "*propose how the research connection of teacher education, its connection to educational science as well*

as subject theory and subject didactics, can be improved and how the number of postgraduate teachers can increase and how the results of practical research should benefit the school." Obviously, the government deemed that teacher education at that time was not sufficiently sustainable!

We will limit ourselves here to the reasoning HUT 07 presented regarding competence needs for future teachers and how these are related to the educational science that was launched in connection with the previous teacher education reform. But let us first take a closer look at the HUT 07 inquiry's view of the “teaching mission”.

The HUT 07 inquiry stated that it wanted " *to contribute to the training of active and professional teachers*". It criticized the previous inquiry's (LUK 97) definition of the teaching mission because "*it is more about what the teachers should not be or do than the opposite*". Furthermore, it considered that the inquiry report’s normative tone, contrasted with the lack of concrete guidance for the intended new teacher role and with the abstract pedagogical and developmental philosophical visions (SOU 2008: 109, p. 187). HUT 07 assumed, inter alia, that

- active learning requires active and distinct teaching on the part of the teacher
- a teacher needs to act flexibly in the face of different situations, in front of different groups and in different teaching elements
- the professional role requires high-quality education with profound subject knowledge and relevant skills as well as close contact with the school through well-organized and relevant school-based training (practicum)
- the teacher must be an expert in their fields
- teachers should realize the ability of research to provide support and inspiration in their teaching; therefore, student teachers need to be trained in both “research consumption” and “research production”
- the normative attitude characterizing teacher education should be replaced by a more scientific approach, where different theories and methods are presented and discussed.

One of the Inquiry’s assumptions was that teacher education should give future teachers a thorough foundation on which they can build during their career by continuously developing their skills. In its analysis the Inquiry analysed the competencies required for different categories of teachers and divided them into three levels. The first level consists of overall perspectives which should permeate all teacher

education, the second a set of core knowledge and skills or general competencies that all teachers need, and the third specific competencies pertinent to certain age categories or types of school. The first two levels of competencies are common for all teachers. The Inquiry proposed a teacher education program with a common core of educational science (*utbildningsvetenskaplig kärna*) and a number of clearly defined specialisations.

Level I: Overall perspectives

The Inquiry's idea of "sustainable teacher education" comprises four overall perspectives, which have been found to be so essential that they should permeate all teacher education and also be strengthened:

• The *scientific and critical approach*, in order to counteract normative attitudes,

• *Historical* and *international* perspectives, so as to counteract a narrow view of school and learning, and exploiting

• *Information and communications technology* (ICT) as an educational resource. (a.a., chapter 3, pp. 191-306)

A scientific and critical approach is considered to counteract normativity and strengthen teachers' ability to evaluate different pedagogical methods and theories. This means that teacher education must rest on a scientific basis (based on research) and proven experience (experience from the field of activity is utilized within the education). To counteract a narrow contemporary and national approach to school and learning, it is proposed that prospective teachers develop an approach to knowledge from both a historical and a global perspective, which contributes to a broader vision, an awareness of the importance of contexts, a reflective mindset and increased cultural understanding. The fourth perspective concerns the view of information technology as a pedagogical resource. It also includes insights into its role in societal development and into the opportunities it offers for the communication, generation and processing of information in education, work and leisure. Otherwise, digitally illiterate teachers risk losing their authority over today's schoolchildren, making them completely unable to function as a positive, knowledgeable and supportive force for student learning with the help of IT.

Level II: Joint core of educational science (utbildningsvetenskap)

This level includes core knowledge and skills that all teachers need. It concerns the knowledge and skills that provide a stable foundation for each teacher's professional practice and is part of the so-called core of educational science. In the opinion of the Inquiry, this core of knowledge should include the following elements, structured around certain key issues (examples of some of these issues are presented in parentheses after each element):

1. The organization and conditions of education, the foundations of democracy (How has the school as an institution been constituted? What laws and rules apply? What are the basic values of democracy and how are they applied in practice?)
2. Curriculum theory and didactics (How is knowledge selected, organized and presented for learning? How are citizens shaped through school?)
3. Theory of science, research methodology and statistics (What is possible knowledge? How is educational research organized?)
4. Development and learning (How have different theories and models of learning and development developed?)
5. Special education (How are different special educational needs identified?)
6. Social relationships, conflict management and leadership (How does the teacher shoulder the role of pedagogical leader in different situations? How can collaboration with parents be built up?)
7. Assessment and grading (How can knowledge be measured?)
8. Evaluation and development work (How can quality be described and defined? How can local development work best be organized and evaluated?) (a.a.)

Level III: Specific knowledge and skills

According to the Inquiry's reasoning, it is not enough to have a common professional competence, which all teachers equip themselves with by studying different subjects that are part of the educational science core. Professional teachers should have very good knowledge of the subjects they teach. Specific skills are also required depending on the age group or school form they are teaching in. The Inquiry attaches great weight to the importance of subject didactics. The didactic perspective is to be an active component in the teaching subjects. (a.a.)

When the Inquiry selects and divides teacher competencies in the way outlined above, it is not on the basis of a coherent pedagogical theory. It is rather based on the conviction that there are indispensable and universal skills and knowledge that all teachers should be familiar with and proficient in. The paradox in the inquiry's reasoning regarding the competencies developed through the "*joint core of educational science*" arises when it is clearly stated that no methods or theories are pointed out as central knowledge content in teacher education. On the one hand, the inquiry notes that one of the starting points for its assignment was that "*the formal requirements that the State imposes on teachers and their competence in various governing documents were not very specific*". On the other hand, it avoids being particularly specific in order not to be accused of steering teacher education in detail (!). The Inquiry emphasizes therefore that teacher education must rest on a scientific basis and proven experience, and stresses, with regard to the breadth of the pedagogical-didactic field, the importance of teachers having the ability to critically reflect on different theories and methods. As for the rest, it is left to each higher education institution to determine in detail the content of the educational science core and the other two competence levels.

Teacher education, educational science(s) and teachers' professionalism - with concluding remarks

Following the proposals of the HUT 07 Inquiry, a new teacher education structure was established.

Nowadays, all Swedish teacher education programs include two compulsory semesters with educational science courses and one semester of school-based education (practicum). These together form the educational science core of a teacher's education. Educational science is also an established field of science within the Swedish research community. After a relatively long investigation and much debate, a Committee for Educational Sciences (*utbildningsvetenskapliga kommittén, UVK*)[10] was formed in 2001 with the task of supporting high-quality research with relevance to the development of schools and preschools with the active involvement of professional teachers. A teacher education's research connection has been the main motive behind the establishment of educational science as well as being a recurring theme in Swedish education policy since the Second World War. UVK is incorporated within the authority structure of the

[10] Committee for Educational Sciences (https://www.vr.se/english/about-us/organisation/scientific-councils-councils-and-committees/committee-for-educational-sciences.html)

Swedish Research Council, that is, within the same research policy body together with the traditional research councils such as the Scientific Council for Humanities and Social Sciences, the Scientific Council for Medicine and Health, and the Scientific Council for Natural and Engineering Sciences. Nevertheless, UVK remained only a committee and was never upgraded to a council.

Educational science became a collective term for different areas of research on education. As a field of science, it includes many subjects and fields of knowledge with different types of research questions, theoretical models and methods regarding educational processes at the macro level (society), the meso level (institutions) and the micro level (individuals).

Traditionally, in Swedish educational research, the discipline of Pedagogy occupies a special position. The creation and development of Pedagogy is associated with the structure of the compulsory school system. General didactics and Subject didactics as areas of knowledge lived for a long time in the shadow of Pedagogy, but it seems that they now have greater room for manoeuvre within the new research area of Educational Science. It is important to note in this context that although the new field of educational sciences derives from the discipline of Pedagogy, the subject of Pedagogy itself has not been abolished. However, it is not included among other sciences in the Swedish Research Council's Committee for Educational Sciences, but is part of the Scientific Council for Humanities and Social Sciences. As a result, the discipline of Pedagogy continued to belong to the social science family and the Humanities and Social Sciences area, while educational science should rather be seen as a multidisciplinary area of research. Besides, the fact that the UKV resources became quite extensive meant that many pedagogical researchers sought funding there instead, which perhaps gives reason to claim "*that pedagogy thereby (unconsciously) left its social science affiliation*" (Carlgren, 2018).

The decision to create UVK was part of a conscious state research strategy to develop the school in liaison with its own professionals – teachers and school leaders – and to ensure that these professionals had the necessary knowledge and skills to be able to run their own area of activity. The connection between practical research, development work and professional development was the underlying notion (see Burman, Lövheim & Ringarp, 2018):

> *"Within UVK, within the committee, the double task was, on one hand, to reward research that was relevant to the school and teacher education and that met their*

> *needs, and on the other hand, because we were part of the Swedish Research Council, to reward curiosity-based research of a basic research nature. It was a dilemma."* (Berit Askling in a.a., p. 18, our translation)

The expectations from the beginning were that UVK would support praxis-close (*praxisnära*) research. What this meant in reality became a source of tension between different positions, partly between the proponents of curiosity-driven research and those who advocated an interactive research model, whereby researchers with an interest in schooling together with teachers could formulate questions and conduct research on problems from the professional practice. Evidently, the research rewarded by UVK is predominantly that which the researchers themselves believe is of relevance to the field of practice. This is also confirmed by the Committee for Educational Sciences in its latest research overview of educational sciences, where it states that in order to safeguard the quality of research there is a need for long-term investment in researcher-initiated research within educational sciences:

> *"There is no dichotomy between undirected researcher-initiated research and societal relevance or benefit. Both researcher-initiated research and programme research/research within thematic initiatives where knowledge is requested can constitute undirected research. Education, from pre-school to higher education, is largely controlled by government directives and is the subject of a number of politically and economically motivated reforms, audits and measures. It is therefore of extreme importance to have undirected, independent and critical research within this area in particular, as researcher-initiated research also provides opportunities to use researchers' competence and ability to rapidly identify important issues."* (Swedish Research Council, 2019, p. 6)

The vacuum that arose when UVK did not particularly prioritize praxis-close research led stakeholders from the profession, such as the two teachers' unions and the Swedish Association of Local Authorities and Regions, to advocate for the creation of a new research agency; this was established in 2015 as the Swedish Institute for Educational Research.[11] However, this institute's identity remains, to date, unclear and its role as financier of praxis-close research is very modest due to limited funds. In

[11] The Swedish Institute for Educational Research is a government agency with the sole objective to enable those who work on the Swedish school system to plan, carry out and evaluate teaching. (https://www.skolfi.se/other-languages/english/).

addition, the collaboration between UVK and the Research Institute does not seem to be particularly well developed.

In the Swedish context, the power struggle between researcher-initiated and praxis-close research over its content and theoretical perspective is in full swing, as is the tension between the knowledge area of Educational Sciences and the science of Pedagogy. The question that remains to be addressed is which of these areas can be regarded as the teaching profession's theoretical knowledge base, not least in light of the school's and the profession's challenges in today's society. The dilemma between Educational Sciences and Pedagogy is perhaps just a pseudo-dilemma; it has no function to argue for 'signifiers' when what is at stake is the 'signified'. One thing, though, is for sure:

Pedagogical/educational research as a field of activity has always had to relate to other societal fields of tension such as science, education and politics and has strived to conquer an autonomous position in relation to these. Academically, Pedagogy is characterized by its multidisciplinary character with certain internal "rules of the game" that delimit it in relation to external interests. At the same time, Pedagogy has been the subject of pressure and expectations from policy and education actors to provide solutions to various problems. Pedagogical/educational knowledge does not make sense for its own existence. It is relevant and socially beneficial only if it enjoys relative autonomy and succeeds in fulfilling its critical task in interaction and exchange with various sectors of society. Pedagogy is basically a science of human development and culture. As such, it is normative and value-based, contributing with its theories and methods useful knowledge to meet the challenges of the ongoing social transformation with regard to democracy, diversity, cohesion, technology and ecological, social and economic sustainability.

And finally

The HUT 07 teacher education reform also affected the design of the school curricula which have been in force since 2011 (Lgr 11 and Lgy 11). The reform of the upper secondary school in 2011 emphasises the provision of good preparation for working life and continuing studies, without reducing the ambition to develop general competencies. In the section "fundamental values and tasks" of the Swedish school, four general perspectives are stipulated; these correspond to teacher education intended to permeate

all the teaching and learning in school, and to some extend to those that apply for teacher education, as mentioned earlier in this text. Education at all levels in the Swedish school system aims at promoting pupils' many-sided personal development to become active, creative, competent and responsible individuals and citizens. Emphasis is given to the ability of the pupils to assess, to dare to take a position on complex issues and to act accordingly.

Nurturing reflecting and action-oriented citizens is stipulated in the school curriculum as one of the main tasks of education. There are several ways, according to the governing documents, for teachers to train this ability while working for sustainability. This goal is promoted through an interdisciplinary approach and by many subject areas that are considered in the governing documents:

> *"An important task for the school is to provide a general but coherent view. The school should stimulate pupils' creativity, curiosity and self-confidence, as well as their desire to explore their own ideas and solve problems. Pupils should have the opportunity to take initiatives and responsibility, and develop their ability to work both independently and together with others. The school, in doing this, should contribute to pupils developing attitudes that promote entrepreneurship.*
>
> *In all education, it is important that overall, well-balanced perspectives are established."* (Lgr11, p. 11)

Against this background, it is no risk to guess that the task of educational science research, now and in the future, is to develop sustainable knowledge and instruments for the realisation of a sustainable education for a sustainable society. That said, educational science also has as its raison d'être the development of knowledge and methods to help develop educators' competencies and, by extension, everyone's learning and development.

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