The Expansion of Higher Education in the Swedish Welfare State and the Reconfiguration of its Professional Workforce

Gunnar Olofsson

1. Universities and the system of Higher education in Sweden - A brief historic background

Higher education in Sweden has a long history. The country’s first university was founded in 1477 in Uppsala in central Sweden, with the main task initially of training clergy for the church. During the 17th century higher education was expanded to meet a growing demand for government officials to represent Sweden in contacts with other countries, and in 1668 Sweden’s second university was founded in Lund, in the southernmost part of the country, with the aim of integrating the newly acquired Danish provinces into the Swedish empire.

In the 19th century vocational programs evolved into institutions for vocational training at an academic level, among them in technology and medicine. In this context, for instance, The Karolinska Institute (for medicine) and the Royal Institute of Technology in Stockholm were established. This set a pattern for the institutional expansion of higher education in the period from 1810 to 1947. No new, full universities were founded in this era. There was, however, a considerable increase of specialised schools - a variety of technical institutes, schools of economics, pharmaceutical institutes, institutes of dentistry, institutes of veterinary medicine, schools of medicine, institutes of social work, nursing schools, institutes of forestry, of agriculture and of gymnastics. In addition to these, Stockholms Högskola (1877) and Göteborgs Högskola (1891) were also founded in this period, as private university colleges enjoying state support, both later becoming full universities, in 1954 and 1960. They, too, were ‘partial’ – Gothenburg initially harbouring the humanities, Stockholm the natural sciences.

The second half of the 19th and the early decades of the 20th century saw a growth of vocational and professional programs and specialised institutions. The appearance of these institutions altered the structure of the field of higher education. Through institutional expansion, higher education had become a set of institutions at different distances from the old core universities. This in time led to the gradual transformation of the old universities and opened up for including other kinds of institutions into the field of higher education as well, esp. schools with a vocational bent.

Within this wider field of higher education an important set of institutions developed from the mid 19th century onwards: the emerging seminaries (teachers colleges), the nursing schools, and later, in the early 20th century, the schools for training social workers. All these institutions fell outside the formal orbit of university education. They became the institutions that shaped the education and esprit de corps of the major emerging semi-professions of teachers, nurse and social workers, key professions for the welfare state that emerged in Sweden from the late 1930s and onwards, reaching its take-off point in terms of personnel and expenditures in the 1960s.

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1 Professor of Sociology, Forum for Research on Professions, Linnaeus University, Sweden.
3 This section is based on Agevall & Olofsson 2012
Form the 1940s there was a major expansion of research at the higher education institutions. New research councils were developed and specific research posts established.

A new phase in the expansion of higher education came after the Second World War. Simple employment figures convey a sense of the magnitude of university transformation during this era. In the period between 1870 and 1947 the number of professors and adjuncts at Swedish universities rose from 107 to 140. Sixty years onwards, in 2009, the professoriate amounted to 5,114, with an additional 7,510 associate professors (lektorer) and 6,875 adjuncts (adjunkter).

As Martin Trow has pointed out, in his analysis of the international trend which the Swedish case exemplifies, such figures conceal two fundamentally different processes. One of these is the expansion of the elite universities – the growth of traditional university functions in traditional, if somewhat modified forms of universities. Göteborgs Högskola and Stockholms Högskola turned universities in 1954 and 1960 respectively, and were joined by Umeå University in 1964. Linköping University College was founded in 1970 and became university in 1975. The other is the transformation of elite university systems into systems of mass higher education performing a great variety of new functions (at least new to universities) for a much larger proportion of the university age group. (Trow 2010)


In 1977, the Swedish system was transformed from a binary system of higher education to a formally unitary one comprising strictly academic as well as vocational and longer and shorter professional programs. In the later part of the 20th and early 21st century higher education has expanded significantly and new institutions have been founded throughout Sweden. Several reforms have been implemented, for instance of the governance and funding systems. A host of new university colleges were founded after 1977. Four of these have since become universities. The post-1970 university latecomers have typically commenced as local branches of established universities, exited their incubators to become university colleges, to finally acquire university status. There is, however, yet another source of net increase to take into account, which is both directly and indirectly related to the third wave of institutional expansion. As we have already noted, Göteborgs Högskola and Stockholms Högskola turned into universities after World War II. The former technical institutes and schools of economics were also included in the university system. In fact, however, all of the institutions from late 19th century are now incorporated in the Swedish university system. With regard to the Swedish case, then, part of the net increase in students and teachers is directly related to the emergent institutions from this institutional expansion.

Many kinds of educational institutions were gradually incorporated into the traditional universities throughout the post-war era. The institutes for training social workers were incorporated into the universities from the 1960s. It coexists, at least up until 1977, with institutional expansion of new kinds of institutions, such as the emergence of teacher colleges from the end of the 1950s. The old seminaries were first transformed into separate, university-close colleges, later to be included in the university system proper and even becoming part of universities as well as of the later (after 1977) emerging university colleges.

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4 The Swedish expansion of the number of universities is in line with the overall development in Europe: there were 201 universities registered in Europe in 1945; fifty years later that number had quadrupled.
A similar pattern holds for the institutions that were training students for vocations such as leisure time pedagogue, biomedical scientist, occupational therapist, and preschool teacher. Emerging as special schools they were successively incorporated into the university system with the 1977 university reform.

2. The Structure of the Swedish system of higher education today

The last phase of institutional expansion constitutes a quantitative leap, which has ushered into todays formally unified, but structurally, as well as hierarchically, differentiated system. This leap does not consist in an inflation of traditional disciplines at traditional universities. As Steven Brint has shown with reference to the US, traditional university disciplines have receded in the last thirty-five years, not just in relative terms but also – and this in the midst of otherwise formidable growth – in absolute student numbers. This takes on special significance in relation to the Swedish situation:

One of the most important changes in American higher education over the last 30 years has been the gradual shrinking of the old arts and sciences core of undergraduate education and the expansion of occupational and professional programs. In the US, occupational fields have accounted for approximately 60% of bachelors’ degrees in recent years, up from 45% in the 1960s, and hundreds of institutions now award 80% or more of their degrees in these fields. (Brint et al., 2005: 151)

University expansion was not primarily an effect of new students enrolling in old courses. Rather, the schools in which large numbers of students were already enrolled have been transferred to the university system. A drastic illustration is provided by the 1977 university reform. The formal inclusion in the university system of several vocational programmes resulted in an approximate fifty percent increase of university students, and the gendered nature of these programmes is reflected in the fact that women were suddenly in majority in the student population.
Similar processes operate throughout the post-war era. All the specialised schools that emerged with the diversification of the field of higher education have, at different points in time, been incorporated in the university system. This pattern of successive institutional expansion and contraction has changed the composition of the student body as well as the teacher corps, e.g. by the inclusion of a large number of vocational programmes into the university system.

With their inclusion in the university system, these vocational programmes also came under systemic pressure to become more academic. This entailed elevating the scientific competence of programme teachers, aligning the programme with existing or to-be disciplines that can accommodate bachelor, master and Ph.D. students, and negotiating a new relation between the imperatives of science and working life. Education is to prepare the student for working life by imparting skills and knowledge requisite for her future job. At the same time, teachers and teaching are pulled into the career patterns, hierarchies and disciplinary orientations of the university system.

3. Old and New Professional groups within the expanding University system

Once upon a time the category “profession” was a simple but central concept in social theory (Parsons 1939, 1954, 1968). This concept pointed to some common features of a limited number of prestigious occupations. They were trained in universities, played key roles in linking scientific thought to social practice and were characterised by specific organizational forms and codes of ethic. Physicians were the professional group par preference and the professions were, in Parsons’ theory, carriers of the key value-systems of modern society.
Today, an arresting array of occupations is viewed as “professions” by themselves and by scholars. The number of candidates is increasing as a consequence of the expansion of the enrolment in vocational programs at the university level (Wilensky 1964, Olofsson 2008). The critical point is to understand how the expansion of the university system, led to an increase of academically trained specialists in different occupations.

A way out of these muddy definitional waters is to use the concept of “the professional landscape” (Brante & Olofsson). This concept is a classificatory conceptual scheme, where the fields and domains where professions perform their tasks are combined with a categorization of occupations into three waves - or generations - of “professions”.

The horizontal axis is built up by the main domains of society. With a mix of theoretical considerations and empirical subdivisions the following nine key fields are used: technology, economy, social control, social reproduction, education- knowledge transfer – aesthetics, communication, the academy. The field of higher education, science & research is a key to all the others – here new knowledge is created and learnt by all other professions. The vertical axis contains three main categories of occupations that we can classify as being “professional” to some degree and which therefore should be conceptualised as “professions”.

The first category is the classical professions (physicians, lawyers, civil engineers, etc. The second category contains those occupations that in the 1960’s (Etzioni 1969) were defined as semi-professions (teachers, nurses, social workers etc). The third category contains those occupations now being trained in the rapidly expanding universities and university colleges in programs, combining a basic university degree with a vocational profile. This motley group of “professions-in- the making” can be defined as pre-professions.

This scheme understands professions as occupational categories who are carriers of specific knowledge and expertise for solving specific tasks in modern society, whether in constructing a bridge, teaching children to read, analysing the stock market or helping the poor and destitute to a decent life.

The major point about the vertical axis is that it takes the stratification of the whole professional fields seriously, by focussing both on the kinds and degrees of science-based knowledge that is used by different occupational groups as the knowledge basis for their practical intervention in society and on their location in the social and technical division of labour.

The relative positions and location of specific occupational groups are not given once and for all. Occupations and professions have different trajectories over time and they have different positions in different national configurations. To take an illustrative case, the social position and the societal role of the military is clearly dependent upon which nation-state they are serving and the position of that state in its relevant state-system.

3.1. Three different educational trajectories


6 The role and status of the military and the officer corps is very different in Greece or Turkey than in Sweden, in the US versus the small European countries, between countries where borders are contested or not.
The classical professions have traditionally been trained by the *classical universities*. In Sweden, the three “higher faculties” trained the key professional groups in jurisprudence (lawyers), medicine (physicians) and theology (priests), while the fourth, the philosophical faculty, eventually gave birth to the “key professions” (Perkin 1969) of professors and other university teachers and researchers.

The occupations that made up the bulk of the *semi-professions emerged outside the universities*. They were trained in special schools and institutes – in teachers colleges, in schools of social work, in nursing schools etc. Over the last few decades these institutions have been gradually incorporated into the institutionally unified Swedish university system.

The third generation of occupations that strive for professional status, the pre-professions, have emerged as a consequence of the rapid growth of mass tertiary education – in the university colleges, in the new universities but also as part of the expansion of older universities.

The national configurations of higher education are far from identical. In most European countries, the occupations included in the category of semi-professions are usually trained and educated in extra-university settings – in professional schools, in teachers colleges, in the German *Fachhochschulen*, and earlier in the British polytechnics. This is the case in most western European countries.

The institutional differentiation has a partly different form in the US. In e.g. California, higher education is divided into three separate systems – the full universities, the state universities and the even more numerous community colleges. There are of course overlaps between these three levels in the programs and courses they give, the subjects they teach etc. But as a rule the classical professions are trained at special schools within the traditional universities (e.g. the Medical and Law schools), the semi-professions are usually trained at the state universities. The pre-professions are mainly seen at the state university level and, in their early stages of becoming, within the two-year programs at the community colleges (e.g. the police academies).

The structure of higher education in Sweden is different, especially in institutional terms. Today, the Swedish system has a formally unified structure. Almost all universities and university colleges is governed by the same public authority. This is the consequence of a long historical process where all forms of higher education have been integrated into a common institutional framework. Cf. figure 2.

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7 A few establishments are governed in and run by formally independent foundations.
This structure of professional education is mirrored in other countries, although the institutional lines of demarcation between the different kinds of establishments within higher education are drawn differently.

### 3.2. A bipolar configuration: Classical professions versus semi-professions

At the beginning of the first major wave of the expansion of enrolment in higher education, i.e. the early 1960’s and the next few years, Sweden, had in fact two separate systems of higher education.

The first was the existing major universities (Uppsala, Lund, Stockholm, and Gothenburg) and two technical universities (Stockholm and Gothenburg\(^9\)) where the classical professions were educated. Here we should add the important agricultural and natural science based schools, training key professional groups in agronomy (Uppsala), forestry (Stockholm), veterinary science (Uppsala), pharmacy (Uppsala) and finally also dentistry (Stockholm and Malmö).

The universities and all the special schools recruited all their students from the gymnasiums (high schools) which all had a limited number of places and thus recruitment was also limited. Since the gymnasium at this time was socially selective, most of the students came from middle and upper class backgrounds. The occupational destiny was leading them into the upper professional class, belonging to Social category 1 (“socialgrupp 1”) in the Swedish social and occupational classification system, used by Statistics Sweden and social scientists in Sweden.

At this time certain combinations of subjects in the social and natural sciences began to be packaged in strictly structured programs in order to prepare for specific careers. The program

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8 Mainly the training of ph.D. students.

9 That is, the Royal technical college in Stockholm and Chalmers Technical University in Gothenburg, where all varieties of civil engineers were trained as well as architects and land surveyors.
for educating specialists in psychology came about at this time, with its basis of psychology, but also including a year of pedagogy and sociology. Psychologist was in one sense the last category to become a more or less classical profession, created within the university system.

A large group of social science students were channelled into a program preparing them for an administrative career (a public administration exam). This program combined bits of law and statistics with larger chunks of economics and/or political science, with optional choices of sociology, history or geography.

This type of vocationally oriented programs signalled the future in the Swedish university system.

**Training establishments for the semi-proessions – outside the universities**

At the end of the 1950s all the major semi-proessions were trained in schools outside the formal university system, in establishments not on equal footing with the universities and the professional schools mentioned above.

**Nurses** were trained in separate schools, closely linked to the hospitals and the counties that run the hospitals in Sweden. They learnt some basic medical science in the form of existing knowledge and results and were trained to apply existing techniques and instruments with a practical knowledge and experience of how to care for the patients. It was not yet necessary to have gone through a gymnasium in order to enter a nurse school. The education lasted only for two years and had a large period of practical care work in hospitals.

**Social workers** were trained in special schools of social work. The program was built upon a combination of subjects such as psychology, sociology, economics, political science and (social) law with the hands-on and more vocationally oriented part of practical social work. The first group of subjects was taught by teachers with a university background in the relevant disciplines. The vocational part of the training, including preparation for the long periods of practice that was an integral part of the program, was taught by experienced social workers. Many of the students coming to the schools of social work had an educational background not from the gymnasium but from the people’s high schools (folkhögskolor). The schools of social work in this period prepared for a career in social work or for an administrative career in the local authorities.

**School teachers** were the most numerous among the semi-professional categories. They were trained in the teachers colleges, institutions that had grown out from the seminaries. Originally these training establishments were developed in order to train the mass of teachers that was needed to fill the positions of the obligatory schools system that was passed as a law in 1842. Female teachers for the youngest age group (age 7-9), male and female teachers for the somewhat older pupils (aged 9-13) were all educated in three institutionally separate types of establishments, seminaries. These were established all around the country – in the large cities and in administrative centres of the counties. These teachers were trained with specific objectives in mind – they were expected to teach their pupils the basics of how to read, write, arithmetic, i.e. reproduction of basic acknowledge, as well citizenship and national values.

The emphasis was preparation for teaching basic knowledge to children of the popular classes. Entrance into teachers colleges did not demand a gymnasium. Those who became
teachers normally had not only a different educational but also a more modest social background than those who became students of at the universities.\textsuperscript{10}

There were also other special schools that trained for specific occupations - physiotherapists, physical education teachers, schools for training preschool teachers, recreation leaders and pedagogues. In the medical, nursing and caring fields there were specialist training for dental nurses, midwives, X-ray nurses and many other specialists.

All these occupational groups within the semi-professions were defined as being part of the \textit{Social category 2} (the employed part of the middle class)

\textit{Sweden today - an institutionally unified but internally differentiated and stratified landscape of professional training}

Still there is a large difference between the traditional, established universities with a heavy emphasis on research and the new universities and the plethora of university colleges. They still train the classical professions – physicians, lawyers, civil engineers etc. The full universities can devise their own research institutes and create new PhD programs in the areas they want. At the other end of spectrum we have recently establish university colleges, where undergraduate training and education of teachers and nurses are dominant features.

The two professional categories – the classical professions and the semi-professions - that 50 years ago had different institutional backgrounds for their training, different social and educational background for their students and distinct occupational and social destinations, still exist. But the professional landscape today is much more diverse and multifaceted. New types of knowledge, new types of occupations have emerged and reshaped the occupational system as well as the system of higher education.

4. Technological and social change and the emergence of pre-professions

Wholly new arenas of society as well as new “continents of knowledge” have opened up, demanding new forms of specialist knowledge. Thus the terrain and the race for new professional projects from both new and older occupational groups have opened up. The demand for new types of academic programs on the undergraduate level have their roots in societal changes, changes that are driven by scientific and technological inventions of the one hand and by the increasingly complex and multifaceted character of new social problems.

On the one hand we find the emergence of \textit{new technologies and specialised bodies of thought} in medical and natural and technological sciences. This goes all the way from an explosive growth of computer scientists, system analysts and web designers to the emergence of new categories such as the specialised biomedical analysts. This group has been rapidly transformed recently. The retooling of the former laboratory assistants evolved into the new medical/natural B.Sc. program, leading to the licensed occupation of biomedical analysts.

\textsuperscript{10} At this time there was a significant difference between the teachers in the gymnasium and the selective middle schools and the teachers in the obligatory school system. The teachers in the gymnasiums were graduates from the universities, who were given an additional period of training at the teachers colleges to learn them how to teach, handle the pupils and plan their lessons. This group of teachers had a more typical middle and upper class background, were shaped by the three to four years of university undergraduate education in their subjects, their marriage patterns etc. They also belonged to different trade union than the teachers trained at the teachers colleges.
On the other hand we find new forms of social and organisational problems that demands **new combinations of knowledge** to be handled effectively. New forms of multidisciplinary programs have been developed by combining different disciplines within the social sciences (e.g. to deal with integration and refugees problems) or by combining elements from the natural/technological fields with the social and economic sciences (e.g. to deal with environmental problems). These types of new specialists have been trained and educated so as to be able and competent to handle complex problems that makes their competence to master different sciences, theories and methods a central feature of their job.

These two major forces transform both the occupational system and the division of labour in society. At the same time these transformations have had a major role in reshaping the system of higher education.

Another force of transformation, with important effects for the system of higher education is the **demands for a higher level of both general and specific knowledge for many key occupations in society**. A typical case is that in the Swedish hospitals the number of nurse aides has decreased while the number of nurses (registered nurses) has increased. This should be seen as the combined effect of hospital managements wanting a higher level of competence among their staff and the activities of the nurses union for a larger role for the nurses.11

Two of the largest undergraduate programs in Sweden are now the programs that train students in **engineering and business administration on the three year Bachelor level**. If we go back in time to the 1980’s engineers were either on the high professional level of civil engineers or had a three (or four) education in the gymnasium. This latter type of training was successively upgraded to a university program. Today this type of engineering education has a longer training period than before and these programs have become one the largest in Swedish higher education today. These engineers are heading for the private sector, increasing the level of technical competence in many manufacturing and building firms.

At the same time the number of students in business administration, marketing etc. has increased dramatically. The number of business administration programs has multiplied during the last twenty-five years in Sweden, in line with the expansion of the university colleges. Earlier many companies and public administrative bodies had an occupational bifurcation of competence in economic matters. On the one hand there were a restricted number of MBA’s from the key business schools while on the other hand the mass of routine administrative and accounting positions were filled by persons who had specialised in business administration and accounting procedures in their high school (gymnasium) education.

5. **The emergence of new professional groups**

In order to present the full complexity of the Swedish professional landscape today we will point to the rapidly increasing third category of professional groups that we mentioned above, the pre-professions. This is a catch-all category for a number of occupations that are now engaged in some form of professionalization project. They have at least four different points of origin.

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11 The union of the nurses belong the white-collar national federation (TCO) while the nurse assistants was part of the Local government union within the Confederation of manual workers union (LO)
1. Already existing occupational groups want to enhance their professional character and status by transferring the education of their members to a university setting.

2. Occupational groups that are already being trained within the university or university college system seek an upgrading to the basic level of three years training, enough to qualify for a basic exam on the B.A. or the B.Sc.-level.

3. The initiative can rest within the state, e.g. coming from within the public agency itself. The striving to academically upgrade the police academy is a typical case, where some key players within the police force wanted such an upgrading.

4. The group of teachers affiliated to a vocational academic program can also be a key actor. Upgrading the education, by prolonging the years of studies, demanding higher academic level in the program etc can be in the interest of teachers as a collective by making demand for a more academically based education the precondition for demanding resources for (their own) research in this field.

When we look into a specific professionalization project we will find that more than one actor must be involved for such a project to succeed. And sometimes they fail.

6. Are all professions equal? Stratification among university-educated professional groups

Many scholars of professions emphasize what is common to the many different occupations that are now bundled together under the concept of “professional groups” - formal aspects such as having a three-year training at the university level, having an occupational organisation, following a code of ethics, dealing with clients, being oriented towards solving practical problem by using systematic knowledge. Thus a growing number of occupations have come to be defined as “professions”. Many occupational groups want to be acknowledged the status of a profession when their work, education and conduct have acquired some of the traits mentioned above.

Historically there was clear conception of the professions as making up an elite group in society whose social standing and societal role was determined by its long university training and their unique and highly valued expertise, rooted in their mastery of key forms of systematic thought – theology, jurisprudence and science to name three of them. In the 1950s to the 1970s sociologists grappled with the problem how to analytically treat occupational groups that shared some of the attributes of the classical professions, or having them to lesser degree. In an influential collection of articles, edited by Amitai Etzioni, the concept of “semi-professions” was launched as a way of handling the differences between the occupational groups in the classical professions and the expanding, increasingly more educated groups of teachers, nurses, social workers etc. (Etzioni 1969).

But all kinds of professions are not equal. They are internally stratified within each social domain of society at the same time as they cooperate and complement each other in solving their tasks. Physicians do their work in relation to nurses, midwives, physiotherapists and many more occupations – in co-operation but also with conflicts of power and demarcation struggles. Professional groups are also competing for power and influence across the domain borders.

The road to such a differentiated concept of types and levels of professions can start from the succinct list of the dimensions characterising and differentiating professions from semi-professions. Etzioni (1969) and others have came up with a useful list of dimensions in order
to compare semi-professions with the classical professions. In these dimensions occupations can have more or less, be more or less, act more or less etc. Therefore we can use it as a starting point for a more general discussion of stratification within the whole of the professional landscape. Semi-professions perform a type of work that in some respects is similar to those commonly regarded as professional. However, they are different in many important aspects. Semi-professions, when compared with classical professions, have the following characteristics.

1. The key differentiating aspects are the scientific – or at least the systematic - basis of their knowledge and expertise. The knowledge base has to be theoretical, systematic and applicable to the problems at hand for an occupational group to reach full professional stature.

2. A practical precondition for obtaining the type of knowledge and expertise referred to in (1) is the length of the study and training period. This implies that more emphasis is placed upon theory and method.

3. The traditional and historically given social standing of this or that occupational group do influence the credibility of the epistemic foundation of the occupational groups in question. Socially acknowledged credibility is a case in point. Skilful mastery of the esoteric and systematic rule-making codes in society – be it jurisprudence or accounting principles - can elevate a specific group and its monopolized knowledge base into a situation of being both undisputed and respected.

4. If women are subordinated to men in society, female-dominated occupations and their epistemic bases could thereby be accorded lower status than male-dominated occupations with other epistemic bases. A test of how far this mechanism is (still) in play will be the future of the medical profession, which in Sweden now is rapidly becoming dominated by female entrants to the field as well as among its recent graduates. This dimension can be seen as at least partly a consequence of the historically rooted social division of labour between men and women and not to something intrinsic to the professional group in question.

5. Different employment regimes – e.g. private-public sectors, large-small organizations, being employed or self-employed, working on the international-national level etc. - are important stratifying dimensions for all types of professional groups.

7. The university-based professional landscape as an encompassing classification of professional groups

We have used the idea of three categories of professions to make sense of the expanding field of professional groups. These three types - the classical professions, the semi-professions and the now emerging pre-professions – are constructed from their emergence in a historical sequence. As was shown above the professions within each category share other important characteristics, such as their relation to the University system and their epistemic basis, their social position etc.

However, the societal position of a given occupation can and do change over time. This can be the effect of changes in society – such as the decreasing role of religion in many European countries and the decline of the position, influence and credibility of the categories trained in theology. On the other hand, the role of lawyers in Sweden become more important following then entry of Sweden into the European unions, with its more complex and socially important forms of legislation, making studies in law schools a more attractive (and lucrative) option.
The effects of a generalised and prolonged training for certain occupational groups, following from their inclusion into the basic three year program of the B.A./B.Sc. type of education of the universities and university colleges increase their knowledge and expertise and also lead to an upgrading of their occupation to more professional level.

The nurses, the occupational therapists and the newly licensed occupation of biomedical analysts are examples of occupations that have benefited – in terms of professional status – from their prolonged and more academically oriented training. A number of occupations now have social and epistemic positions similar to the old semi-professions – and sometimes they aspire to even more advanced levels. They have established research degrees in their own field – laboratory medicine/science to take one example.

The increased general level of education and the increasing proportion of the population that have an academic education have had problematic effects for the social standing and influence of certain occupational groups. This is case for the social standing of school teachers. Today they meet ever more children in their classes whose parents have a higher education than they have themselves. The knowledge authority of the teaching professions has been falling in relative terms due to the effect of rising numbers of those having an academic education in society. Combined with changing recruitment patterns as well as the reformed teachers education this has led to a falling social position of the category, not only in terms of falling relative salaries.

The ever more increasing number of specialised study programs with a vocational bent, targeting specific occupational niches in the division of labour, is a major fact of the expansion of the higher education, in Sweden and elsewhere. The simultaneous prolonging of the training period AND the more precise targeting of specific knowledge elements in the programs has led to contradictory developments within the pre- and the semi-professions.

Nurses have seen their education becoming much more academic and scientific. Nursing science has rapidly become a key discipline within the education of nurses and has also grown rapidly as a research field, a discipline with quite a few professors and research units at Swedish universities and University colleges. Nurses are thereby in some ways coming closer to the classical professions. Bu they are still in a subordinate position within both the social and technical division of labour.

In dental care we find the classical profession of dentists but also occupations that are either service personnel to the dentist and the clinic (the dental assistant nurse) or specialists in the fields of dental technique (dental technicians) and for handling dental hygiene (dental hygienists). The latter group, with a clear female dominance, is now educated in a two-year program at a number of university colleges, outside the schools of dentistry. The national authority for higher education suggested that this program should be prolonged to three years and thereby become more academic in its structure. By now there are many teachers in this program with a doctoral degree. In the near future dental hygienists will probably enter the pre-professions, by having their education prolonged to three years.

Dental hygienists do not only perform tasks that have been delegated to them by the dentists. They have an independent role in the sphere of public health and they have also taken on some of the tasks that can as well be handled by the dental profession, such as treating tartar and the early stages of periodontoclasia (loss of teeth). In this area they, in the eyes of dentists, are perceived to push the limits of the technical division of labour and taking over some...
the tasks that dentists want to keep as part of their own work. They can and do offer cheaper treatment than the dentists. And therefore there is a zone of conflict and professional jurisdiction at stake.

More specific vocational programs
New specific programs can through their very specificity target certain job positions that earlier were filled by graduates from a more general vocational program. A recent example in Sweden is the expansion of programs with criminology as the defining subject. These programs are now given by a number of universities in Sweden. They target jobs in the area of criminal justice, in prisons and in the rehabilitation of former prisoners etc., jobs that used to filled by social workers.

The same principle of differentiation and competition can be seen in the field of media and information. Within “organizational communication – internally within the firm or the public sector administration, and externally, to potential and actual clients and customers and to the population at large, but also to key decision-makers in the political and administrative arena, - there is a demand for specific educational programs. Whole new departments of “information” have been set up in the larger firms and public sector departments. These are usually filled by graduates form the media programs but this field has become specialized into different programs, increasingly more specialized and more differentiated between general media and communication programs, for journalists, as well as for information specialists. We can now witness a new occupational specialty in information emerging. Information departments are not any longer being headed by retired journalists but increasingly by specialists in information. This group is now building a professional association of their own.

8. Complex problems – are multidisciplinary programs the solution?
Many new educational programs as well as many new research areas have started as a response to new kinds of social, economic and environment problems – climate changes, carbon dioxide, new forms of transport but also to problems of refugee immigration, integration, conflicts about multiculturalism etc. These educational programs are often constructed as multidisciplinary programs, combing many disciplines, In this sense they are similar to the basic principle of the classical professional programs which are built upon many small modules coming from many different and specialized disciplines – Medical schools are good examples as are the civil engineering programs.

There are two partly independent, partly also closely related structures that together define the possibilities for the emergence of a new professional landscape – the system of higher education and its institutional and organisational principles and mode of financing and the occupational structure and the demand for – or least the openness – for new forms of competence and expertise.

Within the Swedish higher education sector, each university and each department are looking for new fields to explore and exploit by finding – or inventing - an occupational niche, designing a specific education program that will equip its graduates with qualifications that is already in demand. Sometimes they succeed in designing a program that later is acknowledged as more or less self-evident. The Swedish HRM-program was constructed in the early 1980’s, in a cooperative effort involving many universities. It has been and is still taught at several universities and university colleges. Today, it is seen as a “natural” background for graduates seeking positions in the area of personnel administration. The graduates from this
program are an established pre-profession, now engaged in a process of becoming fully professionalized. “Working life science” is an established research subject with its own PhD programs at a number of Swedish universities.

University colleges as well as smaller, new universities can move faster than old established universities in this terrain – this makes it easier for them to detect and channel the ambitions of established occupational groups that want to upgrade their training.

This is also valid for the emergence of specialisation of occupational functions that earlier was taken for granted that they rested within or at the fringes of an established occupational and academic vocational training. The focus on leisure and sports, including coaching and sports management, ethnicity and immigration, criminology, youth culture, childhood studies culture administration, pop culture etc has given rise to many new and rapidly growing educational programs. This is a parallel within social science and the humanities to the extreme specialisation of technological and medical competences, still in motion. Ever more specific experts that can claim to have the relevant knowledge for handling specific problems.


9.1. Swedish higher education in numbers

Sweden ranks highly according to several of the indicators used in the OECD. Sweden devotes 1.7% of GDP to higher education and research, half of which goes towards research and third cycle (doctoral) programs. In 2010 the aggregate revenues amounted to SEK 57.6 billion. Direct state funding for both teaching and research amounted to SEK 37.5 billion in 2010. This corresponds to 65% of the total revenues.

In addition to direct state funding, the state provided SEK 9.4 billion to fund the operations through different public agencies such as local authorities and county councils, the EU and public research foundations. In all, different public sources accounted for 89% of the total funding. Swedish companies and, more important, non-profit organizations in Sweden accounted for SEK 4.8 billion of the funding in 2010.

First and second-cycle programs are largely (87%) financed by direct state funding, while less than half of the finance (47%) for research and third-cycle education takes this form.

On average the OECD countries devoted 3.0% of their public expenditure to higher education. Sweden allocated 3.4% of its public funding, or 1.8% of its GDP, to higher education in 2007.

Expansion.

- Between 1995 and 2005, the number of students in higher education rose by about 50%.
- In 2010, there were 433,000 students enrolled in first (undergraduate) and second (Master’s) cycle programs. Full-time equivalent students: 304,000
- Gender split: 41% male, 59% female
- Non-Swedish background: 18% (born abroad or with two parents born abroad)

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12 This is based on presentations and documents published by the Swedish National Agency for Higher Education.
A total of 60 % of all FTEs were studying in the subject areas of law and social science or the humanities and theology. The distribution of FTEs between different subject areas varies for women and men. Nearly half of all women students, measured in FTEs, were to be found in law and social science, 17 % in the humanities and theology and 10 % in health and caring sciences. Among men, just fewer than 40 % were studying law and social sciences, 24 % technology and 15 % humanities and theology.

The number of FTEs raised most – by 11,000 FTEs – in the subject areas of law and social sciences.

During the academic year 2009/10 the total number graduating amounted to 51,700. Women accounted for 65 % of the qualifications awarded and men 35 %.

**PhD Students.**

In 2010 the number of students taking third- cycle programs totalled 17,700. Of this total, 49 % were women and 51 % men. In a long perspective – the period 1990-2010 – the number of entrants to doctoral programs has risen by 52 %. Almost half of today’s entrants – or 47 % – were women.

The gender balance in the different disciplinary domains varies. It is most uneven in technology (with 71 % men and 29 % women), medicine (with 59 % women and 41 % men) and social science (with 57 % women and 43 % men).

About 30 % of the third-cycle entrants were doctoral students from abroad. Half of the international entrants to third- cycle programs came from Asia. China was the most frequent country of origins.

Of those awarded PhDs in 2000 and 2002 almost nine out of ten were established in the labour market in 2008.

Third cycle (doctoral) studies: Sweden awards a high number of doctorates: 2.7% in relation to the size of a typical age cohort.

**9.2. Higher Education as a mechanism for social change in the Welfare State**

The Government’s target is that 50% of those born in any given year are to have embarked on university level education by the age of 25.

Education has been seen as a key vehicle for social change for Swedish governments ever since the Second World War. The main idea of that time and also today is that public education should be for everyone, and that different social classes should meet in the school system. An important part of Swedish education policy is to avoid “dead-ends” in education. It should be possible to go on to higher education from all other forms of education. A distinct feature of the Swedish education system, for example, is that upper-secondary education is intended to prepare for both higher studies and working life.

It is clear that socioeconomic background affects the propensity to embark on higher education. Depending on locality, gender, educational background, and the parents’ education, the proportion of 25-year-olds having enrolled in Higher Education by the age of 25 varies between 6 % and 94%.

The proportion of young people with working class backgrounds is higher in shorter programs leading to vocational degrees in, for example, health care and teaching, while students from upper middle class backgrounds are overrepresented in long programs such as medicine or law.
Since the 1960s one aim of higher education policy has been to improve access to higher studies across the country. In the second half of the 1960s, the number of students increased sharply, necessitating expansion of the higher education system. Several university branches or subsidiaries were established which eventually became universities in their own right. New institutions have been established, and some university colleges outside the traditional university regions have received university status. The number of study places at institutions outside the traditional university regions has grown rapidly, and the amount of research funding allocated to many of the newer institutions has increased.

Early motives for the regional expansion were increased access to higher education for larger segments of Sweden’s inhabitants, as well as improvement of the provision of qualified personnel in poorly served regions.

Since 1990 a number of new university colleges have been founded. A number of university colleges have been granted university status. Today there is at least one university/university college in each county. The sector also comprises branches of existing institutions in other locations, and distance higher education.

There has been a rather significant geographical redistribution of study places since the late 1980s. In the early 1990s, 8 out of 10 students were registered in six major urban areas. In the 2000’s this figure was 6 out of 10. A large proportion – approx. 40% – of general degrees awarded (bachelor’s and master’s) are now awarded by the newer institutions.

Despite the regional redistribution there are still major disparities between different counties of Sweden in the transfer rate to higher education of young people (up to 26 years of age). These differences are even more pronounced at municipality level. The transfer rate varies from over three-quarters in the municipalities with the highest rate, to just over one-quarter in those with the lowest.

It is the Government’s policy goal that higher education should become more flexible and easily available both geographically and in terms of age. Distance education, especially via the Internet, has a long tradition in Sweden and has grown rapidly since the mid-1990s. Numerous municipal “learning centres” have sprung up around the country. These centres assist students with student counselling, for example, access to library services and computers, etc. They provide services not least to many distance students in municipalities situated far from university campuses.

In the academic year 2009/10 134,000 higher education students were taking distance courses. On average, distance students are older than on-campus students. This is linked to the fact that they have often already completed a higher education program.

9.3. Higher Education and Employment

The majority of those graduating establish themselves in the labour market relatively quickly. On average, 80 % of the graduates from first and second-cycle programs had gained a footing in the labour market 1–1.5 years after graduation and 75 % were both established and had employment that requires a higher education qualification.
There was a high degree of becoming established in the labour market among recent graduates in the fields of medicine/dentistry, technology and health and caring sciences, 93, 89 and 84%. Fields such as education, law/social science and agriculture and silviculture had establishment rates of 77, 79 and 81%. The natural sciences, humanities and theology as well as the fine, applied and performing arts were well under the average level.

In general, graduates from higher education have a better footing in the labour market than those with upper-secondary qualifications or only compulsory education. However, rising unemployment levels for HE graduates as well have given rise to debate in the last few years. In 2004 unemployment among all HE graduates (including those with PhD’s) was 3.8%, as compared with 5.8% among upper-secondary graduates and 7.9% among those with only compulsory education.

9.4. Student recruitment and the system of financing higher education studies

The Swedish system of student finance is designed so that higher education is accessible to all, regardless of social and regional background. Equal access to education has long been one of the pillars of the Swedish welfare state. Education from primary school to higher education is mainly tax financed and free of charge to the student. All students in Higher Education have access to a study support system based on loans and grants. Students in Sweden are considered to be adults and are formally regarded as independent of their parents. Consequently, the study support systems are based on the student’s own income and do not take parental income into account. As tuition at higher education institutions in Sweden is (still) free-of-charge, student finance is intended to cover living expenses and the cost of study material.

Everyone below the age of fifty-four – in practice below 45 - has the right to apply for student finance for a maximum of 240 weeks. Student finance comprises a grant and a loan. The student loan must be repaid on a monthly basis before the loan recipient reaches the age of sixty. The size of the monthly payment is determined by the size of the debt and the interest rate. The amount is also adjusted to the recipient's income and ability to pay. There is limit for the yearly repayment cost – not more than 5 % of the yearly non-taxed income.
Selected references


