

A SUMMARY OF
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National evaluation of the compulsory school in 2003

A summary main report



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Foreword

The national evaluation of the compulsory school in 2003 has been initiated by the National Agency for Education to obtain a picture of developments in the compulsory school during the 1990s, a decade which has been characterised by a large number of reforms in the school area. In some cases it has been possible to make comparisons with the situation in 1992, when the first major national evaluation of the compulsory school was carried out.

This study presents the background to the development of the compulsory school in the 1990s and the beginning of the 2000s, and provides a description of the structure and implementation of the evaluation and thereafter a summary of the most important results. In the light of this the National Agency for Education discusses in the concluding section some questions and dilemmas concerning the compulsory school's attainment of goals.

The design of the evaluation instrument, analyses of data collected and reports from the subject studies which have been a part of the evaluation have been assigned as special tasks to research groups at universities and university colleges around the country. A group of analysts in the investigation department at the National Agency for Education has centrally produced and made an analysis of the issues arising from the different subject questionnaires to teachers and pupils, and been responsible for the final report.

The project group at the National Agency for Education has been made up of the following members Oscar Öquist (project leader), Sten Söderberg (deputy project leader), Gunhild Bartholdsson, Daniel Gustavsson, Gunnar Iselau, Caroline Klingenstierna, Christian Lundahl, Gunilla Olsson, AnnSofi Persson-Stenborg (The Swedish National Agency for School Improvement), Camilla Thinsz-Fjellström and Aina Tullberg. The report has been translated by Brian Turner, IMC, Stockholm.

Stockholm 28 October 2004

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Why a national evaluation of the compulsory school in 2003?

The National Agency for Education has been given the task by the state of following up and evaluating the school system, and providing proposals to the government on measures to maintain and strengthen the attainment of the national goals.

The first major national evaluation of the compulsory school was carried out in 1992 in order to provide an overall picture of the compulsory school and goal attainment. It provided a picture of the school's activities and the pupils' knowledge on completion of compulsory schooling.

Since 1992 society has undergone major changes, which have had an effect on the living conditions of both adults and young persons. The school has been given a new task and different conditions.

It is against this background that the National Agency for Education decided in 2001 to carry out a new national evaluation in spring of 2003 (NU-03). The aim was to create a common starting point for state measures by providing an overall perspective on the goal attainment of the compulsory school and the factors affecting this. The orientation is to clarify whether pupils are acquiring the knowledge laid down in the state steering documents, and also what development trends, compared with results from earlier evaluations, can be distinguished both on a general level and in specific subjects. It is particularly important to have a foundation for clarifying the situation for those pupils who do not attain the goals. It is also essential to clarify the effects of the new emphasis in the steering documents on the goals of the foundation values. In order to provide a perspective on goal attainment, the evaluation gives prominence to how partners in the school are acting, that is the views of pupils, teachers, head teachers and parents. This makes it possible to carry out an extensive and detailed examination of the school's activity and goal attainment.

The main purpose of the national evaluation is to provide a basis for national decisions on the compulsory school by:

- providing an overall picture of goal attainment in the compulsory school, by subject and from an overall perspective,
- showing changes that have taken place since the national evaluation of 1992,
- pointing out the need for measures.

Reporting of results

The results are presented in the reports and studies below.

National evaluation of the compulsory school in 2003 – summary main report

This report is mainly directed to decision-makers at different levels and describes the current status and need for further measures. It aims to provide a first overall, principally descriptive and general picture of results, and also in a concluding section discusses the results as a starting point for development measures in the compulsory school.

National evaluation of the compulsory school in 2003 – main report

This report consist of three parts. Here the National Agency for Education presents a picture of changes that have occurred and the current situation in subjects in terms of teaching and goal attainment, and also for the purpose of clarifying subject specific needs for reinforcing measures.

Subject reports

Subject reports, mainly directed to pedagogues and intended for i.a. didactic competence development material, will be published as separate reports early in 2005.

In-depth thematic reports

The national evaluation creates opportunities for in-depth analyses. Five such reports have been planned. Two of these will deal with the importance of teachers in determining the results of pupils and also dissimilarities in pupils' preconditions and results. These will be published in 2005.

What has happened in society and school since the evaluation of 1992?

During the 1990s Sweden underwent a crisis, characterised by a deep economic downturn and disquiet on the labour market. It was during this period in 1994, that the majority of pupils participating in this study started their schooling. They have spent nine years in a school which has had to confront major, new challenges.

As background to the results presented in this report, the changes in society from both the perspective of young people and that of the school are sketched below.

Changes from the pupils' perspective

The vast majority of pupils taking part in this evaluation were born in 1987 and 1991. For the adult population, the 90s was a period of economic decline and great uncertainty, and for young persons this was the only social and economic reality they were familiar with. During the 1990s young people experienced developments in society which have provided them with a range of opportunities different to those that existed for preceding generations. At the same time they have also encountered obstacles, which did not exist to the same extent as for earlier generations.

Increasing diversity leads to more perspectives and more opportunities for making choices. These young people have grown up in a society which has been increasingly characterised by, and derives its energy from diversity in views of life, lifestyles, recreational activities and as active consumers on the market. They have great opportunities to observe and try out different alternatives to their current attitudes to life. Diversity also means that the surrounding world can be experienced as relative and insecure. In conjunction with increasing differences between the living conditions of young people socially, culturally and socio-economically, and factors coupled with the desire for a strong identity, this may pose a risk that views become oversimplified and lead to increasing antagonism.

Opportunities for communicating have exploded. Computers and mobile telephones have opened up completely new opportunities for keeping oneself informed, and behaving and developing an identity in social contexts. They have also led to new routes for making social contacts and helped blur the borders between what is local and what is global. The increasing range of media have led to the emergence of new language patterns and new sources of knowledge. At the same time, young people are exposed to powerful market forces

and massive flows of information. The tension between these shows the importance of developing inner self-reliance and having deeply rooted values and knowledge.

The future has become still more difficult to predict. Global events much more than before have an impact on conditions in our immediate surroundings. At the same time as traditional routes for studies and professions do not always function, new routes are opening up opportunities that are often very uncertain. The uncertainty of the future only serves to reinforce the pressures we have to cope with. Insight into the importance of being independent, uncertainty about what skills and qualities are critical in an increasingly competitive labour market, and being on the look out for opportunities which lead to success, puts great pressure on many young people.

Perhaps being able to keep up-to-date, continuously choosing goods and lifestyles from innumerable options combined with uncertainty over the future, has led young people to increasingly focus on life in the here and now in comparison to earlier generations. At the same time pupils encounter a school which by tradition shapes pupils for the future, but which as part of its mission puts great emphasis on taking pupils' current experiences, their interests and preconditions and needs as its starting point. As background to the results of the national evaluations, this situation serves to underline the importance of giving prominence to the changes which have taken place in the school during the 1990s.

Changes from a school perspective

The school has undergone changes similar to those in the rest of society. Often changes in the school lag behind those elsewhere in society, and the reorientation of surrounding sectors also adds to the pressure on the school to adapt. In this way changes in the social safety network, in the labour market, in IT development and the freer operation of market forces have all in different ways affected the school's development of its own activities.

The "municipalisation" of the school in 1991 led to municipalities having operating responsibility for the school. In the majority of municipalities this involved a reorganisation of school activities. A long-term agreement for the teachers was reached in 1996 between the Association of Local Authorities and the trade unions in order to provide good conditions for developing the school. During the 1990s, increasing numbers of schools were started with principal organisers other than those from the municipality, namely, independent schools. At the same time the reform on freedom of choice was implemented, giving parents and pupils the right and opportunity to choose both municipal as well as independent schools.

Underpinning the development of the school during the 1990s, there was a transition, agreed on between employers and trade union organisations, to a school based on work teams. In this teachers were expected to jointly take responsibility for the development and learning of a group of pupils where recurring features of the work involved carrying out joint analysis of goals, planning and evaluation.

At the same time as internal changes were taking place in the school, the financial conditions for the school were becoming weaker. The crises in public finances lead to cutbacks in the majority of municipalities and also in school budgets. The 1990s were typified in many municipalities by rationalisation and reorganisation of schooling.

While the state clarified and defined more rigorously the responsibilities of head teachers and teachers, and also i.a. introduced a minimum goal level, savings requirements in the municipalities led to decreases in teacher-pupil ratios in the schools by on average 20 percent between 1991 and 1996. In addition, the proportion of qualified teachers decreased. This took place at the same time as the economic crisis was undermining the labour market and adding to the uncertainty facing many pupils in their daily life. The social dimension of teachers' work increased in scope and importance. Even though the situation after 2000 has led to a gradual recovery towards earlier teacher-pupil ratio levels, the current situation is very largely a reflection of the priority allocated to social measures which the school was assigned and obliged to carry out. The recovery has not automatically lead to more teachers. The ratio of adults to pupils has primarily increased amongst staff without a background in educational pedagogy.

Wide ranging changes in the school and the discussion this has given rise to, both nationally as well as locally, have meant that the school is covered even more extensively today in the media and social debate than was the case 10 years ago. At the same time this has inevitably led to increased activity on the part of those with responsibilities at all levels in the education system. The state has in a different way than before, monitored results and assessed the situation and taken appropriate methods. Today the school is now on the municipal agenda, both in terms of its results, in budget negotiations, and as a factor that can affect the attractiveness of the municipality inducing people to move in and companies to relocate. Parents have greater opportunities to be more actively involved in their child's school by i.a. development dialogue, the opportunity to choose school, and through having access to greater information about what is happening in the school. Pupils i.a. by means of clearer goal descriptions in steering documents and through knowledge related grading cri-

teria, have received better opportunities to understand and influence their learning situation.

Developments from the beginning of the 1990s have also led to a rapprochement and a broader dialogue between those responsible. Goal and result oriented steering together with increasingly clear steering documents have been contributory factors. The state dialogue with the municipalities about their responsibility for schools and the results achieved has increased. As a result of municipalisation and the requirement for quality reports, communication between municipal politicians and the professionals in the school has become necessary. Inter-communication between the head teacher and the staff has increased due to greater freedom and decentralisation of responsibility. The existence of the work team has provided a forum for joint discussions, and opportunities for developing more professional relationships and a more informal approach. The task of teachers to develop local goals and grading criteria provide the preconditions for pedagogical dialogues. Parents have by means of i.a. the development dialogue obtained greater insight into their child's schooling. Pupils' preconditions for participation and dialogue with their teachers has in many ways increased as a result of i.a. the work team organisation in the school, and more rigorous formulations in the steering documents about pupils' rights to exercise influence over their study situation. Overall the school in different forms during the 1990s has been empowered to develop more inherently democratic approaches in its methods of working.

However, the picture of a convergence of views amongst those involved is not general. There are still major differences in schools, between schools and between different principal organisers.

Tasks and responsibilities

The national steering documents applicable to the national evaluation in 1992 (NU-92) have been replaced by new ones. As a background to the results provided in the following section, a picture is presented of the main changes concerning the orientation and contents of the task, as well as the significance of changes in division of responsibility.

Changes in tasks

The national curriculum for the compulsory school, Lgr 80, which applied up to NU-92, was set out in a single document with three sections; Goals and guidelines, Timetables and Syllabuses. The document, following a decision by the Riksdag in 1992 was given the title, the curriculum, Lpo 94, and laid down the overall goals and guidelines for education in the compulsory school forms. The syllabuses and timetables are contained in separate documents. Lpo 94 has applied to the compulsory school since school year 1995/96 and the related syllabuses since 1996/97. The curriculum was adapted in 1998 to also incorporate the preschool class and the leisure time centre. The syllabuses were subsequently revised in 2000.

The curriculum

A quick glance at Lpo 94 makes the changes compared to earlier curricula immediately apparent. The document itself is only 10 pages in length. The content is made up of goals and guidelines, clearly and directly addressing the professionals in the school. The key terms are “goals to strive towards” and “goals to attain”, and in terms of guidelines “the teacher shall.....” and “all who work in school shall.....”. The curriculum concludes by clearly pointing out that the head teacher, as the pedagogical leader and head of the teachers, is responsible for the results attained by the school. Lpo 94 differs from earlier curricula in that the goals are formulated in terms of the individual. The responsibility of the school to assist each individual is underlined by the recurrence of the phrase “each pupil” in the guidelines. At the same time the importance of pupils developing in interaction with each other is emphasised.

The curriculum although concise is clear. Its introduction provided the foundations for a joint and overall effort in reorganising the school, a process which started in many municipalities. In addition, the publication of Lpo 94 (Curriculum for the compulsory school system, the pre-school class and the leisure-time centre) and Lpf 94 (the curriculum for the non compulsory school system) as a single document served to highlight the importance of continuity

between the compulsory and upper secondary school. Both curricula were largely similar in content and structure, and were distributed together as a booklet. An overall perspective was achieved as a result of the introduction of the curriculum for the pre-school, Lpfö 98, and the adaptation in 1998 of Lpo 94 for the pre-school class and the leisure-time centre. The three curricula link into each other and represent a coherent view of knowledge, development and learning.

The task of promoting the fundamental values was already prominent in Lgr 80. The importance of the school developing the democratic competence of each pupil is even more clearly expressed in the current curriculum. The goal that “The school shall actively and consciously influence and stimulate pupils into embracing the common values of our society” is accompanied by clear goals to strive towards and the guidelines for school personnel. The task of instilling fundamental values was further emphasised in 1998 when revisions were made to Lpo 94, since the goals and guidelines for “Norms and values” switched places with the section on “Knowledge” to become the introductory section.

The current curriculum expresses more clearly than its predecessor the state’s fundamental view of knowledge. “Knowledge is a complex, multi-faceted concept. Knowledge is expressed in a variety of forms – such as facts, understanding, skills, familiarity and experience – all of which presuppose and interact with each other. The work of the school must focus on providing scope for the expression of these different forms of knowledge as well as creating a learning process where they balance and interact with each other to form a meaningful whole”.

Lpo 94 led to increased emphasis on functional knowledge, namely knowledge that is valued in terms of its importance and usefulness for personal development, as a citizen of society and as a basis for further education. The starting point is the pupil. This is made clear by the fact that pupils understand the goals to strive towards in the section on “Knowledge” which states that each pupil shall develop curiosity and the desire to learn, and develop their own way of learning and confidence in their own abilities. Thereafter the importance of interacting with others is expressed, as well as the ability to use their knowledge as a tool. In particular it is the constructive, contextual and functional aspects of knowledge which are emphasised in the curriculum. The curriculum also lays down in a special section, goals to attain, the fundamental goals which each pupil shall have attained on completion of compulsory schooling.

Syllabuses

The curriculum and syllabuses are connected to each other and should be regarded as a whole. Both the curriculum and the syllabuses shall provide the foundation for teaching. The syllabuses are a concrete transformation of the goals in the curriculum.

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The structure of the syllabuses reflects the division of responsibility between the state and the professionals in the school. By means of setting up the goals, as well as the results to be expected, the state imposes demands on the quality and equivalence of the education. How the goals are to be attained, namely choice of content and method, is determined by the teacher. However, the state also lays down through the curriculum overall requirements on the framework for local activity. Planning of teaching and evaluation is to take place together with the pupils and takes as its starting point the pupils' needs, conditions, past experiences and thinking. The fundamental values shall not only permeate teaching, but also the organisation, coordination of teaching in different subjects, as well as choices over ways of working. It is thus the goals and guidelines in the curriculum that set out the principles governing how school work should be carried out.

The focus was on moving away from detailed instructions, a process which had been initiated in earlier syllabuses. The process of eliminating concrete instructions on methods and choice of materials as started in the syllabuses for school year 1995/96 was further extended in the revised version of 2000.

The new syllabuses also involve changes in the structure of the subjects. The major change from Lgr 80 concerned the "orientation subjects", described in Lgr 80 as a common block, were now divided up into separate subjects. In addition, the subjects "study of children and childhood" and typewriting were no longer included. In the most recent review in 2000, as a result of changes in the goals, the title of the subject "sports" was changed to "physical education and health" and "domestic science" to "home and consumer studies". In the other school subjects, revisions to the syllabuses in 2000 involved changes in orientation and emphasis. Compared with each other, the subjects are of a different nature and reflect different theoretical starting points. At the same time they supplement each other and form an integrated whole reflecting the goals of the curriculum.

The syllabuses for the respective subjects are structured in a similar way. They express through "goals to strive towards" the orientation of teaching in the subject by formulating the knowledge to be attained. The "goals to be attained" set out the minimum level of knowledge in the subject that all pupils

shall attain in year 5 and year 9. In addition, the syllabuses express more clearly than before both the purpose and nature of the subject.

The “goals to be attained” in the syllabuses have had a pivotal role in shaping the activities of the school during the 1990s. “Goals to be attained” has become something of a mantra, for both good and bad. The state underlined in a completely different way the obligations in the steering document and gave all those responsible a joint picture of the minimum result level to be attained by each pupil. The impact of the term “goals to be attained” on school activities also had some less desirable effects. In practice, it could be the case that the minimum level of knowledge expressed by the “goals to be attained” steered the orientation of teaching in the subject, but not as was intended in terms of the knowledge expressed in the goals to strive towards. Particular attention was given to the “goals to be attained” in the subjects of English, mathematics and Swedish as grades in these subjects provided eligibility to the national programmes of the upper secondary school.

Assessing grades

Perhaps it is the changes in the guidelines on assessment, and particularly a new grading system, which the school experienced as the major consequence of the transition to a goal and result oriented steering system. Earlier the grades reflected the knowledge acquired by pupils in relation to each other, under the new system they show each pupil’s level of knowledge in relation to the goals set up. The relative grading system, with a grading scale from 1–5, had since 1963 typified the school’s activities. In 1995/96 the new knowledge related grading system was introduced with the grades of Pass, Pass with Distinction, and Pass with Special Distinction. The most noteworthy aspect of this was that pupils could also end up without grades, which signified that they had not yet achieved the minimum goals of the subject. It was a completely new situation.

The grades, in sharp contrast to earlier, have an absolute content reference point and have thus been able to provide the basis for a dialogue on assessment, both between the professionals, and with pupils and their parents. In this way, changes in grading have helped to provide a clearer picture than before of the knowledge to be attained and acquired.

Timetable

An important change in Lpo 94 was that state regulations concerning allocation of hours over different years for teaching in different subjects were removed. In Lgr 80, the number of lessons and content of teaching in the subject was provided in three “levels”; a low, intermediate, and high level. Lpo 94

contains instructions on how teaching hours in different subjects should be allocated over different school years. The scope of the education in terms of time is now stated as a total guaranteed number of clock hours for the respective subjects for the whole of the compulsory school, namely a total of 6 665 hours. The municipalities, which decide on how the education is to be implemented, can thus make different decisions about the school year in which the teaching shall be provided. Local planning is steered, however, by the goals in the subject syllabuses that state what knowledge should be attained by the end of the fifth and ninth school year. The changes between the two curricula in the allocation of hours to subjects meant that the minimum number of hours (guaranteed hours for teacher led instruction) has decreased in art, home and consumer studies, physical education and health, music and also crafts, as well as science studies including technology. The social study subjects have as a group been given greater scope in the timetable. Only a few minor changes have taken place in Swedish, English and mathematics.

Changes in responsibility

The division of responsibility between the state, municipalities head teachers and teachers has become more evident as a result of the transition to a goal and result oriented view of schooling. In line with this, pupils' assumption of responsibility is more clearly emphasised in the steering documents than before. Also the parents' share of responsibility in their child's schooling is clearly stated.

Since the responsibility taken at each level is of great importance when assessing the results of the national evaluation in terms of consequences and measures, a brief review of changes in the division of responsibility is provided below.

The State and the National Agency for Education

The state, that is the Riksdag and the government, have the overall responsibility for quality and equivalence in the Swedish compulsory school. The national goals for the school are laid down in the Education Act and in the curricula. From the end of the 1980s and with increasingly greater impact in the 1990s, the state has changed the emphasis in its approach from steering by rules to goal and result oriented steering. In the first stage, this means that centrally determined regulations, earmarked resources and detailed rules and instructions on how schooling should be organised were dramatically reduced as a result of municipalisation. Instead, the emphasis was put on specifying in greater detail the goals of the school and the results it is expected to attain. The

state should be clear over what the school is expected to attain, and only to a limited extent determine how this should be carried out. The state, however, is still responsible for monitoring the national requirement for quality, national equivalence, and safeguarding the rights of the individual under the legislation. Subsequently as the state examination has identified shortcomings in quality and major variations between conditions in schools and results, the state at the end of the 1990s intervened through a number of different centrally determined measures. This took place i.a. in the form of an increase in general state grants and thereafter targeted state grants to the municipalities in order to increase teacher pupil ratios. Another important central initiative for quality and equivalence was the initiative for IT in Schools (ITiS). As part of the state's responsibility for quality, in 1997 municipalities and schools were obliged to provide annual quality reports and the National Agency for Education received new tasks to examine quality. This led in 2002 to the establishment of a special educational inspectorate within the National Agency for Education, which examines quality, quality work and also how pupils' rights are being safeguarded at the municipal and school level.

From the 1990s, the National Agency for Education has in tried in different ways to realise its ambition of working on national quality and equivalence. One of the clearest measures was the offer to schools in 1995 of national subject tests in year 5. The material provided both support for teachers in their assessment of knowledge and pedagogical stimuli related to the goals in the steering documents. Today, the activities of the National Agency for Education are a factor affecting those active in municipalities in schools to a different extent and a different way than was the case during its establishment at the beginning of the 1990s. Not only does this relate to the state's interest in following up and evaluating school activities. The requirement for quality reports, an increase in inspection, as well as recurring national evaluations are examples of this. Not only has the National Agency for Education since its establishment had the task of supporting and stimulating good and equivalent development of schooling, which has also been reinforced through targeted funding and also by the fact that schools via the Agency's web site can obtain up to date information, statistics and development material. This role of stimulating and providing support was given greater emphasis in 2003 by the establishment of the Swedish National Agency for School Improvement. The agency was given the task of supporting municipalities and other principal organisers in their development of the pre-school and school, as well as a number of other measures including responsibility for training and development of school heads.

Municipalities

Municipalisation of the school meant that municipal politicians became the principal organisers of schools in the municipality. In the case of independent schools, it is the individual principal organiser who is responsible. The principal organiser has operating responsibility and great freedom to determine how schooling is to be organised in order to secure attainment of the national goals. The municipalities, by means of the general state grant, are responsible for ensuring that the school receives the resources and working conditions they generally need. Municipalities are responsible for implementing schooling in accordance with the task laid down by the state. The state's requirement that the municipalities take responsibility was made evident by municipalisation and the obligation of the local municipal board to draw up a school plan. Subsequently, the overall responsibility of the municipalities for attaining the goals has been given increasing emphasis. This is particularly clear as the principal organiser in an annual quality report is required to describe the extent to which the national goals for the education have been attained, and report on what measures are needed when the goals have not been attained.

The process whereby municipalities take over responsibility for schooling has not taken place without any problems. The shortcomings identified (in the municipalities' assumption of responsibility) can be illustrated by the fact that a relatively large number of municipalities did not initially follow the requirement to provide reports on quality. A large proportion of municipalities' actions can be explained by the difficult state of public finances in the middle of the 1990s, which meant that most municipalities had to cut resources allocated to the compulsory school. Between the years 1991 and 1996, total costs per pupil decreased by about 10 percent. Costs of teaching, especially personnel salaries, decreased during the same period by 20 percent. Thereafter a slow recovery has taken place, supported by further state grants for additional personnel.

Head teachers and teachers

The task of the head teacher as a result of Lpo 94 has changed substantially. The part of the task regulated by the state meant that the head teacher is the pedagogical leader and head of the teachers. The task of the head teacher is to take responsibility for the results of the school and he/she is thus responsible that the school's activities as a whole focus on attaining the national goals. At the same time during the municipalisation process, head teachers received additional tasks from the municipality. For example, it was not uncommon that head teachers received responsibility for the school premises and that responsi-

bility for teaching staff was extended to include other groups of personnel in the school. The requirement that the head teacher, often with declining financial resources, should maintain a balanced budget became clearer. In practice, the head teacher could be confronted with a choice between “red” figures in the school’s financial results, or “red” figures in terms of pedagogical outcomes. During the 1990s changes in head teachers at schools took place more frequently than before.

The task of the teacher has become increasingly clear. The state addresses itself through the curriculum directly to teachers, “The teacher should.....”. The tasks in the curriculum and syllabuses set out the goals to be applied to teaching and clarify what results are to be expected. This applies to the norms and values, as well as knowledge. Goals and guidelines are also given to teachers concerning pupils’ exercise of influence, contacts with parents, coordination with teachers for younger and older pupils, information for the pupil’s further education, and also how assessment and grading should be carried out.

By means of the curriculum and the syllabuses, the state gives a pedagogical task directly to teachers, and not through the head teacher or the principal organiser. In this way, great confidence is expressed in the competence of teachers to concretise their task and find the best way of assisting pupils to attain the goals set up.

At the same time as the curriculum leads to a more explicit task for teachers, the school underwent major and substantial changes. Municipalisation and new agreements with the trade unions led to new conditions. The time spent by teachers at school is regulated and salaries are connected to individual performance. The 1990s were characterised by internal reorganisations of schools, where teachers, often in a completely different way than before, were involved in the process. The work team provides opportunities for greater coordination and joint taking of responsibility. At the same time greater freedom and an often decentralised organisation led to a situation with increasing administrative and social tasks.

Parents

The responsibility of parents also became clearer during the 1990s. Teachers and parents have as laid down in the curriculum shared responsibility for the pupil’s schooling. Teachers are required to coordinate with and regularly inform parents and guardians, which can lead to a dialogue and cooperation with these people.

The introduction of the development dialogue has clarified the responsibility of parents for their child’s schooling. The development dialogue means that

parents, pupils and teachers on equal grounds share responsibility for strengthening pupils' opportunities for acquiring further knowledge. As a result parents are more clearly involved than before in their child's schooling.

The opportunities for parents to be jointly responsible for their child's schooling has also been strengthened by the fact that the goals of the curriculum and the syllabuses are clearer, and as a result of municipalisation there is greater closeness to decision-making politicians, and also enhanced opportunities to choose school.

Pupils

Pupils' perspectives of school during the 1990s can be described as a continuing transition from a situation where the pupil is subordinate to the teacher into an active agent responsible for his/her own learning. The pupils' responsibility is made evident by the fact that the curriculum states that it is the pupils' capacity to take responsibility that should be developed in the school. It is thus the responsibility of the school to develop pupils' capacity to take responsibility. Even though the curriculum states that the pupils shall carry out research, learn and work, both independently and together with others, greater emphasis than before is placed on pupils receiving opportunities to take initiatives and responsibility, and being given the preconditions for developing their ability to work independently and solve problems.

One of the major aspects of state steering is that pupils shall exercise influence over their personal study situation. Each pupil should develop personal responsibility for their studies and working environment. The basic idea is that the pupils shall develop through acquiring knowledge and socially by taking greater responsibility for their own work and for the school environment, as well as having genuine scope to exercise influence over the organisation and structure of their education. The goals in the curricula and syllabuses, and not least the grading criteria, should thus be common starting points for pupils and their teachers when planning and evaluating teaching.

Here the circle can be squared by recalling that the main purpose of the state with the compulsory school is purely to promote the pupils' development into knowledgeable and responsible people and members of society.

The Evaluation

Design and implementation

Design

The evaluation covers years 5 and 9 with emphasis on the latter. 16 of the compulsory school's subjects are covered in the evaluation. In addition, special tests for assessing the pupils' so-called problem-solving skills – searching for and critically examining information, drawing conclusions and generalising, as well as explaining and putting forward the reasons for their thinking and conclusions. In the evaluation, questionnaires, subject tests and longitudinal qualitative studies have been used. In total around 10,000 pupils and 1,900 teachers at 197 schools participated in the study. In year 9, a survey of parents was also carried out. The analyses on different subjects has been carried out by a group of researchers at universities and university colleges. The National Agency for Education is responsible for the joint questionnaires and instruments, planning, as well as analysis and final reporting of the material collected.

Given the background of the intensive reform of the 1990s, the evaluation has the purpose of providing a picture of the current situation in terms of goal attainment of the compulsory school in relation to the goals in the steering document, clarifying changes since the national evaluation of 1992, and also pointing out the need for measures at different levels of responsibility.

The evaluation is designed to correspond to these requirements. The starting point is the current curriculum and the subject syllabuses. Since these coincide with the content measured in the national evaluation in 1992, and also in certain cases in the more nationally oriented evaluations carried out in 1995 (UG-95) and 1998 (US-98), the early results serve as a reference point for clarifying changes over time. Not everything in the test can be reused due to the changes that have taken place in the curriculum and the subject syllabuses. The selection of tests and contents of the questionnaire is based on whether these are still appropriate, whether they can be reused, and whether they have also been assessed in terms of their reliability as a measuring instrument. In addition, the evaluation was made up in large parts of newly designed tasks and survey questions, as a result of the new goals in the curriculum and syllabuses, of changes in schools and also because of the enlarged scope of the evaluation.

The National Agency for Education commissioned 11 groups of researchers, comprising subject representatives, at universities and university colleges to

be responsible for the sample and design of supplementary test tasks, and also for the subject specific questionnaires which provide the basis for the 16 subject studies covered in the evaluation. In addition a special research group has been given the responsibility for studying pupils' skills in solving problems. Groups of researchers have been responsible for implementation and analysis of the subject tests, longitudinal qualitative studies and subject questionnaires within their respective areas. Using the above-mentioned starting points, the researchers have organised the studies in different ways based on the nature of the subject. The National Agency for Education has been responsible for supplementary measurements concerning general questionnaires to pupils and teachers, and also for those questions that were similar in the subject questionnaires. The National Agency for Education has been responsible for developing the questionnaire for head teachers, the school questionnaire, as well as the questionnaire to parents of participating pupils.

In constructing the questionnaire, the aim has been to provide a basis for a more detailed and enriched perspective of schooling and goal attainment. This has been possible as pupils, parents, teachers and head teachers have responded to similar question areas. This makes it possible to see inter-relationships between the responses of parents, teachers, pupils and the school management working with the same teaching groups and schools in the same question domains. It is also possible to analyse results from the same pupils' responses to questions on knowledge and questions concerning attitudes in a number of compulsory school subjects, and in this way examine the variation both within and between groups and classes, and monitor variations in the results of individual pupils in different subjects.

In a number of subject studies, in addition to questionnaires and tests, longitudinal qualitative studies were also used on a smaller sample of pupils to identify the more creative aspects of teaching and pupils' knowledge. The advantage of longitudinal quality studies is that pupils as reflecting agents are given greater focus.

Both the orientation and how the structure of the evaluation should be experienced have been taken into account in the design phase as this could be of use for those involved in schools when designing their own local follow-up and evaluation instruments.

Special focus in the study has been put on teachers, the teaching situation and the importance in terms of acquiring knowledge of the pupil's own perception of themselves. The study has also been adapted to provide a basis for determining the impact of factors such as gender, as well as the ethnic and socio-economic background of pupils' attitudes and learning.

In many parts NU-03 involves a development in relation to NU-92.

- In contrast to 1992 and 1995, the aim has been not just to describe the situation subject by subject, but to provide an overall picture of the situation and results attained on completion of compulsory schooling. In order to achieve this purpose, the study was planned to make it possible to explore as many links as possible between the subjects, participating groups and methods of collecting information. Technically this means that certain parts of the questionnaires to pupils and teachers were designed so that the same question areas and questions were put both to pupils and teachers in each subject.
- More methods than earlier have been used. One example of this is a variant of the portfolio method in the subjects of art and crafts in year 9, and also problem-solving tasks in groups within the framework for the evaluation of year 5.
- A major change compared with 1992 was the use of computers to collect information on a larger scale. Computers were exclusively used for the responses of teachers and head teachers. In the schools in the sample which had satisfactory equipment (half of the 120 schools), pupils responded to the questionnaires via computer. A review of knowledge was conducted concerning possible differences arising from data collection in relation to responses from paper-based questionnaires. There was nothing to indicate that the medium used for responding would influence the outcome in any significant way. Subsequent checks of i.a. non-response and methods of collection confirmed this.¹
- In 1992 the National Agency for Education carried out an on-site assessment of participating schools. This has now been replaced by collection of data on the school, a questionnaire to head teachers as well as new questions inserted into the questionnaires to teachers, pupils, and parents.
- The parents' questionnaire was posted to the parents of pupils by Statistics Sweden (SCB) as a distributor of the form. This means that it is possible to study the relationship between pupils' and parents' views, as well as parents' assessment of activities provided in their child's school.

¹ The procedures and experiences from Internet-based data collected will be described in greater detail in a future technical report.

- In order to reduce the burden on both pupils and teachers of providing information, appropriate efforts were made to input information which had been previously collected in 1992 in the national subject tests in Swedish, mathematics and English for the tests which were given in the spring of 2003.

Implementation

The statistical sample of schools, pupils and teachers has closely followed that of 1992. The same subjects and in general the same groups of researchers have taken part in both evaluations. The timetable for collecting and providing information to the schools was similarly organised. All participants are anonymous. However, the structure of the evaluation makes it possible to examine inter-relationships between different levels, e.g. pupils and their teachers, teachers and their head teachers.

The evaluation was carried out during the latter part of spring 2003 in year 9. 16 of the compulsory school subjects were evaluated, and special tests were carried out on pupils' problem-solving skills. In the evaluation, questionnaires, subject tests and longitudinal qualitative studies were used. In total 6,788 pupils, their parents and 1,688 teachers at 120 schools participated in the study.

A more limited evaluation was carried out on year 5 in 2003 in the same subject areas as 1992, namely Swedish, mathematics and English. This covered 3,455 pupils and 205 teachers. Largely the same or equivalent information was used as in 1992. This makes it possible both to determine trends and the current status of goal attainment in the three subjects. A sub-sample of pupils also carried out two types of group tasks of a problem-solving nature.

One of the tasks in Swedish in year 5 was also included in the Swedish test for year 9 in order to clarify changes in reading comprehension during the latter part of the compulsory school.

Below follows a compilation of the study instruments, number of respondents and the non-response factor.

Table 1.1 Instruments and non-response in year 5.

Instruments	Size of sample	Non-response %
Pupils' booklet	3,455	4.8
Teachers' booklet	205	10.2

The subjects of Swedish, English and mathematics were studied in year 5. The pupils' booklet consisted of questionnaires and tests made up of 11 parts. A sub-sample of pupils also carried out group tasks of a problem-solving nature.

Table 1.2 Instruments and non-response in year 9.

Instruments	Size of sample	Non-response %
General pupil questionnaire 1	6,788	10.2
General pupil questionnaire 2	6,788	10.2
General teacher questionnaire	1,688	17.4
Parents questionnaire	6,788	24.1
Head teacher questionnaire	120	0
School questionnaire	120	0

Questionnaires were sent out to pupils and teachers in 16 subjects for year 9; art, biology, English, physics, geography, home and consumer studies, history, physical education and health, mathematics, music, religion, civics, crafts, social studies, Swedish and also Swedish as a second language.

Subject tests were carried out in 13 subjects; biology, English, physics, chemistry, mathematics, music, Swedish and also six tests related to social study subjects.

The longitudinal qualitative studies were carried out in art, home and consumer studies, mathematics, music, crafts and problem-solving. National tests were carried out in Swedish, English and mathematics. In addition, overall register data was collected from SCB on pupils' final grade, education of parents, and education of head teachers.

Table 1.3 Sample size in the respective study groups in year 9.

Respondents	Number
Schools	120
Classes/teaching groups	288
Classes/teaching groups per school	1–4
Pupils	6,788
Teachers	1,688
Parents	6,788
Head teachers	120

The main results of the study

Foundation values

In the steering document for the compulsory school, the focus has traditionally been on its task of mediating knowledge, but in the most recent curricula for the compulsory school – Lgr 80, and in particular Lpo 94 – the foundation values had been increasingly emphasised as an important part of the task of the school, and that such a perspective should permeate all teaching. The fundamental values should not be viewed in a vacuum, but should be expressed in different ways and practised within the framework of teaching in the individual subjects.

Fundamental values as applied in school practice

NU-03 provides a general picture of a well-developed awareness and high allocation of priorities to fundamental values amongst parents, head teachers and teachers in year 9. As the pupils were asked how they viewed its application in their school, both generally and in different subjects, a more diversified picture emerges. This applies, for example, to gender equality: In physical education and health, and home and consumer studies, one out of every five pupils considers that the teacher does not treat boys and girls the same. Between one out of every three and four pupils, depending on the subject, consider that teachers take their views and proposals seriously – this appears to function best in religious studies, civics and crafts. One indicator of the impact of fundamental values is the extent to which systematic and substantial measures have been taken to counteract mobbing in the school. Here the results are more discouraging. Only one out of every four pupils state that the teacher or some other adult intervenes immediately if a pupil is mobbed, and an equally large proportion do not know if there is any group in the school which intervenes against mobbing should it occur. The head teachers in the selected schools generally provide an encouraging picture of how work on foundation values is operating in practice. However, one out of every ten head teachers states there are shortcomings in the school's work concerning the importance of respecting the equal value of all people, one out of every seven states shortcomings in pupils' learning to develop their standpoint on ethical issues about what is just and unjust, and one out of every five head teachers states there are shortcomings in the school's efforts to promote gender equality between girls and boys.

The personnel and pupils have a high awareness of the foundation values, but despite this the evaluation indicates evident shortcomings in the application of fundamental values to daily school activities. The results give reason to emphasise the guidelines in the curriculum to teachers to “show respect for the individual and that daily work should be based on a democratic approach”.

Pupils' awareness of fundamental values

Within the framework of the evaluation of the social study subjects in year 9, the material exists to form a picture of pupils' values, and possible changes in these. Pupils show by their responses a good knowledge of democratic values, and can use this as a frame of reference in developing their own standpoints. However, their standpoints now, as in 1992, often show an inability to argue for or clarify the reasons for their views.

In relation to 1992, there are some indications that actions for personal benefit and for the immediate group, is gaining a foothold amongst increasing numbers of pupils at the cost of solidarity with others. However, the main picture shows the same patterns and distribution of responses as in 1992. A larger proportion of girls compared with boys in their responses state their support for fundamental values. This is also evident from the "problem solving tests" given in year 5.² Undoubtedly a part of the differences between the responses of boys and girls in year 9 have evened out between 1992 and 2003, when girls' responses were very close to those of boys and vice versa, but still a larger proportion of girls than boys express tolerance and empathy. The vast majority of pupils consider that the gender equality goals are important; tolerance towards disadvantaged groups is significantly lower.

The evaluation shows in summary that there is a need for further attention to be devoted to how the compulsory school handles the guidelines in the curriculum that "... develop the pupils' sense of togetherness, solidarity and also to developing their sense of responsibility towards people outside the immediate group, ...". This applies particularly to boys.

² See in addition Skolverket (2004b), the section on Problemlösning.

Subjects

The studies carried out on goal fulfilment and pupils' attitudes to different subjects in the compulsory school, and where appropriate changes in results between 1992 and 2003, are summarised in this section in terms of "profiles" for the respective subjects.

As mentioned earlier, it is important to point out that the knowledge assessments carried out only refer to selected sections of the goals in the subjects, and do not reflect goal attainment in the subject as a whole. On the other hand, it should not be of any importance which goals are focused on, as they are all of equal importance. Quality is expected to be equally good irrespective of where one looks.

In a number of subjects the syllabuses have changed significantly since 1992, and this has an effect on the scope for making comparisons over time in a large number of subjects. In certain subjects which in the public debate are regarded as "crucial" – Swedish, mathematics, English, science and social studies – it is possible to observe and more specifically comment on changes in results during the last decade. "Clarity" in these subjects is due to the fact that the knowledge measurements are responses from the measurements carried out in 1992 (and repeated in autumn 1995 and 1998). Comparability over time is possible, with respect to the sections of the syllabus goals that have been studied. The National Agency for Education, however, has not systematically assessed the extent to which changes in the goal documents since 1992, e.g. greater emphasis on competences other than those measured in NU-03, have had an impact on the measuring instruments used.

In other subjects, e.g. art, crafts and home and consumer studies, the researchers have to varying degrees changed their measuring instruments in relation to evident changes in the curricula and syllabuses between 1992 and 2003. In crafts and in physical education and health, no systematic measure of knowledge was carried out in NU-03, which is reasonable given how the applicable syllabuses for these subjects are formulated. In these subjects, researchers have instead of measuring knowledge asked the pupils to give their understanding of what they have learnt.

Art

Direct comparisons over time are difficult due to changes in measuring instruments, but the general impression is that the status quo is almost the same as compared with 1992. Where it concerns pupils' assessment of works of art, the ability to determine authenticity of artistic expression is greater than e.g. the ability to place a work in its aesthetics/artistic context. As regards graphics in

the media, there is, amongst pupils, a relatively high degree of awareness of visual communication, namely the relationship between the intentions of the sender and the reactions of the receiver. Goal attainment is lower in terms of the “building blocks” of art, how a picture is built up and communicated by means of perspective and colour. Many pupils consider the subject to be fun and enjoyable, but less useful. Since 1992 the subject has largely been typified by individual work and individual projects. Gender differences are large; girls are more motivated than boys and get higher grades. Similar to 1992, teaching was still dominated by producing pictures by hand, and the subject appears not to have developed in accordance with the increased emphasis on visual communication in the syllabuses. Pupils’ and teachers’ interests in modern technology e.g. digital processing of graphics which is related to developments in media and society, stand in sharp contrast to the lack of adequate equipment and insufficient competence on the part of teachers in this area.

English

The picture of the results in English can be compared with 1992 and are in general terms encouraging. The results in English continue to be good or very good, and the degree of goal attainment is high.³ Pupils’ listening comprehension and their ability to write English continues to remain high, whilst reading comprehension of longer texts in English is somewhat worse than in 1992. This applies in both years 5 and 9. In year 5 pupils achieve better results than in 1992 in free composition, and in year 9 most pupils can write freely and functionally. The pupils consider that English is one of the most important, useful and most interesting subjects in the compulsory school, but four out of ten pupils, nevertheless, consider that English is difficult. The formal competence of teachers has declined significantly since 1992. The fact that pupils’ results have not changed negatively may be related to the fact that over half the pupils consider they have learned just as much or more outside school as in school. English is one of the subjects where there is most learning outside the school. In addition, English is also one of the subjects where gender differences in performance and grades is minimal.

³ The fact that Swedish pupils’ knowledge and performance in English is good has also been recently confirmed in the international study *Assessment of English*, see the National Agency for Education (2004 a).

Home and consumer studies

The results in home and consumer studies are only partly comparable with those of 1992. Since 1992 the subject has put greater emphasis on consumer issues, and in this respect goal attainment based on statements from pupils is assessed as good; three-quarters of the pupils consider that they have learned to become more aware and critical in their choices and standpoints. This picture is also strengthened by the results from the “problem-solving test” in year 5, where a clear improvement can be seen between 1998 and 2003 in pupils’ ability to critically examine and evaluate statements and relationships in a consumer context.⁴ Also the ability of pupils to work together in groups is trained in the subject and this is assessed as being very good. On the other hand, the subject of home and consumer studies continues to show shortcomings in terms of the goal of gender equality, not only in terms of the distribution of work in the group – this hasn’t changed since 1992 – but also the priority given by teachers to the gender equality perspective. Gender differences in both performance and grades are very great, to the advantage of girls. The subject is considered by many pupils and parents to be relatively important and useful – compared with science studies – art, music and crafts. One difficulty, however, is the lack of pupil influence, which can be connected to the continuing use of traditional forms of teaching, instruction followed by work in a group. The lack of pupil influence also stands in sharp contrast to pupils’ explicit interest in current issues concerning health, food and consumption.

Physical education and health

Physical education and health has focused much more specifically on health issues since 1992.⁵ The results are thus hardly comparable over time. The general picture, however, is a large proportion of pupils regard physical education and health as fun – the most enjoyable subject – useful and interesting. Of the subjects which were evaluated, physical education and health is the most obviously “boyish” subject in the compulsory school. There are more boys than girls attaining the highest grades, and they enjoy it and consider that they are involved and able to influence content. But there is an increasing group of boys (compared with earlier studies) who appear to consider that the subject is

⁴ Choice between ECOLOGICALLY cultivated and “ordinary” bananas.

⁵ As a result of which the subject’s name was changed from “sports” to “physical education and health” in connection with the introduction of Lpo 94.

not something for them. The subject has a clear focus on physical activities and there is little discussion and reflection over e.g. health and life style. The influence of sporting associations still appears to be great. In general terms, it can be stated that the focus on physical activity which typifies the subject, and which is characterised by positive and active participation, is an important basis for obtaining a passing grade in the subject. "The only thing you have to do is to wear the right clothes and then you get a pass." It is worth noting that pupils may obtain higher grades even though they may not be able to find their way around in a wood with the help of a map and compass or that they cannot swim. In addition, it is the pupils who are active in sports contexts in their recreation, which itself is linked to socio-economic background, who attain the highest grades in the subject. Learning outside school is as great, and whether conditions exist for equivalent grading in the subject can be discussed.

Mathematics

Test tasks in mathematics in NU-03 are identical with those used in earlier national evaluations, which is why comparison of results over time is possible. Compared with 1992, a deterioration can be observed, most clearly in year 5, but also overall for boys and girls. The national test results of pupils in year 9 should be interpreted in the light of the large non-response, but the results do indicate a deterioration since 1992: the average value on identical tests is approximately one point lower, the proportion of weak performing pupils has increased whilst there has been a decrease in the proportion of high performing pupils. Via data from the national tests in mathematics in year 9 for years 2001–2003, between 80 and 90 percent of the pupils were assessed as attaining each and every one of the goals to attain. About 90 percent of pupils in year 9 are considered to manage the goals of understanding natural numbers and algebra, and about 80 percent the goals in calculating, geometry and statistics.⁶ Via teachers' estimates of goal attainment in year 5, about 70 percent of the pupils were assessed as having fulfilled all the goals to attain, and at least 80 percent have attained at least one of the goals. The forthcoming results from the international studies, PISA and TIMSS, both carried out in spring of 2003, will supplement the picture of changes in knowledge over time. The majority of pupils regard mathematics as an important and useful subject which they think they will make use of in the future. At the same time the

⁶ How large a proportion of pupils who according to these figures successfully managed to attain all the goals cannot be stated.

subject is experienced as being difficult and quite uninteresting as lessons proceed slowly. The proportion of pupils who think that they would like to learn more mathematics in school has increased since 1992. Despite this, the motivation problem and the increasing occurrence of individual work is disturbing, an increasing proportion of pupils are not sufficiently motivated to do their best and state that they easily give up when confronted by difficult tasks. Increasing emphasis in the curriculum and syllabus on communication does not appear to have had a widespread impact on teaching. The group task in the evaluation shows that group work in mathematics was just as unusual in 2003 as it was in 1992. Instead we get a picture of increasingly individualised teaching – compared with both 1992 and 1995 – where pupils work in isolation from the teacher and their class colleagues.

Music

The results in music are only partly comparable with 1992. As a result of the Syllabus 2000, the subject of music was given a very different emphasis by the change in focus from knowledge about music to actually playing music. The knowledge test which was included in the evaluation⁷ is identical to a corresponding test from 1992, and shows a deterioration in pupils' knowledge of music, which is entirely in line with the shift in focus in the syllabus for the subject. Pupils' interest in music is very great according to the studies of both 1992 and 2003. At the same time the majority of pupils regard the subject of music as less useful. According to the pupils themselves, the subject of music functions as a "breathing space where one can relax and be oneself". At the same time there are indications that the subject is perceived as non-modern and that there are shortcomings in its breadth "the music I like doesn't come into the lessons". There appears to be a clear difference between much of the music enjoyed by youngsters and the music taught in the school. Gender differences in final grades, in favour of girls, are large and have increased since 1998, when the current grading system was introduced. The evaluation, moreover, shows that young people who practise music very much in their leisure time and who come from academic and culturally aware homes, tend to get higher grades. Learning outside school is enormous and equivalence in grading in the subject can as in physical education and health be questioned.

⁷ The so-called "Columbus test" intended to measure knowledge of music from different cultures and eras.

The science oriented subjects – physics, chemistry and biology

Evaluation of the science oriented subject has focused on the pupils' knowledge of natural science concepts and models, and thus refers only to one of the three knowledge aspects emphasised in the current syllabuses. A more comprehensive picture of Swedish pupils' expertise in natural sciences will be obtained through a comparative analysis between NU-03, and the international studies PISA 2003 and TIMSS 2003.

NU-03 allows direct comparisons with the corresponding study in 1992. This comparison shows no changes in the results in terms of pupils' understanding of concepts in biology, whilst in physics there is a weak downturn, and in chemistry the deterioration in results is evident. The results must be regarded as unsatisfactory. From the pupils' perspective, biology differs very greatly from physics and chemistry – the subject is experienced as significantly more important and interesting than physics and chemistry, it is not regarded as being equally difficult, and a larger proportion of pupils experience the quality of teaching in biology as higher. Gender differences in performance and grades in physics and chemistry are minor, which is a clear change compared with 1992, whilst girls are more attracted by, and perform better in biology. Chemistry and physics are experienced by a relatively large proportion of pupils as not being of great use, difficult and uninteresting subjects. The subject of chemistry remains a problem subject both as regards pupils' understanding of concepts, as well as their attitudes towards it.

Social studies – geography, history, religious studies, civics

The evaluation shows that the majority of pupils have unequal and fragmentary knowledge in the social studies area. In addition, there is wide variation, from pupils who demonstrate a high degree of knowledge to pupils who either do not answer, or provide answers revealing their lack of knowledge. The largest group is “the intermediate group”, whose responses indicate a more or less fragmentary picture of knowledge. This was indicated by a lack of understanding of facts and terms, as well as difficulties in showing causes and interrelationships. This is especially true of knowledge “close to school”, namely knowledge which by tradition is obtained from teaching in school.

In *geography* the majority of pupils (about 85 %) attain the goals of the syllabus with respect to basic knowledge such as names of places and to a large extent also the interpretation of tables and diagrams. A large majority of pupils live up to the goals of the curriculum and the syllabus in terms of adopting a democratic perspective and environmental thinking to identify and uphold different action alternatives for sustainable development. An overall shortcom-

ing in the subject is that many of the pupils develop a standpoint and demonstrate their knowledge, without being able to explain or provide the reasons in their answers for the phenomenon they are considering.

Results in *history* reveal a wide range. When it comes to identifying dates of historical events important from the perspective of our own age, a large number of pupils experienced difficulties (25–75 % depending on the question). As regards awareness of history, pupils' responses cover a wide range, from fragmentary and disconnected descriptions of the majority of pupils, to a small group of pupils with good and highly developed awareness of history.

In *religious* studies the pupils show a good ability to reflect over and formulate their thinking on important questions concerning life, as well as the capacity to reason ethnically and see the consequences of different standpoints. In relation to pupils' responses in 1992, however, a shift can be observed towards a somewhat greater number of ethical standpoints that reflect personal benefits for the individual. Pupils' responses show substantial shortcomings in knowledge about religion and outlooks on life based on their own experience of the world.

In *civics* the pupils show in overall terms stronger involvement in society than in 1992, but knowledge about the fundamental conditions of the Swedish political system remains at the same level as in 1992. Pupils' knowledge of the democratic system is not considered to be satisfactory, given the amount of instruction hours allocated to these issues. The majority of pupils have good knowledge on some of the functions of the economy, but one third have a lack of knowledge on important terms used in economics such as interest, inflation and taxes. When it comes to global issues, goal attainment is good. Many pupils expressed an interest in global issues and consider that they have far too little teaching about this.

The pupils' picture of the teaching shows that social study subjects in relation to other subjects are in the forefront in terms of gaining pupils' interest and also their ability to influence content and working forms. As a whole the pupils are somewhat more positive to social studies than pupils in 1992. As in 1992, teachers enjoy their work (96 % state that they feel good or very good about it). In contrast to 1992, when the textbook was instrumental in determining teaching, teachers in 2003 state that it is their own interest and their own ideas which influence the orientation of teaching in social study subjects.

The organisation of social study subjects has changed since 1992 so that an overall interdisciplinary approach in social studies has become more common. This was shown in 1992 when 12 percent of the pupils obtained an overall

grade in social studies, whilst the figure in 2003 was 32 percent. Pupils' and teachers' responses showed that the organisation of social studies influences their way of working. In interdisciplinary teaching in social studies, the pupils work in longer sessions, and have more variation in how they work and can have greater influence. A larger proportion of pupils consider that they get opportunities to choose contents themselves, work in groups and have discussions. However, in the evaluation material, there are no observable differences between pupils' knowledge in relation to how teaching in social studies is organised.

Crafts

The evaluation of the subject of crafts takes its starting point in the "goals to strive for" set out in the syllabus. Work in the crafts process, from initial idea to assessment, is clearly linked to various forms of knowledge and pupil influence described in the goals to strive towards as set out in Lpo 94. Pupils' and teachers' descriptions of the activities show that pupil influence and personal responsibility are areas where goal attainment in the subject has been high. The subject of crafts occupies a special position amongst school subjects in terms of pupils' opportunities to influence content and ways of working. In NU-03, it can be stated that pupils' capacity to take initiatives and exercise personal responsibility was greater than in 1992, but even at that time such results were clearly evident. Also the goals that can be related to a knowledge of crafts are largely attained. Goal attainment is according to the pupils themselves lower in terms of their ability to view the activity from different perspectives (gender equality, finance, environmental, cultural and ethical values). Teachers also consider this has been less focused on. As regards influence and taking personal responsibility, there are no gender differences. The dominant method of working in crafts is that the pupils work on producing their own craft designs, individually, but cooperation and pupils' helping each other frequently occurs. The awareness of pupils concerning knowledge in the subject of crafts appears to be limited to the classroom. The former division of the subject into the two types of crafts is still widespread.

Swedish

Swedish, considered by most pupils as one of the most important and useful subjects in the compulsory school, can be regarded as a multi-purpose subject in that it functions as a learning instrument in most other subjects: The goals deal with both reading skills and communicative skills – expressing oneself in

writing and orally.⁸ The results for reading and writing skills are comparable over time. In NU-03 the reading skills of the pupils were studied in the first instance. In this respect, the results show a deterioration since 1992, this applies both to year 5 and year 9. According to teachers' assessments, in 2003 90 percent of the pupils during their fifth year at school attained the goal set up for reading. 8 percent were assessed as "weak in reading", which represents an increase of two percentage points since 1995. Also for year 9, the results show a larger proportion of pupils with lower reading results in 2003 compared with 1992 and 1995. This applies particularly to longer texts. Gender differences are not as great in year 5, but are significantly greater in year 9; of the pupils in the decile with the lowest number of points on the test, the majority (75 percent) was made up of boys. Also both pupils who came as immigrants and pupils with a mother tongue other than Swedish are overrepresented in this group. As regards pupils' ability to express themselves in writing and orally, there are no indications of any deterioration since 1992. A small sample of essays⁹ from years 1992 and 2003, where quality has been compared on the basis of the assessment criteria applicable to the national subject tests, shows no differences in results between the different years.¹⁰ At the same time, the formal aspects of writing in the subject of Swedish, such as spelling, grammar and vocabulary, were universally rated by teachers in 2003 as of lower importance compared with teachers in 1992. As regards the ability to put forward views orally, it is not possible to make any direct comparisons with the situation earlier, but both pupils' as well as the teachers' assessments indicate improvement has taken place. According to assessments made by pupils and teachers, the focus on the individual in the subject of Swedish has increased; group work and discussions with class colleagues in Swedish have decreased since 1992.

Swedish as a second language was not covered in the evaluation of 1992. As the group of pupils and teachers who took part in NU-03 in Swedish as a second language is small and there are uncertainties concerning its representativeness, we refrain in this short summary from presenting or commenting on the results in any detail. There are indications, however, from the material that there is cause for concern.

⁸ The Norwegian researcher into reading, Evensen, Smidt (1991) also argues that reading and writing skills (communicative skills) are two different kinds of knowledge or skills ("subjects"), which differ both in terms of subject traditions and their views of knowledge from didactic perspectives.

⁹ 120 essays.

¹⁰ The study indicates, however, that the pupils write *longer* compositions.

Problem-solving skills

The pupils' so-called problem-solving skills – the ability to search for and critically examine information, draw conclusions and generalise, as well as explain and argue for their thinking and their conclusions – is not a “subject” per se. Studies of these skills are, however, essential, since the curriculum of 2000 states that the development of these skills among pupils is a goal of all subjects in the compulsory school. Studies of this carried out within the framework of NU-03 are empirically limited, but the results clearly indicate movement towards improvement in these skills compared with 1992 (year 9) and 1998 (year 5). There has been a significant increase since 1992 in the proportion of pupils in year 9 who both individually and in groups critically examine facts spontaneously, report on how they have carried out the study with verifiable documentation, comment on their results in the form of written reflection and provide explanations for their results. Also in year 5, the results indicate that pupils' skills in critical thinking and making conscious choices as consumers has improved between 1992 and 2003, and between 1998 and 2003. There are, however, differences between girls and boys, which have been studied in year 5; more boys than girls in this year/age group tend according to the study to put themselves in the centre and in the first instance think about their own health and/or financial situation.

Competence of teachers and quality of teaching

The national follow-up statistics provide information showing a decrease in both the proportion of staff (converted to full-time annual equivalents) with a higher educational qualification in pedagogy as well as the teacher-pupil ratio during the first half of the 1990s. Teacher-pupil ratios increased again towards the end of the 1990s, but are not yet up to the same levels as at the beginning of the 1990s. The proportion of teachers (converted to full-time positions) with a higher education qualification in pedagogy has decreased, mainly between the years 1996 and 2000. During the first half of the 1990s, the proportion was high, about 94 percent, and in the school year 2002/03, the proportion was about 80 percent. Material from the subject evaluations has provided uneven opportunities to obtain a picture of the qualifications of teachers as the number of participating teachers varies between the subjects. The National Agency for Education commissioned Statistics Sweden to map teachers' subject and pedagogical education in school year 2002/03. Of the teachers in years 7–9, about 60 to 70 percent depending on the subject, have undergone both teacher training and education in the subject.¹¹

Large proportions of both pupils and teachers experience a sense of well-being in school, but this is higher for teachers than pupils. The pupils provide an overwhelmingly bright picture of how they experienced teachers and teaching. In all subjects, 79–90 percent of the pupils state that the teacher teaches well. Large proportions, 67–80 percent, believe that they receive the help they need, and also that teachers have time when they are wondering about something in the subject, 73 to 86 percent. There are small differences between the subjects, but the subjects of civics, biology, Swedish, interdisciplinary social study teaching and geography are the subjects where the highest proportion of pupils consider that the teacher lives up to the statements above. The proportion is lowest for home and consumer studies, art, music, physics, chemistry and mathematics. The proportion of pupils who consider that their teachers have the ability to involve them and arouse their interest in the subject varies between 63 percent (Home and consumer studies) and 80 percent (civics). Large proportions of pupils consider that teachers believe in their ability to teach, between 73 and 86 percent, the former in home and consumer studies and the latter in biology and Swedish.

¹¹ This refers to those subjects covered in the evaluation.

Work forms and pupil influence

NU-03 does not contain any questions which provide a simple summary of changes in how pupils experience their general influence over time. Since 1992 it appears that pupils consider that they have obtained greater influence over tests and homework, and also to some extent over the contents and working forms in lessons. In general terms, a larger proportion of boys both in 1992 and 2003 state that they have a lot or quite a lot of influence. There are significant differences between the subjects. Crafts is the subject where pupils experience they have most influence over content and working methods.

The traditional way of teaching, where the teacher conducts the lesson, talks and puts questions while pupils listen and answer, appears to have decreased during the last decade. In 1992 around 45 percent of pupils stated that “the teacher talks and puts questions, and individual pupils answer” several times a day – in 2003 this proportion had decreased to slightly less than 30 percent. The figures show that the decrease has mainly taken place since 1995. The traditional way of working is most common in the theoretically oriented subjects with the exception of mathematics. But it is least common in crafts, physical education and health, and also arts, where between 3 and 6 percent of the pupils state that it occurs during each lesson or in most lessons. Joint discussions between teachers and pupils also appear to be more common in the theoretically oriented subjects. A distinguishing feature of mathematics is that there are few teacher-led sessions and few discussions.

At the same time as this traditional teaching approach has decreased during the last decade, there has been an increase in pupils working individually. In 1992 26 percent stated this was the case, whilst in 2003 50 percent of the pupils stated that they worked on their own several times a day. This increase appears to have occurred mainly after 1995. The differences between the subjects are large; crafts, art and mathematics are the subjects where the largest proportion of pupils state that they work on their own, whilst the lowest proportion is in home and consumer studies, physical education and health, and also music. According to the pupils, group work is most common in home and consumer studies, followed by physical education and health, and chemistry (laboratory work) where pupils state that they work in groups in every or most lessons.

Assessment and grades

In a goal and result steered school, it is essential that all involved are familiar with the goals of the subject and the grading criteria on which performance in the subject is assessed. Awareness of goals and grading criteria appears to have increased amongst teachers and pupils. However, this is far from being the general case. A large proportion of pupils consider they have not been informed about the goals of the teaching and what is required for them to attain different grades. Also the head teachers' assessment indicates that the situation is different, both within and between schools. This was thought to be particularly problematic in the practical and aesthetically oriented subjects. Art, Home and consumer studies, music and crafts are the subjects where pupils have least awareness of the requirements for different grades.

Pupils give a high rating to their own performance. At the same time there does not appear to be sufficient feedback on results in a number of subjects. 30 percent of the pupils in the subjects of art, home and consumer studies, music and crafts consider that teachers never speak to them about how they are progressing in the subject. The corresponding proportions for other subjects vary between 11 and 20 percent. Without a dialogue on pupil performance, there is a risk that pupils have an incorrect view of how they have developed and how they can make further progress in the subject.

The majority of pupils in all subjects, between 72 and 85 percent, consider that the grades they receive correspond fairly or very well and are a fair reflection of their attainment. In the subjects of home and consumer studies, as well as physical education and health, approximately one out of every four pupils says that teachers do not give them a fair grade. A high proportion of pupils who consider they have received fair grades state they have received information contained in the syllabus about what they should learn and that they were familiar with the grading criteria for the subject.

Introduction

In this concluding section, the National Agency for Education provides a summary review of the results.

The material is based on evaluations carried out in years 5 and 9 in spring 2003. 16 subjects in the compulsory school were evaluated, and special tests were used to assess pupils' problem-solving skills. The evaluation also used questionnaires to pupils, teachers, parents and head teachers and also (for pupils) subject tests and longitudinal qualitative studies. A total of 10,000 pupils and 1,900 teachers from 197 schools participated in the evaluation. The major part of the evaluation was carried out at the end of year 9, when pupils traditionally focus on the national tests and final grades, and this may have influenced their motivation. The choice of having the main study at the end of year 9 was logical since the goals and timetable for the compulsory school subjects, as laid down in Lpo 94, cover the whole of compulsory schooling.

In line with the existing division of responsibility, this evaluation does not make any claims to be an evaluation of the situation and results in specific schools, irrespective of whether they have taken part in NU-03 or not, but rather aims at providing a picture of compulsory schooling in Sweden and in particular of year 9, the final year of the compulsory school.

The main purpose of the national evaluation is to provide a basis for national decisions on the compulsory school, by

- providing an overall picture of goal attainment in the compulsory school, by subject and from an overall perspective,
- showing changes since the national evaluation of 1992,
- identifying the need for measures.

The results which the discussion takes as its starting point can be summarised as follows:

Goal attainment and positive results can be observed in terms of the following:

- Pupils, parents and the personnel of the school show a high degree of awareness and high allocation of priority to fundamental values.
- Pupils' knowledge in English is very high.
- Pupils' communicative skills in Swedish and English remain high and have in certain respects improved. In Swedish, the results indicate improvement in oral communication, and in English in both oral and written communication.
- Pupils' skills in being aware and critical when making choices, critically examining and assessing statements and conditions, is good. Consumer awareness can be regarded as high.
- Pupils show in practical situations (home and consumer studies) and in group tasks (the problem-solving tests) good or very good skills in co-operation.
- Pupils' involvement and interest in questions concerning both society in Sweden and outside is high and has increased since 1992.
- Knowledge of the goals and grading criteria appears to have increased amongst pupils and teachers.
- The practical and aesthetically oriented subjects are for many pupils both interesting and a source of enjoyment. A large proportion of pupils would also like to spend more hours on these subjects.
- The subjects of physical education and health, and home and consumer studies are valued relatively highly by both pupils and parents.
- A number of theoretically oriented subjects are considered to be important: over 90 percent of the pupils consider it important to have a good knowledge of English, Swedish, mathematics and civics. Knowledge in these subject is also considered to be important for further studies and work.

Shortcomings in goal attainment and less satisfactory results can be observed in the following:

- Views of pupils in the evaluation indicate shortcomings in the application of the fundamental values to daily activities in school. In particular, concerning efforts to counteract mobbing and promote gender equality, there appears to be much to do before attainment concerning the goals of the fundamental values can be regarded as satisfactory.
- Further attention needs to be devoted to how the school handles the guidelines in the curriculum "... to develop the pupils' sense of togetherness, solidarity and responsibility towards people outside the immediate group". This particularly applies to boys.
- Pupils' reading skills in Swedish have deteriorated. This is especially true of boys. Some deterioration in reading comprehension in English can also be observed.
- Pupils' knowledge of mathematics and chemistry has deteriorated. Pupils consider both these subjects difficult. Chemistry remains a problem subject with shortcomings in both pupils' attitudes as well as goal attainment in understanding concepts.
- Pupils' knowledge in social studies is in many cases fragmentary and insufficient. Given that these subjects have received an increased number of hours in the most recent timetable and that the Riksdagen has also decided that history will be a core subject in the upper secondary school, the results here must be regarded as unsatisfactory.
- Changes in or more detailed goal descriptions have had insufficient impact in a number of the practical and aesthetically oriented subjects (gender equality in home and consumer studies; communication activities in art; health aspects in physical education and health; reflecting on work processes and what they produce in crafts).
- The major gender differences in results, attitudes and motivation need to be given greater attention.
- The problems of assessing and awarding grades in the practical and aesthetically oriented subjects are large, and equivalence in this respect is unsatisfactory. A significant proportion of pupils consider they have not been informed about the goals of the teaching and what the requirements are for different grades.

- Individual work by pupils has increased substantially in both mathematics and Swedish. Work in art and crafts is still largely made up of individual projects for the pupils.
- Of teachers in years 7–9, only between 60 and 70 percent, depending on the subject have undergone teacher training and education in the subject they are teaching.

The obstacles, dilemmas and problems concerning goal attainment in the compulsory school as outlined below, should be viewed in the context of the 1990s when the compulsory school was undergoing an unusually intensive period of reform. The compulsory school pupils covered in the study have attended schools where major savings have been carried out over the period 1992–1996.

The picture of the compulsory school at the beginning of the 2000s formed as a result of this study and other studies carried out by the National Agency for Education can be likened to two sides of a coin, a bright top side and a darker bottom side.

The results indicate a number of strengths and positive patterns, which consolidate and in certain respects have become even stronger since the beginning of the 1990s. This relates to improved skills on the part of pupils to solve problems together, more pupil oriented ways of working in certain subjects, and that pupils generally enjoy school and increasingly consider that they are able to exercise influence over their own work. In overall terms, teachers enjoy their work and show a high awareness of the foundation values. The picture of a school which puts great emphasis on the personal and social development of the pupils is supported by the attitude surveys carried out by the National Agency for Education since 1994, and in the national picture obtained from inspection of the schools.

The other side of the coin is that the knowledge Swedish pupils have in certain subjects has not improved, and in some specific sub-areas there has been a deterioration since 1992, and that motivation and involvement in school work, especially amongst boys, is low, and that the stress experienced by many pupils, especially girls remains high. In many ways the results indicate that the choices and attitudes of young people to studies are rooted in a complex context outside school. This in its turn means that the socio-cultural and economic preconditions in the home and leisure environments continue to have a major impact on success at school. Pupils receiving extensive support from

home are encouraged to take a long-term view of the school and focus their studies on knowledge which is more theoretically demanding and requires greater effort.

Efforts to introduce process goals and foundation value goals has had an impact

In general terms, the National Agency for Education considers that the greater emphasis on “processes” for attaining goals and foundation values as set out in the goal documents has been adopted by municipalities and schools, and these are goals which teachers put great emphasis on in everyday work – this applies particularly to the subjects of crafts, home and consumer studies, Swedish, English and interdisciplinary teaching in social studies. This result is an important element in what is described above as the “bright side of the coin”.

Closer examination of the results from different subject studies reveals that pupils’ acquisition of knowledge through more traditional school tasks (such as certain tasks in chemistry and mathematics, issues regarding the democratic process in civics, or the use of colour and perspective in art) is lower than the knowledge they have in areas which are closer to the everyday world where young people – and also the majority of adults – obtain much of their knowledge (global issues in geography and civics, interpretation of graphics used in the media in the subject of art, or consumer issues in home and consumer studies). In geography, a large group of pupils show in their responses that they measure up to the goals of the curriculum and the syllabuses in being able to apply democratic and environmental perspectives to different action alternatives for sustainable development. But in terms of their responses, a large proportion of pupils adopt standpoints on grounds which have no solid foundation in knowledge.

At the same time NU-03 shows that the process knowledge of pupils in year 9, for instance being able to cooperate and look for information, is good and has developed positively since the corresponding study in 1992. Given this background, the National Agency for Education wishes to put the question on whether additional efforts on process and foundation value goals takes place at the cost of teachers focusing on content. This can pose problems for teachers in designing clear and concrete criteria for assessing and awarding grades. Open, more process oriented goals can lead to unclear requirements resulting in a trivialisation of teaching content. In terms of the evaluation, shortcomings are in many instances related to the ability to reflect over concrete *contents*, irrespective of whether this is in practical work such as crafts, or more theoretical knowledge as in social studies.

In this context, an international perspective could well be appropriate. The OECD in its annual *Education Policy Analysis* (EPA) from year 2002¹² has dealt with the question of what human competences can be regarded as essential in order to promote not only economic growth, but also personal and social well-being. In an economic context these are usually summarised under the term “human capital”. Countless efforts have been made to “measure” human capital in different OECD countries, where the focus has principally been on what can be easily measured in terms of reading skills and mathematical proficiency. However, in different studies these competences have turned out to be weakly related not only to a country’s economic growth, but also to an individual’s salary and well-being.¹³ OECD has thus proposed an expanded definition of the traditional economic concept of human capital to also cover competences such as critical thinking, the ability to cooperate, independence and problem-solving skills – and these components should be given greater attention when planning educational policy. In some countries such as Japan, Singapore and France, initiatives have also been taken towards reviewing national curricula and taking educational policy initiatives which recognise the importance of and promote the development of competences other than just “basic knowledge”.

The results observed in NU-03, with deteriorations or insufficient goal attainment in some basic domains of knowledge such as reading comprehension, mathematics, chemistry and social studies, need to be viewed in terms of the reasons which the OECD puts forward on the importance of broadening the concept of competence. This “basic knowledge” is obviously of crucial importance, but there are also reasons to note the good results and in some cases improvements achieved by Swedish compulsory school pupils in written and oral communication, problem-solving skills, critical thinking and the ability to cooperate – or as the OECD states, the need to apply a broader definition of the concept of human capital.

The question of process goals and knowledge goals should be regarded as a challenge for the compulsory school and not as an obstacle. The challenge is made up of two stages: how can the school mediate values which encourage good acquisition of knowledge? – and how can a school provide knowledge which lays a good foundation for values that have been well thought through? Ultimately the challenge involves resolving the dual role of the school: to contribute to creating competent, creative citizens for further education and the

¹² OECD, (2002)

¹³ See e.g. Bowles, G. & O. (2001), OECD, (2000)

labour market, and to develop the ethical and moral standards of young people.

New goals do not have an impact on teaching in the practical and aesthetically oriented subjects

The syllabuses of 2000 lay down additional knowledge goals which aim at incorporating the changes that have taken place in the surrounding world such as new technology, changes in social patterns and living conditions etc. Aspects such as gender equality, drugs, body culture and consumption, manipulation of digital graphics, modern music genres etc are all examples of this. The results of the evaluation indicate that such elements in teaching in the practical and aesthetically oriented subjects, namely art, home and consumer studies, physical education and health, music and crafts are given lower priority. The results of the evaluation thus provide reasons for discussing the practical and aesthetically oriented subjects' capacity to identify and impart knowledge to pupils in line with the most recent syllabuses and with overall developments in society. If we look at how these subjects have been incorporated in teaching, the question must be put as to whether they have kept up with the times.

This evaluation indicates that a deeper discussion is needed on how the national goals in the steering documents for the practical and aesthetically oriented subjects can be transformed into concrete teaching.

An excessive number of goals in the compulsory school

The evaluation shows that in a number of subjects such as social studies, art, home and consumer studies, music and also physical education and health, that goals from the earlier syllabuses remain side by side with the new goals. The art pedagogue and researcher Gunnar Åsén argues in an article on the teaching of art,¹⁴ that over time it is possible to see that a more traditional way of regarding a subject does not disappear, but continues to exert its influence, in the form of traditions which are embodied and mediated by certain groups of teachers. This may well mean that a certain subject – despite changes in curricula and syllabuses – is being continuously *broadened* and this may result in excessive material and selection problems, and also lead to a struggle between representatives of the subject with background and roots in different traditions. This is yet another dilemma for pupils, teachers and the school management who either have to choose or abstain from goals amongst a widening col-

¹⁴ Åsén, G. (1998)

lection of goals. There is in-built opposition in the system in the sense that these syllabuses and goals to attain in the grading criteria can be regarded as a checklist of goals to assess, at the same time as others put these goals into a broader context.

The dilemma was accentuated by the fact that changes in the steering documents require that each pupil should attain *all* the goals to be attained in the subject by the end of year 5 and year 9. The evaluation in some of the subjects indicates trends that “difficult” goals are de-emphasised in local interpretations of national goals. Different views of what the subject should be compete with each other and with the state task. For instance, it can be stated that the communicative goals in the subject of art have had a weak impact as the tradition of creating pictures still survives. In physical education and health, it is clear that in some quarters it is sufficient for the pupil to merely change clothes to get a passing grade. In music there are schools that disregard the national goals and instead focus on goals which are less demanding.

An all pervading characteristic is that subject teachers, especially in physical education and health, music, art and crafts, and also in the social and science subjects, consider that *more hours* are needed if all the goals of the syllabus are to be attained. This can only be resolved in two ways – either by reducing hours in some other subject or extending the school day and/or school year.

Possibly the solution lies in how the task defined in the steering documents, in terms of goals to strive towards and goals to attain, is understood. From the steering perspective, it is important that these, in terms of their scope and content, are regarded as feasible and reasonable by teachers and pupils. One possible route – without reducing the level of ambition – would be to decrease the number of main goals in the subject, and this together with more detailed specifications could enable greater consistency in interpretation and thus in teaching orientation.

If the steering documents gave pupils and teachers a clearer basis for interpretation, this in its turn would enable the whole of the compulsory school to be organised so that pupils instead of trying to obtain a number of “separate goals in separate subjects” would experience greater coherence and contextual relevance. Taking such an overall view is fundamental for the pupils’ motivation and their understanding and desire to learn.

Pupils assess school subjects differently

A fundamental goal for the work of the compulsory school is that all pupils should feel at home in, and be familiar with the purpose of all the subjects taught in the school. Not only NU-03, but also the regular attitude surveys

carried out by the National Agency for Education show that this is not the case. The evaluation shows that the pupils' perception of the different subjects of the compulsory school in terms of their usefulness, importance, interest etc varies considerably. This also applies *in* the majority of individual subjects. Physics and chemistry are the only subjects where a large proportion of pupils provide negative feedback in a number of respects, whilst physical education and health is the only subject which receives positive overall assessments. The analysis also shows clearly perceived differences in status between subjects in the compulsory school, a factor which may have been strengthened by the fact that the three subjects Swedish, English and mathematics as of school year 1998/99 have become crucial for admission to the upper secondary school.

The introduction of the work team principle (which was not a requirement from the state) has led to greater coordination between teachers of different subjects, but it is still significantly more common that the work team deals with such questions as pupil health and liaison with parents rather than functioning as a forum for joint planning of teaching.

Religious studies is one of the subjects which pupils stated they have least interest in. This is a paradox since the subject deals with the major questions concerning life, ways of living, love, ethics and morals – all issues which young persons are generally interested in. It appears that the subject does not satisfactorily deal with existential issues of importance to pupils. The view that knowledge in the natural sciences is a part of general education is not necessarily self-evident. The relatively abstract (theoretical) contents of science studies can create obstacles. One example of this may be that biology, which is regarded as both interesting and important in relation to the other science subjects, is closely related to the human world, whilst it is difficult to get a feeling for the molecules of chemistry in everyday life. Pupils experience English as both interesting and useful, possibly because they encounter English in many contexts outside school, and also that during their schooling they have already experienced the practical usefulness of the subject.

In this context, the National Agency for Education wishes to draw attention to *the problem of motivation*: some of the subjects in the compulsory school are regarded by the pupils as difficult (mathematics, chemistry, physics), uninteresting (chemistry, physics, religious studies) or of little use (art, chemistry, religious studies) and their results thus become unsatisfactory. This can be contrasted with repeated measures on the part of the state.¹⁵ The fact that pupils'

¹⁵ Cf the Delegation on Mathematics; the so-called "NOT" project; and the introduction of religious studies as a core subject in the upper secondary school.

attitudes are expressed in this way may be connected with insufficient linkage to the pupils' everyday world, the circumstance in which they live and their daily needs: The compulsory school focuses more on *tools and activities* as opposed to reflection, and does not discuss themes, applications and questions in more detail or issues that are more important and related to society and the everyday world. These are just as relevant and applicable to pupils as to adults.

The question of greater relevance to the pupils' everyday thinking must, however, be considered in more detail. Material that exists outside pupils' horizons and which can be experienced as "difficult" and alien must also be a part of the subject if the pupils' daily standpoints are to be challenged and new knowledge conquered. It is not enough just to refer to e.g. social issues. In mathematics and science studies, pupils should also learn to think systematically using the tools of the subject, a skill which imposes major demands on teachers' knowledge in the didactics of the subject.

There needs to be a discussion on the role and structure of the subjects. Even though the mission of the school in terms of providing knowledge is organised on the basis of subjects, it is not self-evident that either the content of the subject or activities in the school must be organised in a traditional way. There may be other more modern and relevant ways of organising learning than the traditional division into subjects.

More subjects such as e.g. art, music, crafts and language share an emphasis on communicative aspects. Other subjects, not just social and science studies, have an *orienting* function such as literature (in Swedish), music and art. Different subjects focus in different ways on *ethical issues and fundamental values*, examples of this are religious studies, history, home and consumer studies, and also physical education and health. Some subjects are characterised by complicated and for many pupils difficult concepts and relationships, e.g. chemistry, physics and mathematics, these *concepts* and *relationships* might perhaps be more understandable if, for instance, they were linked to current global questions and social phenomena, or consumer issues of importance for pupils. Yet another interdisciplinary dimension could be that the compulsory school gives clear and legitimate expression for forms of expression that are *action oriented* and *based on the senses*, as happens most frequently in subjects such as crafts, music, art, home and consumer studies, and physical education and health.

The Delegation on the Timetable presented in spring 2004 an interim evaluation on the feasibility of eliminating the timetable, using as part of its material one third of the sample used in the NU-03 study. In the report of the Delegation, there was little to indicate that the practical and aesthetically oriented subjects would be reduced in terms of hours in relation to subjects allo-

cated more hours under the timetable. The National Agency for Education does not wish to express its views on the effects of a school without a timetable until a complete evaluation of the effects of eliminating the timetable has been carried out.

Large and unknown gender differences in a number of subjects

In all the subjects of the compulsory school, girls, with the exception of physical education and health, get higher grades than boys.¹⁶ The differences have in a number of subjects increased over the period 1998–2003 in favour of girls. The results, both from the national tests and the knowledge tests used in the national evaluation, show that the relationship between the actual knowledge of girls and boys follows the same patterns as grades. For example, it can be mentioned that 75 percent of the lowest decile in the sample with the lowest number of points in the reading test in Swedish in 2003 were boys.

Some subjects appear, however, to provide an opportunity to bridge over these “gender-specific” performance and assessment patterns: in physical education and health, girls who practise sports very much in their free time attain high grades similar to those of boys interested in sports, and in music both girls and boys who play an instrument or participate in choral activities get high grades. At the same time the occurrence of recreational activities of this kind are related to socio-economic background. The evaluation of the subjects of Swedish, music and physical education and health, show that pupils with good cultural and educational resources at home have a great advantage in terms of obtaining a higher grade, compared with pupils who have fewer of these resources. In the subject of music, playing music outside school, which to a certain extent is linked to parental income and cultural involvement, has a great impact on grades in the subject. To this should be added the results from the study in Swedish that many boys, especially in the group with weak cultural support from home, lose much of their motivation in Swedish during the later years of the compulsory school. There is a risk that the school’s opportunities for breaking traditional gender patterns will only have an impact on pupils whose home environment supports this.

In the evaluation in the subject of Swedish, boys state in contrast to girls that they receive support at home in the subject, a result which is also confirmed by an analysis of the results of the Nordic countries in the PISA study.¹⁷

¹⁶ This is also true of technology, but this subject has not been studied in NU-03. ¹⁷ Lie, S, Linnakylä, P, Roe, A, (2003)

¹⁷ Lie, S, Linnakylä, P, Roe, A, (2003)

Swedish, English, biology, art, home and consumer studies, and music are all subjects where a larger proportion of girls than boys state that they are interested in the subjects and also that they receive support and encouragement at home. The corresponding subjects – where a larger proportion of boys state that they not only have an interest but also receive support and encouragement from home – are physics, chemistry and also physical education and health.

The issues concerning this question can be further discussed. Gender differences concerning support can be explained in terms of the same patterns as in a number of earlier studies, which showed that boys compared with girls tend to overestimate their ability and underestimate their need for assistance. Quite simply they believe that they are less in need of assistance. Looking at oneself as someone in need of support and help can be more in conflict with boys' self-image than that of girls.

As mentioned earlier, there are a number of subjects where there are major gender differences in interest. These gender differences go in both directions – in certain subjects, boys are more interested than girls, in others the opposite holds true. Gender differences in terms of whether pupils state that they make an effort to do their best are less – but the pattern that girls more often than boys consider that they make greater efforts to do their best is clear in a number of subjects. It appears as if girls to a larger extent than boys make an effort even when the subject does not interest them.

Overall, this indicates that gender differences in the study results can to some extent be related to motivation and attitudes to studying, and that explanations can be sought in gender-related value patterns in society as a whole. One possible and probable scenario is the attitude that one must educate oneself to be able to manage in life and support oneself has been strengthened for girls/women, whilst school and education for many boys/men has not been given such a dominant value. The much higher level of stress experienced by girls compared with boys – according to the National Agency for Education's regular attitude surveys – may appear to provide support for the view that the school has become a highly important concern for girls, whilst for many boys it is less important.

The American writer Phyllis Burke has coined the term "gender shock"¹⁸ in order to describe the revolution in the participation of women and girls in education which the Western world and some developing countries are cur-

¹⁸ Burke, P. (1996)

rently experiencing.¹⁹ NU-03's picture of the overall results appears to fit into this pattern.

A large proportion of teachers without teaching qualifications

During the first half of the 1990s, the proportion of teachers (converted to annual full-time positions) with pedagogical qualifications from higher education was about 94 percent and in school year 2002/03, the proportion was approximately 80 percent. Statistics Sweden's (SCB) mapping of teachers' educational and pedagogical qualifications in school year 2002/03 shows that of teachers in years 7–9, only about 60–70 percent, depending on subject, have both teaching qualifications and education in the subject. The sample of teachers in NU-03 reveals a similar picture. A review of the research on the importance of different resources for pedagogical outcomes shows that the competence of teachers irrespective of how this is measured, is the single most vital factor determining the results of pupils.²⁰

The evaluation does not give an answer to the question of how important the absence of formal teaching qualifications is. It is, however, important in this context to recall the “new” rigorous requirements of the steering system for well-educated teachers. The National Agency for Education wishes to emphasise that the decline in the educational level of teachers, measured in terms of the proportion with teaching qualifications and education in the subject, is a problem. The trend towards more open methods of working and less specific determination of contents as is increasingly typifying the compulsory school in certain subjects, imposes in all probability additional demands on the competence of teachers. It can be assumed that teachers with a fragmentary knowledge background run a greater risk than teachers with solid subject and didactic knowledge, when emphasis is increasingly put on transferring to pupils personal responsibility for their learning and for choosing contents in freer, more pupil interactive working forms as typifies much teaching today. In order to be able to help pupils to develop their own knowledge, it is necessary that teachers have a good knowledge foundation, awareness of the tasks set out in the steering documents, insight into didactic research in their subjects and their own reference frameworks – in other words a reflective attitude to the domain of knowledge which pupils are to acquire.²¹

¹⁹ See also UNESCO (2004)

²⁰ Gustavsson, J-E, Myrberg, E. (2002)

²¹ See in addition Alexandersson, M. (2004)

More individual work

The results of the evaluation indicate that pupils' individual work has had increased impact on school work in the subject of mathematics and Swedish. In the subjects of art and crafts, there is a long tradition of individual work, a pattern which is also confirmed by this evaluation. The trend towards more individual work appears clearly in the responses to questions about which working methods are generally most common (more individual work and fewer group sessions in 2003 compared with 1992). In year five, group work is less common compared with 10 years ago, and it is more common that pupils work individually on the same things. It can be assumed that this change is linked with how the school has been influenced by Lpo 94, which states that each pupil should take personal responsibility for their learning and their work in school.²²

The contents of different subjects provide radically different preconditions for both ways of working and pupil influence, as has been highlighted earlier by the National Agency for Education.²³ Pupil influence is different and expressed differently in different subjects. In the theoretical subjects, "good" pupil influence deals more with having scope for one's own thoughts, questions and experiences in group discussions than doing "group work" or having greater freedom to determine/choose teaching content as in e.g. crafts. When comparing subjects, the pupils state they have least influence over the contents and working methods in the subjects of mathematics, chemistry, physics, biology and also home and consumer studies, and most influence in crafts.

The pupils consider that working approaches where the teacher talks and puts questions and where individual pupils respond is more common in the theoretically oriented subjects than in the practical and aesthetically oriented subjects. Structuring content, where teachers play a central role, may be one method in subjects with a high theoretical content.

Joint discussions between teachers and pupils occurs according to pupils most frequently in the theoretically oriented subjects. It is most common in social studies, which can deal with the legitimacy of taking different standpoints in issues that concern society and life in society. It is thus not appropriate to refer to *a single method* for teaching which functions everywhere and with all pupils, but rather that there are better and worse methods which are

²² See also Granström, K. (2004)

²³ National Agency for Education (1999)

more or less appropriate for the contents of different subjects and different groups of pupils.

In summary, there is a risk that the requirements of the curricula that each pupil should take responsibility for their studies together with the requirement for pupil influence in teaching is transformed into greater emphasis on individual work. Today this is most apparent in the subjects of Swedish and mathematics. Some questions immediately pose themselves: if pupils receive great freedom to exercise control over their own learning, is there then a risk that teachers are not fully aware of and sufficiently capable of monitoring the pupils' own learning projects in order to provide appropriate feedback on what the pupils have achieved, as well as having a sound basis for assessing the pupils' knowledge? Does the increasing frequency of individual work contribute to certain pupils being neglected and restricted to horizons set by their own perceptions? Is a working method where pupils work on their own and the teacher goes round helping pupils individually with the same things the best way of using teaching resources? Is this method of working appropriate for all pupils irrespective of their level of ambition, interest and degree of maturity?

Assessing knowledge is not without problems

The results of the evaluation, where close to 30 percent of the pupils state that they do not have any discussion with the teacher about how they are progressing in the practical and aesthetically oriented subjects and that in these subjects there are shortcomings in the extent to which the contents of the syllabuses are clarified for pupils, indicates a communication problem concerning assessment which can have an impact on the legal rights of pupils. The idea behind providing less detailed formulations in Syllabus 2000 in some subjects has been to provide greater scope for professional teachers in the compulsory school to choose material and methods. If teachers' personal interests and/or the school's traditional emphasis on subjects influences teaching and assessment in a direction different from the goals of the steering documents and the grading criteria stated therein, there is a risk that there will be shortcomings in providing equivalent assessment. It appears that there is a genuine dilemma in that local interpretations of the curricula and syllabuses will be made, and that this will at the same time lead to a situation where the very concept of equivalence may be undermined.

The goals set out in Lpo 94 can be regarded as a shift from merely prescribing *knowledge* in different subjects to also prescribing *approaches and perspectives* to knowledge. Much of what is difficult to assess in concrete terms such as

e.g. the ability to cooperate, critical thinking and learning outside school, has as a result of the new steering document been given increasing focus in school work and incorporated by teachers when assessing pupils, especially in the higher grading categories. This can create uncertainty among pupils and parents concerning what the grades really are based on and problems for teachers in communicating the foundations on which grades are assessed. Where a number of important goals laid down in the syllabus are outside what the school is used to measuring and communicating in an objective, clear and consistent way, pupils' subject grades become as a consequence a weaker tool for assessing goal attainment.

The dilemma for head teachers and teachers is to strike a good balance between the use of tests to measure knowledge in an objective and communicable way, and an assessment of goal attainment based on the joint views of teachers of areas which cannot simply be measured by tests. Implicit in measuring is the risk of over-defining the goals – and without objective measuring instruments, the assessment runs the risk of becoming arbitrary and less transparent.

Final reflections

NU-03 contributes to providing detailed knowledge not only on the compulsory school's attainment of goals, but also possible explanations for shortcomings of various kinds. This report aims at providing an initial, mainly descriptive overview of the results at the national level based on the sample studied in the evaluation. The wealth of material available provides opportunities to i.a. study more closely the underlying variation between pupils at both group and individual level, as well as analyse in greater detail the responses of teachers generally and in different subjects. During 2005 the National Agency for Education intends to follow up the existing report with both more detailed subject reports, as well as a number of thematic reports.

References

- Alexandersson, M. (2004) *Textflytt och sökslump*. Forskning i fokus, nr 18. Myndigheten för skolutveckling.
- Bowles, G. & O. (2001) Incentive-enhancing preferences: Personality, Behaviour and Earnings. *American Economic Review*. Vol. 91, No. 2.
- Burke, P. (1996) *Gender shock: Exploring the Myths of Male and Female*. New York: Doubleday.
- Granström, K. (2004) *Arbetsformer och dynamik i klassrummet* i Selander, S. (red.) Kobran, nallen och majjen – tradition och förnyelse i svensk skola och skolforskning. Forskning i fokus, nr. 12. Myndigheten för skolutveckling (National Agency for School Improvement).
- Gustavsson, J-E, Myrberg, E. (2002) *Ekonomiska resursers betydelse för pedagogiska resultat – en kunskapsöversikt*. Monographs of the National Agency for Education. Stockholm: Liber.
- Lie, S, Linnakylä, P, Roe, A, (2003) *Northern Lights on PISA – Unity and Diversity in the Nordic Countries in PISA 2000*. Oslo.
- OECD (2000) *Literacy in the information Age*. Paris: OECD.
- OECD (2002) *Education Policy Analysis*. Paris: OECD.
- Skolverket (1999) *Läroplanerna i praktiken. Utvärdering av skolan 1998 avseende läroplanernas resultat*. Rapport nr 175 Stockholm: Liber.
- Skolverket (2004a) *Engelska i åtta europeiska länder – en undersökning av ungdomars kunskaper och uppfattningar*. Rapport 208. Stockholm: Fritzes.
- Skolverket (2004b) *Nationella utvärderingen av grundskolan 2003 – sammanfattande huvudrapport*. Rapport 250. Stockholm: Fritzes.
- Smidt, J. & L.S.Evensen (1991) *Roller i relief: Skrivestrategier – tekster – lesestrategier*. Trondheim: Allforsk.
- UNESCO (2004) *Gender and Education for All. The Leap to Equality. EFA Global Monitoring Report*. Paris: UNESCO.
- Åsén, G. (1998) Ett ämne före sin tid: Teckning. In Börre-Jensen et al (red) *Kunskapens texter. Jakten på den goda läroboken*. Oslo: Universitetsförlaget.

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